# H.P FOREST DEPARTMENT

HPNRMS

# Project Implementation Plan

## (PIP)

(16 June 2020 Version-1)

Integrated Development Project for

Source Sustainability and Climate Resilient Rain Fed Agriculture

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| List of Acronyms | |
|---|---|
| ACF | Assistant Conservator of Forests |
| ACS | Additional Chief Secretary |
| AEO | Agriculture Extension Officer |
| ANR | Assisted Natural Regeneration |
| APCCF | Additional Principal Chief Conservator of Forests |
| APMU | Assistant Project Management Unit |
| APO | Annual Work Plan |
| APO | Assistant Project Office/Officer |
| BMP | Biodiversity Management Plan |
| BPL | Below poverty line |
| CAAA | Controller of Aid Accounts and Audit |
| CAG | Common Activity Group |
| CAMPA | Compensatory Afforestation Fund Management and Planning Authority |
| CAT | Catchment Area Treatment |
| CBO | Community Based Organization |
| CCF | Chief Conservator of Forests |
| CDD | Community Driven Development Project |
| CIG | Common Interest Group |
| CPD | Chief Project Director |
| CRI | Corporate Result Indicator |
| CSA | Climate Smart Agriculture |
| CSKHPKV | Choudhary Srawan Kumar Himachal Pradesh Krishi Vishava Vidyalaya |
| cum | Cubic Meter |
| DCF | Deputy Conservator of Forests |
| DDO | Drawing and Disbursing Officer |
| DDUGKY | Dindayal Upadhyaya GraminKoushalYojna |
| DEA | Department of Economic Affairs |
| DLCC | District Level Co-Ordination Committee |
| DLI | Development Linked Indicator |
| DLT | Drainage Line Treatment |

| | |
|---|---|
| DPMU | District Project Management Unit |
| DPO | District Project Office/Officer |
| DRDA | District Rural Development Authority |
| EAP | Externally Aided Project |
| EC | Executive Committee |
| ED | Executive Director |
| EHSG | Environmental Health and Safety Guidelines |
| ESA | Environmental and Social Assessment |
| ESF | Environmental and Social Framework |
| ESMF | Environmental and Social Management Framework |
| ESS | Environmental and Social Standards |
| FC | Finance Committee |
| FDRS | Fire Danger Rating System |
| FEO | Forest Extension Officer |
| FM | Financial Management |
| FMS | Financial Management System |
| GAP | Gender Action Plan |
| GC | Governing Council |
| GeM | Government e-Market |
| GHG | Green House Gas |
| GIS | Geographical Information System |
| GoHP | Govt of Himachal Pradesh |
| GoI | Government of India |
| GP | Gram Panchayat |
| GPRMP | Gram Panchayat Resource Management Plan |
| GRM | Grievance Redress Mechanism |
| GSDP | Gross State Domestic Production |
| GST | Goods & Service Tax |
| Ha. | Hectare |
| HH | Household |
| HoD | Head of Department |
| HoFF | Head of Forest Force |
| HP OLTIS | HP Online Treasury Information System |

| | |
|---|---|
| HPFD | Himachal Pradesh Forest Department |
| HPMHWDP | HP Mid Himalayan Watershed Development Project |
| HPRLM | HP National Rural Livelihood Mission |
| HVC | High Value Crops |
| IBRD | International Bank for Reconstruction and Development |
| ICB | International Competitive Bidding |
| IDP | Integrated Development Project for Source Sustainability and Climate Resilient Rainfed Agriculture |
| IEC | Information Education and Communication |
| IEC | Information Education and Communication |
| IFMS | Integrated Forest Management System |
| IPH | Irrigation and Public Health |
| IPNMP | Integrated Pest & Nutrient Management Plan |
| IT | Information Technology |
| IUFR | InterimUnaudited Financial Reports |
| IWM | Integrated Watershed Management |
| JICA | Japan International Cooperation Agency |
| KVK | Krishi Vigyan Kendra |
| LMP | Labour Management Procedures |
| M&E | Monitoring and Evaluation |
| MAP | Medicinal Aromatic Plants |
| MEL | Monitoring Evaluation and Learning |
| MG | Matching Grant |
| MGNREGA | Mahatma Gandhi National Rural Employment Guarantee Act |
| MIS | Management Information System |
| MoA | Ministry of Agriculture |
| MoEF | Ministry of Environment and Forests |
| NCB | National Competitive Bidding |
| NFSM | National Food Security Mission |
| NHM | National Horticulture Mission |
| NIC | National Informatics Centre |
| NRLM | National Rural Livelihood Mission |
| NRM | Natural Resource Management |

| | |
|---|---|
| NS | National Shopping |
| NTFP | Non Timber Forest Produce |
| NTFP | Non Timber Forest Produce |
| O & M | Operation and Maintenance |
| OMIF | Operation, Maintenance and Investment Fund |
| PAD | Project Appraisal Document |
| PAN | Protected Area Network |
| PCCF | Principal Chief Conservator of Forests |
| PCR | Physical Cultural Resource |
| PDO | Project Development Objective |
| PG | Producer Group |
| PIP | Project Implementation Plan |
| PMIS | Project Management Information System |
| PMKVY | Prdhan Mantri Koushal Vikas Yojna |
| PMU | Project Management Unit |
| PO | Producer Organization |
| PRA | Participatory Rural Appraisal |
| PRI | Panchayati Raj Institution |
| QBS | Quality Based Selection |
| QCBS | Quality & Cost Based Selection |
| RD | Rural Development |
| RF | Result Framework |
| RFP | Request for Proposal |
| RKVY | Rashtriya Krishi Vikas Yojana |
| rmt | Running Meter |
| RPF | Resettlement Policy Framework |
| SAU | State Agriculture University |
| SC | Scheduled caste |
| SEO | Social Extension Officer |
| SEP | Stakeholder Engagement Plan |
| SHG | Self Help Group |
| SLM | Sustainable Land Management |
| SLWM | Sustainable Land & Water Resource Management |

| | |
|---|---|
| SLWM | Sustainable Land and water management |
| SMS | Subject Matter Specialist |
| SOE | Standard Object of Expenditure |
| SPMU | State Project Management Unit |
| sqm | Square meter |
| ST | Scheduled tribe |
| STEP | Systematic Tracking of Exchanges in Procurement |
| SWC | Soil and Water Conservation |
| TA | Technical Assistant |
| TDF | Tribal Development Framework |
| TDP | Tribal Development Plan |
| TNA | Training Need Assessment |
| ToT | Transfer of Technology |
| TSA | Technical Support Agency |
| UG | User Group |
| VC | Value Chain |
| VEO | Veterinary Extension Officer |
| VFDC | Village Forest Development Committee |
| WL | Wild Life |
| WPDF | Watershed Participatory Development Facilitators |
| WUG | Water User Group |
| ZBNF | Zero Based Natural Farming |

# Background

The Government of Himachal Pradesh received financial assistance from The World Bank for implementation of Himachal Pradesh Mid Himalayan Watershed Development Project (HP-MHWDP). The Project was being implemented by the Himachal Pradesh Natural Resource Management Society, and the nodal department was the Himachal Pradesh State Forest Department, with its head office at Solan. The Project was headed by a Chief Project Director (CPD). The Project Development Objective (PDO) was 'to reverse the process of degradation of the natural resource base and improve the productive potential of natural resources and incomes of the rural households in the project area in Himachal Pradesh using the community-driven development approach.' A secondary objective was to support policy and institutional development in the state to harmonize watershed development projects and programs across the state in accordance with best practices.

The HPMHWDP was started in the year 2005 and completed on 31st March 2017. It was implemented initially in 602gram-panchayats of 10 districts, which was later extended to another 108 gram-panchayats. An estimated 2.28 lakh households within the project area were likely to be benefited from the project outcomes. The project exhibited an increase in real income by 20.7%, increase in biomass production by 46.25%, increase in yield of Wheat, Maize & Milk by 25.9%, 28.9% and 10.7% respectively. Under the project, a total of 3,098 SHGS, 6,977, Users Groups and 5,967 Common Interest Groups (CIG) were established and capacitated.

Based on successful implementation of the project and many clear gains, and learning of many important lessons, the Government of Himachal Pradesh (GoHP) proposed a follow-up project titled, 'Integrated Development Project for Source Sustainability and Climate Resilient Rain-fed Agriculture' (in short IDP) in the selected Gram Panchayats of the State. Actually, IDP carries forward the ideas and learnings of H.P. Mid Himalayan Watershed Development Project (HPMHWDP).

## 1.1. Himachal Pradesh-An Introduction

### 1.1.1. Location and topography

Situated on the northern part of India, the state of Himachal Pradesh extends over an area of 55,673 Sq. km. and lies between 30˚22' 44" north latitude and 75°45'45" to 79°04'20" east longitudes. It ranks 17$^{th}$ among the States and Union Territories of India in terms of area. State's 67% of total area is covered by hills of western Himalayas. It is bordered by union territories of Jammu and Kashmir and Ladakh on the north, Punjab on the west, Haryana on the southwest, Uttarakhand on the southeast, and Tibet on the east, at its southernmost point; it also touches the state of Uttar Pradesh.

Being a hilly region, the altitude ranges from 350 meters to 6975 meters above mean sea level. The altitude increases from west to east and south to north. Important mountains ranges are Siwalik, Dhauladhar, Pirpanjal, great Himalayas and Zanskar. Separated by valleys and hills, there are four distinct physiographic zones, which run almost parallel throughout the length of the state from west to east. These include:

a. Sub- Himalayan Zone
b. Lower- Himalayan Zone
c. Higher- Himalayan Zone
d. Tibetan or Tethys Zone

### 1.1.2. Administration

The present-day State gets its full statehood on 25 January 1971, after transferring and merging some parts of the then Punjab state.

For administrative purposes, the state is divided into 12 districts, which are grouped into three divisions, Shimla, Kangra and Mandi. The districts are further divided into 69 subdivisions, 78 blocks and 145 tehsils (Table 1.1). The Lahaul-Spiti, with 13835 sq km area is the largest district and covered about 25% of the total area of the state.

**Table 1.1: Key demographic and administrative features of the State**

| District | Area (Sq.km.) | Population (2011) | No. of Subdivision | No. of Development Blocks | No. of Gram Panchayat |
|---|---|---|---|---|---|
| Bilaspur | 1,167 | 381956 | 4 | 4 | 151 |
| Chamba | 6,522 | 519080 | 7 | 7 | 283 |
| Hamirpur | 1,118 | 454768 | 5 | 6 | 229 |
| Kangra | 5,739 | 1510075 | 14 | 15 | 748 |
| Kinnaur | 6,401 | 84121 | 3 | 3 | 65 |
| Kullu | 5,503 | 437903 | 4 | 5 | 204 |
| Lahaul-Spiti | 13,841 | 31564 | 3 | 2 | 41 |
| Mandi | 3,950 | 999777 | 10 | 10 | 469 |
| Shimla | 5,131 | 814010 | 8 | 10 | 363 |
| Sirmour | 2,825 | 529855 | 5 | 6 | 228 |
| Solan | 1,936 | 580320 | 4 | 5 | 211 |
| Una | 1,540 | 521173 | 4 | 5 | 234 |
| Total | 55,673 | 6864602 | 71 | 78 | 3226 |

Source: Statistical year book of HP 2017-18

### 1.1.3. Bio-physical Setting

Wide differences in geo-physical features account for considerable variation in the climate and rainfall of different sub regions of the state. While physio-graphically the state is part of Himalayan system, from south to north it can be divided into four different agro-climatic zones:

i. **Shiwalik Hills** zone consists of foothills and valley areas up to an elevation of about 800 metres above the mean sea level with sub-tropical climate. It occupies about 36% of the geographical area and about 33% of the cultivated area of the State. The soils are mostly sandy loam in texture with scattered loamy patches. The area is highly erosion prone due to weak geological formation and scanty

vegetation. In this area, moisture retention capacity is quite poor. The area receives about1,500 mm of annual rainfall.

ii. **Mid-Hills** zone extends from 800 metres to 1600 metres above mean sea level having mild temperate climate with annual precipitation of about 1800 mm. The soils vary from sandy loam to loam in texture. It occupies about 33% of the geographical area and about 53% of the cultivated area of the State. The peculiarity of this area is that major portion of its uncultivated area is under grasslands, mostly on the southern and western slopes. The forests are mainly met with on northern and north-eastern slopes.

iii. **High Hills** zone falls above 1,600 metres above mean sea level with humid temperate climate and alpine pastures. The zone covers about 25% of the geographical and about 11% of the cultivated area of the State. The annual precipitation varies from 1,000 to 1,500 mm. Most of the cultivated area of this region being located on higher reaches lacks irrigation potential.

iv. **Cold Dry zone** lies above 2,700 metres above mean sea level. It occupies about 6% of the geographical area and 3% of the cultivated area of the State. The level of the precipitation is as low as 200 mm during summer and very heavy precipitation in the winter in the form of snow. Being a single cropped area, the cultivation is carried out only in summer season under irrigated conditions.

Five perennial rivers and their tributaries cris-cross the state. These include Sutlej, Beas, Ravi, Chenab and Yamuna. Except Yamuna, other rivers are part of larger Indus River basin. Predominantly hilly and undulating catchment of these rivers limits their irrigation potential.

Climate of the State varies from semi-tropical to the semi-arctic depending on the altitude and is essentially determined by the south west and winter monsoons. While average annual rainfall is about 1110 mm, it varies from less than 500 mm in Lahual and Spiti to more than 3000 mm in Kangra (Dharamsala). Spatially, the rainfall follows altitudinal patterns and increase from plains to the hills. However, due to rain shadow effect of the Dhauladhar and Pir-Panjal ranges, rainfall gets declined towards Lahul-Spiti and Kinnaur.

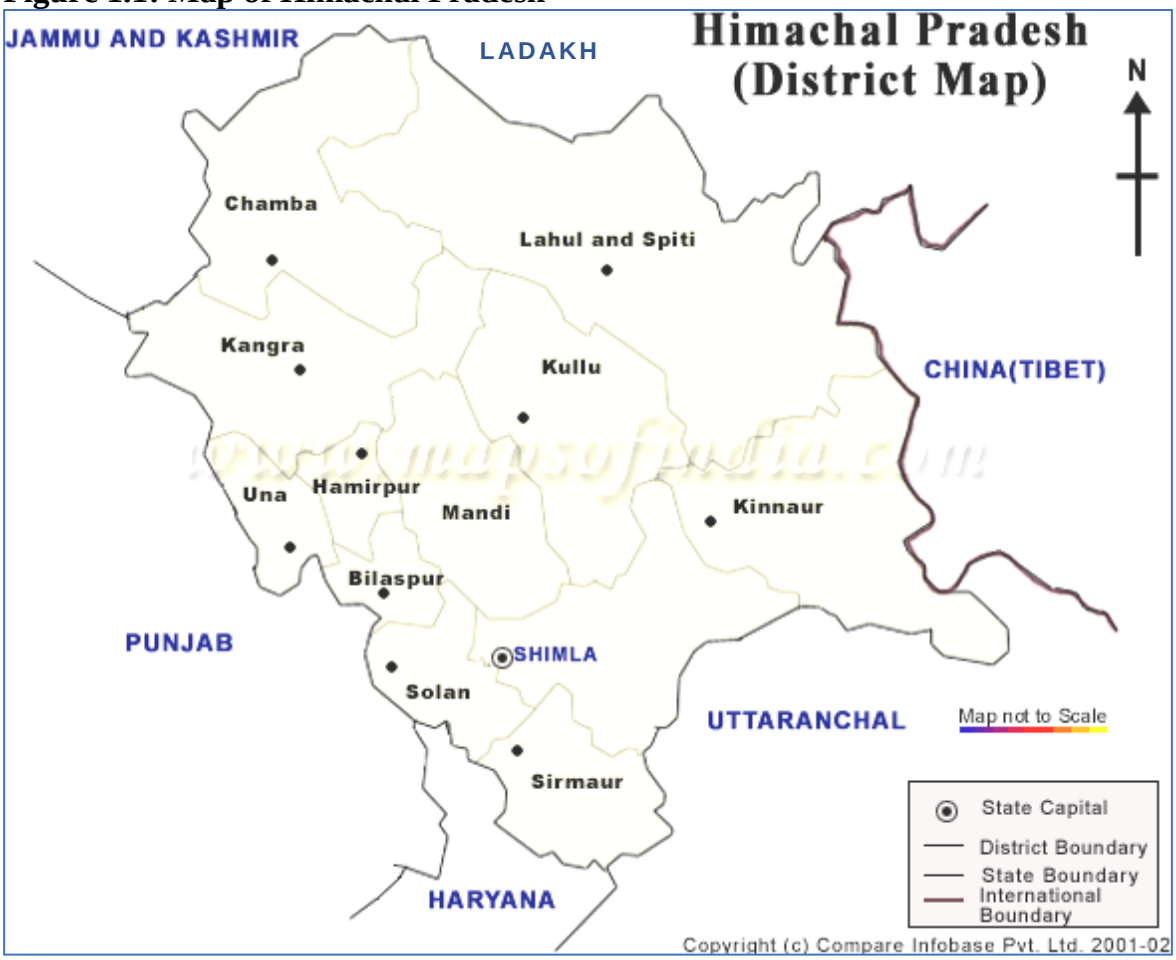
### 1.1.4. Biodiversity

The physiographical, climatic and altitudinal variations create diverse landforms and thus ecologically diverse systems. In bio geographic terms, the State falls under four distinct biotic provinces: (i) Trans-Himalayan eastern plateau which includes Spiti area (ii) Northwest Himalayan, west of Sutlej river (iii) West Himalayan, east of Sutlej river, and (iv) Semi-arid hot dry foothills (Rodger and Panwar, 1988). Forests, alpine grassland, high altitude lakes, cold deserts and glaciers are major natural ecosystems of the state. These ecosystems are inhabited by large number of flora and fauna, including many rare and threatened ones. Some of the notable wild species of the state are Snow Leopard, Brown Bear, Himalayan Black Bear, Leopard, Himalayan Thar, Ibex, Musk Deer, Ghoral, Western Tragopan, Monal etc.

With a view to conserve the total range of wildlife available in the state, the Government of Himachal Pradesh has declared several areas, covering different agro-climatic zones of the state and having significant ecological, geo-morphological and biodiversity value, as Conservation Reserves, Wildlife Sanctuaries and National

Parks. Thus, 5 national parks, 26 wildlife sanctuaries and 3 conservation reserves are created covering a total of 8391sq km area which is about 15% of the total geographical area of the state.

**Figure 1.1: Map of Himachal Pradesh**




### 1.1.5. Land use Pattern

Based on the most recent land-use statistics available, only about 12% of the area of the State for which data is reported is under cultivation. About one third area of the state is under permanent snow, glaciers and cold-deserts, and thus practically out of production system. A summary of land use pattern in the state is presented in Table 1.2.

**Table 1.2: Land-use pattern of State**

| Land use | Area ('000 ha) |
|---|---|
| Total geographical area | 5567 |
| Reported Area by Village Papers | 4576 |
| Forest | 1127 |
| Permanent Pasture & Other Grazing land | 1510 |
| Land Under Misc. Tree Crops & Groves | 64 |
| Culturable Wasteland | 122 |
| Other Fallows | 22 |
| Current Fallow | 54 |
| Net Area Sown | 550 |
| % of Net Area Sown to Reporting Area | 12 |
| Source: Statistical Year Book 2017-18 | |

### 1.1.6. Forest Status

The legally recorded forests in the state totals 37033 sq km area that is 66.5 per cent of the geographical area of the state. Of the total recorded forests, 5.1 per cent is Reserve Forests, 89.5 per cent is Protected Forests and 2.39 per cent is un-classed forests.
As per Champion and Seth's classification of Forest types, the state has eight forest type groups (with 38 forest sub-types) namely 3 Tropical Moist Deciduous Forests (2.83%), 5 Tropical Dry Deciduous Forests (9.74%), 9 Subtropical Pine Forest (23.23%), 12 Himalayan Moist Temperate Forests (45.95%), 13 Himalayan Dry Temperate Forests (6.73%), 14 Sub-Alpine Forests (6.00%), 15 Moist Alpine Scrubs (0.67%) and 16 Dry Alpine Scrub Forests (4.83%).

The India State of Forest Report 2019 produced by the Forest Survey of India, Dehradun estimates the forest cover in Himachal Pradesh at 15433.52 sq km, which is 27.72 % of geographical area of the state. The State of Forest Reports produced biannually, and it classifies forest coverage as follows: Very dense forests- where canopy cover is 70% and above; Moderately dense forests- where the canopy cover is from 40 to 70% and Open forests- 10 to 40%. In terms of forest canopy density classes, the state has 3112.71 sq km under very dense forest, 7125.93 sq km under moderately dense forest and 5194.88 sq km under open forest types. The forests are distributed differently across the altitudinal zones of the state (Table 1.3). Thus, the about 63% of total area of altitude between 2000-3000 meter has forest cover and just 0.1% area is under forest in area above 4000-meter altitude.

**Table 1.3: Distribution of forest of different canopy classes across altitude**

| Altitude zone (m) | Area (sq km) | | | | |
|---|---|---|---|---|---|
| | Geog. Area | VDF | MDF | OF | Total |
| 0-500 | 2925 | 13 | 458 | 360 | 831 |
| 500-1000 | 7625 | 220 | 1912 | 1589 | 3721 |
| 1000-2000 | 9628 | 694 | 1679 | 1552 | 3925 |
| 2000-3000 | 8101 | 1814 | 2225 | 1057 | 5096 |
| 3000-4000 | 6848 | 372 | 848 | 625 | 1845 |
| >4000 | 20546 | 0 | 4 | 12 | 16 |
| Total | 55673 | 3113 | 7126 | 5195 | 15434 |
| Source: FSI, 2019 | | | | | |

The annual total economic value of the forests of the state of Himachal Pradesh was estimated to be around Rs 1,066 billion per year by Verma (2000)[1].

### 1.1.7. Macro-economic Situation

The state has been witnessing a constant growth in last few years. At constant price (2011-12), Gross State Domestic Product (GSDP) of the state has increased from Rs. 72,720 crores in FY12 to Rs. 1,09,747 crores in FY18. The GSDP of the state has grown at an average rate of 7.3% during the period of FY15-18, although growth is bit slumped recently (Table 1.4). In 2017-18, per capita income of the state was Rs. 1,60,711, about Rs. 60000 more than the national per capita income (i.e. Rs. 1,00,151). Between 2011-12

[1]Verma, M. 2000. Himachal Pradesh Forestry Sector Review: Economic valuation of Forests of Himachal Pradesh. Report submitted to International Institute for Environmental Development, London, UK.

and 2017-18, the per capita income of the State has grown with about 7.2% CAGR.

| Table 1.4: Changes in GSDP statistics of the State | | | | | |
|---|---|---|---|---|---|
| **Parameters** | **2011-12** | **2014-15** | **2015-16** | **2016-17** | **2017-18** |
| GSDP (Crore Rs). | 72720 | 89095 | 96289 | 103038 | 109747 |
| GSDP Growth (%) | 7.3 | 7.5 | 8.1 | 7.0 | 6.5 |
| GSDP Per Capita Income (Rs.) | 1,05,934 | 1,24,325 | 1,35,621 | 1,49,028 | 1,60,711 |
| Source: Economic Survey of Himachal Pradesh-2015-16 & 2018-19. http://www.esopb.gov.in/Static/PDF/GSDP/Statewise-Data/StateWiseData.pdf | | | | | |

While the economic growth in the State is predominantly governed by agriculture and its allied activities, in recent years, there is a clear shift to industrial and service sectors Thus, share of agriculture is reduced from 26.5% in 1990-91 to 8.8% in 2017-18[2]. During the same period, however, contribution of industries and services had grown up from 9.4% and 19.8% to 29.2% and 43.3%, respectively. The declining share of agriculture sector do not, however, affect the importance of this sector in the State economy as the state economic growth still is being determined by the trend in agriculture and horticulture production. In absolute terms, it is still the major contributor to the total domestic product (Rs. 9,012 Cr in 2017-18[3]) and has overall impact on other sectors via input linkages, employment and trade etc. Tourism is an important service sector, generating large employment in the state. In last few years, there is a steady rise in the domestic as well as foreign tourist inflow. Thus, while total 71.4 lakh tourists visited state in 2005, the number grows to 196 lakhs in 2017[4].

In terms of infrastructure, at the end of FY17, the State of Himachal Pradesh has a total 62812 km length of roads. Of this, rural roads covered 49631 km (i.e. 79%)[5]. Compared to national average of 115 km, the state has a road density of 63 km per 100 sq km area[6]. Considering the hilly terrain, the road density is not comparable.

Hydroelectric generation is a major production activity of state. Himachal Pradesh is extremely rich in its hydroelectricity resources. The state has about twenty five percent of the national potential. About 27,436 MW of hydroelectric power can be generated in the state by the construction of various hydroelectric projects on the five perennial river basins.

### 1.1.8. Human Development Indices

The State is inhabited by diverse communities, which include eight Scheduled Tribes, namely, Kinnaras, Gaddis, Pangwals, Bhot/Bodh, Gujjars, Jad/Lama/ Khampa, Lahula, and Swangla. State also inhabited by 56 scheduled castes.
Despite the difficult geographical conditions, the state of Himachal Pradesh had better numbers in several human development indices, compared to national average. Some of these indicators include, population below poverty line (BPL), both male and

[2]Economic Survey of Himachal Pradesh- 2018-19.
[3]Ibid.
[4]Verma, M. 2000.
[5]https://morth.nic.in/sites/default/files/Basic%20Road%20Statics%20of%20India%20CTCcompressed1.pdf
[6] http://mospi.nic.in/sites/default/files/cocsso/2_HimachalPradesh.pdf

female literacy rate, infant mortality rate etc (Table 1.5). Himachal Pradesh also has a high female work participation rate compared with the national average. This along with the benefit of high female literacy may have contributed in better gender inclusion. The relatively higher sex ratio in the State is also a reflection of this.

**Table 1.5: Summary of key human development indices in Himachal Pradesh**

| # | Item | Unit | State Average | National average |
|---|---|---|---|---|
| 1 | Per capita income | Rupees | 158462 | 113500 |
| 2 | Population (BPL) | Percent | 8.6 | 21.9 |
| 3 | SC population | Percent | 25.19 | 16.6 |
| 4 | ST population | Percent | 5.71 | 8.08 |
| 5 | Infant mortality | Out of 1000 | 22 | 39 |
| 6 | Sex ratio | Women/1000 men | 972 | 930 |
| 7 | Male literacy rate | Percent | 90.83 | 82.14 |
| 8 | Female literacy rate | Percent | 76.60 | 65.46 |
| 9 | Female work participation rate[7] | Percent | 44.82 | 25.51 |
| Source: Economic Survey of Himachal Pradesh, 2018-19 | | | | |

In terms of poverty, 8% of the total population of the state lives below the poverty line (BPL). Compared to low hills and plain regions, high mountain areas (like Chamba, Kullu, Mandi, Lahaul &Spiti and Kinnaur districts) have lower literacy levels and higher incidence of poverty, mainly due to higher degree of inaccessibility. Nevertheless, the State has been able to reduce the poverty numbers significantly in the last few years. The percentage population below poverty line has declined by around 15 percentage points from 2004-05 to 2011-12. Further, the percentage population below poverty line stands at 8% in 2011-12 which is significantly lower than many states and well below the national average of 21.9%.The overall poverty decline has benefitted all social groups. Further, the poverty among different social groups indicated that in case of SC & ST population, percent share of poor to total poor, were higher than their proportional representation in the total population (Table 1.6). Still, however, poverty was highest among SCs at 16.5 percent and among STs at 9.5 percent. During the same period, the poverty was dropped to as low as 2.3 percent among the OBCs[8].

**Table 1.6: Percentage distribution of poor by Social Group (2011-12)**

| Social Group | Per cent share of persons to Total persons | Per cent share of poor to total poor |
|---|---|---|
| ST | 7.2 | 8.3 |
| SC | 23.0 | 45.5 |
| OBC | 18.9 | 6.6 |
| Others | 50.8 | 39.7 |
| Source: Radhakrishnan (2015)[9] | | |

In basic women and child health indicator, State still need to do a lot. As per nutritional

[7] http://mospi.nic.in/sites/default/files/reports_and_publication/statistical_publication/social_statistics/WM17Chapter4.pdf

[8] Maitreyi Bordia Das, Soumya Kapoor-Mehta, Emcet Oktay Tas and Ieva Zumbyte. 2015. Scaling the Heights. Social Inclusion and Sustainable Development in Himachal Pradesh. World Bank Group.

[9] Radhakrishnan, R. 2015: Well-being, inequality, poverty and pathways out of poverty in India. Econ. Politic. Week., 50 (41): 59-71

survey conducted by women and social welfare department, GoI, 81% of children suffered from mild to moderate malnutrition and 4% from severe degree of malnutrition. As per NFHS-2, 40% women and 67% children are suffering from anemia[10]. 26% of children (<5 yr age) were stunted or too short for their age, which indicates that they have been undernourished for some time. But, between 2005-06 (NFHS-3) and 2016 (NFHS-4) the percentage of children who are underweight decreased from 37 percent to 21 percent. Among children (<5 yr), a majority (54%) are anemic, more in girls than boys. Among women, 54% have anemia, slightly more prevalent in tribal women. However, between 2005-06 and 2016, anemia among women has increased by 12 percentage points[11].

### 1.1.9. Skill Development and Job Opportunities

According to a study, that cover different economic sectors of the state, by 2022 there will be a requirement of 6.4 lakh manpower, of which skilled and semi-skilled manpower requirement is about 2 lakhs[12]. Agriculture, construction, banking, communication, transport and health care are the most demanding sectors.

With major focus on skilling program in the state, Himachal Pradesh Kaushal Vikas Nigam (HPKVN) was initiated as a specialised skill development company in 2015. The aim was to consolidate the fragmented technical and vocational educational and training programs and facilitate private sector participation in designing and delivering these. The policy was in-tuned with two of the national flagship skill development schemes - Pradhan Mantri Koushal Vikas Yojna (PMKVY) and Dindayal Upadhyaya GraminKoushalYojna(DDUGKY). In 2016, Himachal Pradesh Skill Development Policy (Him Kaushal) was placed to guide the reform and expansion of skill development efforts in the state[13].

As part of larger National Rural Livelihood Mission (NRLM), since 2013, Himachal Pradesh Rural Livelihood Mission (HPRLM) also provides significant support to institutional building of community institutions in rural/tribal areas, with special focus on skill enhancement for entrepreneurship development among youth and women[14].

### 1.1.10. Agriculture and Allied Sector

The proportion of rural population in the state is about 90 percent- the highest among all the Indian States (2011 Census). Thus, despite a steady decline in the contribution in overall economy of the state, dependency on agriculture and allied sectors including the livestock and horticulture is central. This is also corroborated by the fact that about 62 percent of total workers of the State are associated with agriculture. About 9 per cent of the total GSDP comes from agriculture and its allied sectors[15].

According to 2010-11 Agricultural Census, the area under operational holdings is about 9.55 lakh hectares, operated by 9.61 lakh farmers. The average holding size is less than one hectare. Distribution of land holdings shows that 87.95 percent of the total holdings

[10] http://medind.nic.in/haa/t04/i1/haat04i1p33.pdf
[11] http://rchiips.org/nfhs/NFHS-4Reports/HimachalPradesh.pdf
[12] https://nsdcindia.org/sites/default/files/files/hp-sg-presentation.pdf
[13] http://www.hpkvn.in/
[14] https://hprural.nic.in/Status_Guidelines.pdf
[15] Economic Survey of Himachal Pradesh-2018-19.

are of Small and Marginal farmers. About 11.71 percent of holdings are of Semi Medium and Medium farmers and only 0.34 percent by large farmers.

The state agriculture is still a rainfed system due to lack of irrigation facilities, owe to hilly terrain, making it highly vulnerable to varying climate and weather conditions. Only 20.5% of cropped area has irrigation facility. The key agriculture production related statistics is presented in Table 1.7.

**Table 1.7: Key agriculture area and production statistics of State**

| # | Variables | 2000-01 | 2010-11 | 2017-18 |
|---|---|---|---|---|
| 1 | Agriculture share in GSDP (%) | 18.79 | 13.22 | 9.3 |
| 2 | Agricultural workers (%) | 68.47 | 62.85 | - |
| 3 | Total cropped area ('000 ha) | 947.6 | 938.6 | NA |
| 4 | Gross irrigated area ('000 ha) | 180.9 | 193.0 | NA |
| 5 | Food Grain Production (in 000 MT) | 1112.1 | 1420.4 | 1634.05* |
| 6 | Fruit production (in 000MT) | 459.62 | 1027.82 | 565.30 |

* Data is for 2015-16.
Source: Kumar and Pattnaik, 2018[16]

Rice, Wheat and Maize are important cereal crops of the State. Groundnut, Soyabean and Sunflower in Kharif and Rapeseed / Mustard and Toria in the Rabi season are important oilseed crops. Urd, Bean, Moong, Rajmah in Kharif season and Gram Lentil in Rabi are the important pulse crops of the State. Potato and vegetables are the major cash crops of the State.In year 2016-17 and 2017-18, total area under food grain cultivation was about 7.53 and 7.89 lakh hectares, respectively.

The rich diversity of agro-climatic conditions, topographical and altitudinal variations coupled with fertile, deep and well drained soils favour the cultivation of temperate to sub-tropical fruits in the State. The region is also suitable for cultivation of ancillary horticultural produce like flowers, mushroom and honey. Recently, the State registered significant development in fruit production. The area under fruit crops, which was merely 792 hectares in 1950-51 with total production of 1200 tonne is increased to 2.31 lakh hectares in 2017-18 with fruit production touched to 5.65 lakh tonne. Apple is the most important fruit crop of State which constitutes about 49 percent of the total area under fruit crops and about 79 percent of the total fruit production. However, between 1960-61 and 2017-18, area under other horticulture crops has also recorded significant increase. For example, temperate fruits: 900 to 28369 hectares, nuts and dry fruits: 231 to 10301 hectares, citrus: 1225 to 24649 hectares, and other sub-tropical fruits: 623 to 54,899 hectares. Growing of off-season vegetables has also picked up in the state. During the year 2017-18, 16.92 lakh tonnes of vegetables were produced[17].

Livestock rearing is integral part of agriculture system in the State. However, the state is also known for its transhumant pastoral mode of livelihood of communities such as Gaddis and Gujjars, centred around sheep and goat. The seasonal migration along the altitude for grass and fodder from forest or alpine pastures, is the mainstay of sheep and goat rearing practices in the forest area is critical for sustainability of their livelihood. According to the

[16] Kumar, S. and Pattanaik, F. 2018. Growth and Structural Changes in the Economy of Himachal Pradesh. J. Econ. Social Devel., 14(1): 99-113.
[17] Economic Survey of Himachal Pradesh-2018-19

19th Livestock Census 2012, the total population of livestock in Himachal Pradesh is 48.44 lakh. Out of which 21.49 lakhs are cattle, 7.16 lakh are buffaloes, 8.05 lakhs are sheep and 11.2 lakh are goats[18].

Growth in animal husbandry sector is up to 18% as compared to 4% in agriculture where the small holding is the major constraint. In HP up to 30-35% income of the farmer is from livestock sector. Introduction of productive livestock breeds has enhanced milk productivity by up to 50% in F1 progeny. In 2017-18, major livestock products in the state included 13.92 lakh tonne of milk, 1,484 tonnes of wool and 4,492 tonnes of meat[19].

### 1.1.11. Climate Change Scenario of Himachal Pradesh

Evidences have been recorded which indicate various signs of events and impacts of climate change (http://hpenvis.nic.in/Database/Climate_Change_Scenario_4310.aspx). Some of these include:

- Rise in temperature in the NW Himalayan region by about $1.6^0$C in the last century (Bhutiyani et.al. 2007).
- Warming rate of Shimla was higher than Leh & Sringar during the period from 1991-2002 as compared to the earlier decades and the gross rise in the mean air temperature during 1980-2002 periods in north western Himalayas as a whole was about $2.2^0$C (Bhutiyani et.al. 2007).
- Climate change and precipitation variation in the NW Himalaya based on precipitation data from 1866-2006, no change in winter precipitation was observed but significant decreasing trend in the monsoon precipitation was captured (Bhutiyani et.al. 2009).
- About 17% decrease in rainfall in Shimla was observed from 1996-2000 onwards till 2007 (Verma et. al. 2009).
- In Shimla and Solan the total snowfall received during 1973-75 period was 190.53 cm which in 1981-85 increased to 827.38 cm, declined to 101.9 cm in 1986-1990 further reduced to 78 cm in 2006-07, and it was only 15 cm in the year 2009 (Verma et.al.,2009).
- The decreasing trend in seasonal snowfall at Shimla is very conspicuous since 1990 and it was lowest in 2009 (Verma et.al. 2009).
- Baspa, a tributary of the Sutlej river has reported that due to warmer winters melting and retreat of snow cover was observed even in the months of Dec. and Jan. at altitude of 5400 mts above sea level and average stream run-off of Baspa river in the month of Dec. from 1966-1992 had gone up by almost 75%. Steady rise in stream run-off of Baspa from 1980 onwards matches with average global temperature rise during the same period (Kulkarni et.al., 2004).
- The population of light demanding species like *Dalbergiasisoo* and *Acacia nilotica* in sub-tropical areas will decline on account of non-availability of adequate light during winter and prevalence of cold waves at the time of new leaves emergence (Verma,2006, 2010).
- The proportion of climax species-Quercus will decrease and that of conifers will increase (Verma, 2006, 2010).

Based on above and global and Indian projections on climate change, key phenomena or trends likely to impact Himachal Pradesh are summarized in Table1.8.

[18] http://hpagrisnet.gov.in/Agrisnet/AnimalHusbandry/pdf%20files/Annual201718.pdf
[19] Economic Survey of Himachal Pradesh-2018-19

| Table 1.8: Indicative Climate Impacts on Water Resources and Agriculture[20] | | | | | |
|---|---|---|---|---|---|
| **Phenomenon and trend direction** | **Likelihood** | **Broad impacts on Sectors** | | | **Adaptation Strategies** |
| | | **Water resources** | **Agriculture/ Irrigation** | **Other** | |
| Increased frequency of heavy precipitation | Very likely | Increased runoff and higher levels of sediment loading. Reduced groundwater recharge | Damage to crops and increased soil erosion | Increased sedimentation will affect hydropower and potable water. Shutdown of hydropower may become more frequent. | Soil and water conservation (SWC). Storage to reduce sediment levels. Groundwater management |
| Increase in extreme rainfall intensity | Very likely | Increased flood flows. | Damage to crops and severe economic loss for farmers. | Disruption and damage to settlements, roads, infrastructure, and risks to human life. | SWC. Insurance. Flood management and protection. Changes to design criteria for dam and other water structures. Sustainable land use planning. |
| Increased variability in rainfall patterns | Very likely | Erratic river flow patterns. | Major impact on non-irrigated crops. | Reduced hydro power production. | SWC. Water harvesting, irrigation, and improved agriculture technologies. Improved seed varieties. |
| Increased likelihood of water shortages/ drought | Very likely | Reduced dry season flows. Drying up of some minor tributaries and springs. | Major impact on rainfed cropping. Some impact on irrigated cropping. | Reduction in water availability for some hydro power, irrigation, and water schemes. Loss of some perennial sources of potable water. | SWC. Water harvesting, irrigation, improved agriculture technologies, and new seed varieties. Move from annual to perennial crops including agro-forestry. Improve irrigation and water supply efficiencies. |
| Reduced levels of precipitation as snow | Likely | Increased winter season runoff. Reduced dry season flows. Drying up of some minor tributaries and springs. Reduced dry | Irrigation and potable water schemes in snow-fed rivers and streams would have reduced summer | Loss of some perennial sources of irrigation and potable water. Higher winter rainfall will increase erosion. | SWC. Adjustments in cropping schedules. |

[20] https://www.adb.org/sites/default/files/publication/27999/cca-himachal-pradesh.pdf

| | | | | | |
|---|---|---|---|---|---|
| | | season flows to neighbouring states. | flows. | | |
| Loss of glacier volumes | Likely | Initially increased dry season flows. Long term reduced dry season flows. | Uncertainty in supply of irrigation, water and hydropower | Loss of some perennial sources of potable water. Long term reduced hydroelectric power, irrigation and water supply | Improvement in irrigation and water supply efficiency. Optimisation of hydropower cascade dams. Storage at selected hydro sites. Change of water sources for potable water. |
| Earlier snow melt | Very likely | Increased spring flows and reduced summer flows. | Irrigation schemes in snow-fed rivers would have reduced summer flows. | Loss of some perennial sources of potable water and irrigation. | |
| Increased temperature | Very likely | Increased river and lake temperatures. | Changes in suitability of crops at altitudes e.g. apples. | Changes in aquatic ecology | Application of land suitability analysis under new climatic conditions. Estimation of temperature changes and impact in rivers and lakes. |

While, above section indicates the possible impacts of climate change and state's critical economic sectors, the National Economic Survey (2017-18) specifically highlights impact on agriculture sector[21], which also holds largely true for the state. Key findings and ameliorative measurements s summarized below:

- The impact of temperature and rainfall is highly non linear and felt almost only when temperature increases and rainfall shortfalls are extreme. The above shocks have highly divergent effects between irrigated and un-irrigated areas.
- Extreme temperature shocks result in 4% decline in agriculture yield during Kharif and 4.7% decline in Rabi in irrigated areas while 7% decline in Kharif and 7.6% in Rabi in un-irrigated areas. The impact of temperature shocks has shown an increase of 3-fold between the years 2004-14.
- Similarly, extreme rainfall shocks result in 12.8% decline in yield during Kharif and 6.7% decline in Rabi season in irrigated areas while 14.7% decline in Kharif and 8.6% in Rabi in un-irrigated areas.
- Number of dry days during monsoon exert significant effect on productivity as each dry day during monsoon reduces yield by 0.2% in irrigated areas 0.3% in un-irrigated areas.
- Pulses grown in rain-fed areas are vulnerable to weather while rice and wheat are more immune.
- Extreme temperature shocks reduce farmers' income by 4.3% in Kharif and by 4.1% in Rabi whereas rainfall reduces farmers' income 13.7% in Kharif and 5.5% in Rabi.

[21]http://mofapp.nic.in:8080/economicsurvey/pdf/082-101_Chapter_06_ENGLISH_Vol_01_2017-18.pdf

- On an average the reduction in annual agriculture incomes due to climate change ranges between 15-18% in irrigated areas while 20-25% in un-irrigated areas.

Based on the above key concerns, following were the broad recommendations to deal with the problem.

- Extension of irrigation via efficient drip & sprinkler technology and water management (more crop per drop).
- Replacement of un-targeted subsidies in power and fertilizers by direct income support.
- Improve agriculture science and technology with renewed ardour.

As discussed in earlier section that the Himachal Pradesh has 20.5% net irrigated are, compared to national average of 46%, the first recommendation of national economic survey needs to be implemented on priority basis, with enhanced investment provisions. And, for that to achieve, focus should go on enhancing water yield, their harvesting and distribution to the end-user i.e. farmers. Also, these options need to be applied at different scales: on fields and farms or arable/ agriculture land, in irrigation schemes and in non-arable hilly forest land where the water sources are mainly located.

## 1.2. Lesson Learnings from HPMHWDP

The HPMHWDP was implemented between 2005-2017 in 710 Gram Panchayats in 10 districts of the State. While implementing the project, following were the important lesson learnings:

### 1.2.1. Institutional strengthening

- Inclusion of Female Watershed Participatory Development Facilitators (WPDFs) in the beginning of the project plays a pivotal role in community participation.
- GP incentive scheme induced element of healthy competition between Project GPs.

### 1.2.2. Watershed Development & Management

- Follow bio-carbon project model for plantations.
- Lantana is the major invasive species and its removal which would generate potential plantation areas

### 1.2.3. Water harvesting

- Water is a weaving thread for promoting Climate Smart Agriculture practices.

### 1.2.4. Agriculture and allied sectors

- The Project has learnt good practices of how to integrate Climate resilient agricultural practices especially in Rain-fed Agriculture which can be replicated successfully.
- Micro irrigation system should invariably be included in package of delivery system developed for water harvesting structures.
- Include mechanical methods for checking soil erosion in arable land development.
- Strengthen Agro-forestry in promotion of integrated farming
- Vermicomposting has played a role model for promoting organic farming.
- Develop value addition mechanisms for High Value Vegetable crops.

### 1.2.5. Project Coordination

- Day to day variations in SDR: DOLLAR: INR currencies restrained and prevented Project to meet out committed liabilities at the culmination of the project.

## 1.3. Implications for Project Strategy

### 1.3.1. Natural Linkages

The natural resource profile of Himachal Pradesh strongly suggested that the rural economy of the state is centered around agriculture. The agriculture system, in predominantly forested and hilly landscapes like in Himachal Pradesh, are constraints with natural factors like altitude, slope and aspects on one side, and varying rainfall, sunshine conditions, drainage etc on the other, restrict the cultivation potential. Thus, agriculture in such areas are naturally evolved as a rainfed system. Importantly, however, there are important linkages and interdependence among the agriculture, livestock and forest systems. In spatial terms, the forest and the agriculture lands are often found juxtaposed to each other within a larger watershed area. Forests, generally found on upper reaches, supply many of their ecosystem goods and services to the agriculture system. For example, forests on slopes help in managing the SWC; maintaining the hydrological flows – both surface run-off and sub-surface base-flows; nurturing the pollinators; and maintaining the soil of farm-lands by supplying nutrient rich mulching materials. A watershed with degraded forest is not good for agriculture system in hilly regions. Clearly, the sustenance of watershed services, mainly from the forested areas, is critical for maintenance of crop-production system, especially the rain-fed system.

Furthermore, unlike in plain, where the edapho-climatic conditions are near-constant for quite larger area, the watershed conditions in hilly regions varies quickly both horizontally as well as vertically, which restricts the scope of large-scale mechanization and expansion. This also means that most of the crops are cultivated in smaller areas and thus effectively function as ‘niche’ products rather than bulk product. Such ‘niche’ situations have competitive advantages over plains in terms of producing commodities that are either produced in hills or at a time when not available in other parts of the country[22]. In such situation, the answer may lie in the cluster approach of farming system development coupled with improvement and management of essential watershed services.

### 1.3.2. Project for Sustainable Solution

The central premise of the proposed new operation revolves around the role of HP as the water source for the downstream grain producing areas, noting that five major rivers originate in HP. HP has a unique obligation to maintain downstream water availability (both aggregate volume as well as regularity of flow) while simultaneously realizing its rights to utilize its natural resources for the state’s own development. Without inter-State payment for such services, HP needs to maximize the economic benefit from resource utilization while maintaining downstream flow to remaining States.

[22]Doubling farmers income: A model for hilly and Mountainous region by Dr. A K Sarial Vice chancellor CSK Himachal Krishi Vishvavidyalaya Palampur.

Crucially, downstream demand from urban, industrial and agricultural uses will continue to increase. Moreover, ongoing efforts to improve downstream water productivity will only serve to increase the opportunity cost of water utilization in HP itself. Priority interventions of GoHP should therefore focus on two distinct areas: first, efforts to improve management of watersheds to increase retention/ aquifer recharge in upland areas and reduce run-off; second, to ratchet-up HP's agricultural growth through continued diversification and commercialization while reducing water use and/ or increasing water productivity. Indeed, GoHP is already leading this agenda on several fronts and has already achieved notable successes.

On the agricultural commercialization side, it is already well established as a producer of high value horticulture and off-season vegetables exported elsewhere in India. Similarly, HP has pioneered the watershed management model, in particular Gram Panchayat- (GP-) level micro-watershed planning and the protection of upland watersheds. At the same time, this remains an unfinished agenda. Successful climate resilience requires a systems approach that facilitates rapid deployment of adaptation responses. Further innovations are required in upstream watershed management – both in terms of planning and interventions – to secure 'source sustainability'. The continued diversification and commercialization of smallholder farmers and agribusinesses requires a reorientation to further leverage private investment into this private activity, with GoHP providing a supporting function. As with resilience, maintaining HP's competitiveness in agriculture and agribusiness cannot be achieved with a one-time intervention but also requires a 'systems' solution.

# 2. The Project

In overall terms, the emphasisof the project will be on integration between the sustainability of forested catchment - the main source of water, and farm-based livelihood opportunities for small and marginal farmers. It will address issues related with efficient use of irrigation, diversification of cropping system, productivity enhancement and business and marketing of agri-products. In a sense, the project will help improving the overall 'agriculture ecosystem' in the region with focus on key backward and forward linkages. Ultimately, the project will enhance the adaptive capacities of farmers by improving climate-resilient rain-fed agriculture system and thus secured livelihood of people of HP. In next five years, the project intends to reach more than one lakh familiesin rural Himachal Pradesh.

## 2.1. Theory of Change for the Project

The theory of change is presented in the Fig. 2.1. The same is presented in Annexure 2.1.

## 2.2. Project Goal and Objectives

The Project Development Objective is 'to improve upstream watershed management and increase agricultural water productivity in selected Gram Panchayats in the State of Himachal Pradesh'. The project would achieve PDO by:

a. Enhancing the conditions in forested catchment so that to improve sustainability in land and water resources
b. Efficient use of resources, mainly the water, for improving the resilience in agriculture and allied sector outputs, both in productivity and economic terms through diversification, value addition and effective agri-business support
c. Capacitate the farmers and other stakeholders through institutional support to achieve (a) and (b).

## 2.3. Project Outcomes and Key Indicators

The various interventions are designed in IDP components and sub-components to achieve the PDO. The key Indicators are enumerated below:

- New farm area brought under higher efficiency irrigation through project support in targeted GPs (Hectares)
- Share of participating farmers adopting climate smart agriculture practices (Percentage, gender disaggregated)
- Land area under sustainable landscape management practices (CRI, Hectares (Ha))
- Number of reforms recommended by the institutional assessments that are implemented (Number)
- Share of participating farmers who give a rating of "Satisfied" or above on process and realized benefits of project interventions (Percentage, gender disaggregated)(Citizen Engagement Indicator)

Problems: Limited capacity for integrated eco-system management leading to forest degradation, soil erosion, low aquifer recharge; low agricultural productivity

| Activities | Outputs | Lower outcomes | Medium outcomes | Higher outcomes |
|---|---|---|---|---|
| TA to foster stakeholder participation | Stakeholders consultations held to ensure buy-in (A1) | Water, soil, forests, pastures resources managed according to GP-RMPs | PDO 1: Upstream watershed management improved (A6) | Improved watershed management and improved ag. water productivity lead to more sustainable use of natural resources in HP and improved farm incomes |
| TA and investments to develop and implement GP Resource Management Plans (GP-RMP) | GP-RMPs developed and implemented, providing specifications for soil, forest, pasture mgmt (A2) | | | |
| TAs and investments for hydrological monitoring network & Catchment Area Treatment (CAT) Plan preparation | Hydrological monitoring stations built & functioning | | | |
| | CAT Plans prepared & implemented (A3) | | | |
| TA to improve integrated watershed management | IWM institutional assessment conducted; time-bound action plan and implementation road map prepared and implemented | Institutions responsible for IWM are strengthened (A4) | | |
| TA for forest institutions | Functional review of forest institutions produced; action plan implemented | | | |
| | Training modules developed and delivered to HPFD staff | | | |
| Installation of public irrigation water harvesting, storage, and distribution systems | Public irrigation systems installed | Area under higher efficiency irrigation increased (A5) | PDO 2: Agricultural water productivity (value per drop) increased | |
| Cost-sharing for HH-level equipment purchase (necessary to use irrigation systems) | HH-level irrigation systems installed | | | |
| Extension services to support climate-smart ag. (CSA) technology adoption & crop diversification (necessary to increase value of goods produced with irrigation) | Training modules developed and delivered to farmers | CSA and high-value crops adopted by farmers accessing new irrigation with project support (A7) | | |
| Cost sharing for HH- and group-level equipment purchase (necessary to adopt CSA/high-value crops) | Agricultural inputs and technology procured and delivered to farmers/groups | | | |

Notes/ Assumptions

1. Stakeholders are willing to participate in project; 2. Holistic GP-RMPs can be drawn up in a timely manner and employed effectively; 3. CAT Plans used effectively; 4. Strengthened institutions use GP-RMPs to improve watershed management; 5. Water productivity increase will be assured by limiting investments to those stipulated in GP-RMPs; 6. Watershed management improvements are sustained; 7. Agriculture research/ extension and cost-sharing for inputs/ equipment is sufficient to assist farmers to adopt CSA and high-value crops.

## 2.4. Challenges in achieving the project objectives

The key challenges before the project include:

- **Dispersed and scattered households, even within a village or GP** - mobilizing (especially women) them, when the concept of self-managed community organizations (like Self-help Groups (SHGs)) is nascent.
- **Shift from the Village Forest Development Committee to GP** for managing the project at the village level.
- **Sensitizing the GPs and the Community-level staff** to the needs of the poor, and watershed management and livelihoods enhancement frameworks
- Placing the competent and dedicated staff in the Project, particularly at the cutting-edge level and at the sub-watershed level
- **Sensitizing the project staff to work with GPs** and to put faith in the Participatory Community planning process
- Ensuring the voice of the poorest and most vulnerable is heard during the planning, implementation cost and benefit sharing etc.
- Integrating the existing resource base with the market demand and establish sustainable backward and forward linkages

## 2.5. Guiding Principles of the project

The project, the project staff, the facilitating teams and the community will adhere to the following non-negotiable of the project:

- Empowering communities through capacity building and transfer of control of resources to them
- Transparency in decision-making and resource allocation
- Cost-sharing to ensure demand driven processes, instil a feeling of ownership, and sustainable operations and maintenance of community assets
- Community driven Micro-watershed and livelihoods planning and implementation

**Participatory Planning of GPRMP**

- In IDP, Gram Panchayat (GP) would be the working unit for the purpose of planning and implementation.
- Gram Panchayat Resource Management Plan (GPRMP) would be prepared at the ward level initially (each GP consists of 5-8 wards) along with the community by employing participatory planning techniques and PRA (Participatory Rural Appraisal) tools.
- The wealth ranking of a given ward in that GP will be also done during this process of preparation of GPRMP.
- Thereafter, compilation of these so called sub plans incorporating the problems, solutions and the prioritization generated at the ward level would be finally compiled at the GP level. The complied sub plans of different wards would form the final GPRMP document.
- This GPRMP would be approved by the Gram Sabha which may reset the priorities and the list of vulnerables.
- GPRMP will then be scrutinised by the concerned DPO and then recommend to PMU for final approval
- This final GPRMP would be based on realistic solutions, synchronizing with the project activities and investments. All the activities of Component 1 & 2 would also be compiled on annual basis in the GPRMP.
- This GPRMP would thus provide the year wise financial layouts for a given GP. Compilation of the financial layouts provided in the GPRMP would be the basis of generating the Annual Plan of Operation (APO) by the DPO.

Since, the wealth ranking would be an integral part of the GPRMP, activities for the vulnerable would also be reflected in the year wise plans in the GPRMP.

## 2.6. Project Area

There are total 3226 GPs in HP including 151 GPs of Tribal areas of District Kinnaur, Lahaul & Spiti and Pangi and Bharmaur Subdivisions of Chamba District of the State. IDP proposed 428 GPs out of the remaining 3075 GPs in ten districts of the State based upon the selection criterion put forth before the Department of Economic Affairs (DEA).

## 2.7. Criterion for Selection of GPs

721 GPs have already been treated in the HP Mid Himalayan Watershed Development Project (HPMHWDP) spread across the 10 Districts of the State from the year 2005 to 2017. After exclusion of 721 GPs in HPMHWDP of the State, 2354 GPs remained to be treated. Based on this the new Project viz. IDP was proposed to DEA. Initially Project Concept Note (PCN) and a Project Preliminary Report (PPR), was sent to the DEA as prescribed by it on 17/01/2017. The project was to cover around 900 Gram Panchayats in the Shiwalik and mid-hill agro-climatic zones (600mto 2000m), including GPs recently de-notified from wildlife sanctuary areas that have not had access to development programs over several years. The total layout of the Project was proposed to be US$ 240 Million.

A lot of discussions and communications took place between the State Govt. and the DEA before the Project was finally placed in the Screening Committee of the DEA for approval. An in-principal approval to the Project was granted by the DEA in the 72nd Screening Committee meeting held on 2/06/2017 at New Delhi. This was informed by the DEA to the State vide letter No No.4/4/2016-FB.VII dated 15thJune 2017. The total Project cost was curtailed to US$ 100 Million. The in-principal approval accorded to IDP by the DEA was subject to the following conditions that:

a. GoHP to provide tangible basis for GP selection.
b. Plan for convergence.
c. Report on assessment/ evaluation report and learning of HPMHWDP.

The State Govt. responded and provided tangible criterion for selection of GPs of IDP as follows:

a. Inclusion of about 100 GPs de-notified from PAN/ WL areas.
b. Extent to which land is degraded (Ecological degradation of the Sources). GPs with more degradation will be preferred.
c. Acuteness of water scarcity
d. Extent of Poverty (BPL%, SC/ST%, marginal farmers, population density, women literacy% etc.)
e. Declared backward GPs
f. Climate Change Vulnerability Index
g. Custer of contiguous GPs for comprehensive treatment (Compactness)
h. Willingness of community to share responsibilities (existing Community Based Organizations)
i. Farming systems.

Based on the above reply of the State Govt., the DEA's posed IDP to World Bank vide

DO No. 4/4/2016 dated 26/07/2017. The WB accepted the proposal from DEA on 4/08/2017.

Thereafter, the following decisions on the selection of Project area were taken by the Govt. of HP:

- That average expenditure of Rs. 125 Lakhs proposed in a selected GP for visible results. The total No. of GPs was reduced from 900 to 390 keeping in view the approved Project cost. However, since cluster approach shall be followed the number of GPs may be enhanced marginally.
- IDP shall avoid overlapping with other EAPs.

The Project then had 2075 GPs for the application of criterion of GP selection.

**2.8. Application of selection criterion as follows:**

**a. Criterion – 1:** Inclusion of about 100 GPs de-notified from Protected Area Network (PAN)/ Wildlife (WL) areas.

A total of 98 GPs identified in 10 Districts & 71 Blocks of the State. IDP proposes to include 48 GPs out of a total of 98 GPs. However, as the GPs are scattered, sparsely located and overlap with most of the declared Backward GPs all the GPs could not be included in a compact area.

**b. Criterion – 2:** Declared backward GPs

550 GPs have been declared as backward GPs in 78 Blocks by the GoHP. A District/ Block wise matrix is developed on the basis of this criterion and criterion-1. IDP proposed to include 96 GPs out of a total of 428 GPs after exclusion of Backward GPs under HP MHWDP.

**c. Criterion – 3:** Custer of contiguous GPs for comprehensive treatment (Compactness)

Based on criterion 1 & 2 the surrounding GPs (general GPs) have been included in the cluster for a given Blocks/ Districts.

**d. Criterion – 4:** Extent of Poverty (BPL%, SC/ST%, marginal farmers, population density, women literacy% etc.).

This criterion has been linked to the notified list of Backward Blocks/ GPs by GoHP.

**e. Criterion – 5:** Willingness of community to share responsibilities.

Many representations from the GPs have been received by the Project in this regard. Owing to the limited funds available with Project all the representations could not be included in totality.

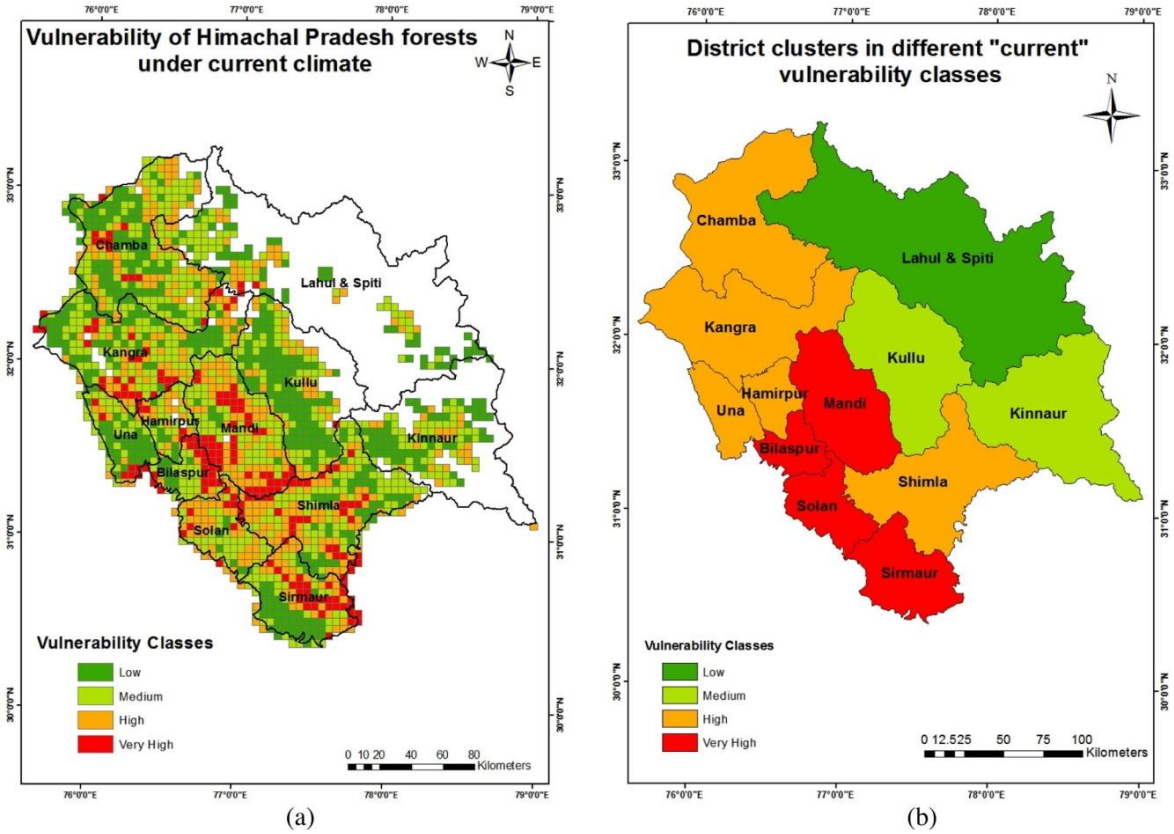
**f. Criterion – 6:** Acuteness of water scarcity

This criterion has a limited applicability in selection as up to 80% arable land in HP is Rain-fed. The Gross irrigated area of HP is 20% only against the National average of 46%. Therefore, there is a general scarcity of water throughout the State[23]

[23]Sarial, A.K. 2016. Doubling farmers' income: A model for hilly and mountainous region Himachal Journal of Agricultural Research 42(2):101-117.

**g. Criterion – 7:** Climate Change Vulnerability Index

This criterion has a limited applicability in selection as all Districts of the State fall in very high to high category of vulnerability except the 2 Tribal Districts which do not form the part of IDP.




**h. Criterion – 8:** Extent to which land is degraded (Ecological degradation of the Sources).

GPs with more degradation will be preferred. However, this criterion has a limited applicability in selection as detailed survey of the GP has to be carried out for the required information.

**i. Criterion – 9:** Farming systems.

This criterion has a limited applicability in selection as more than 85% of farmers are categorized as small and marginal in the State[24].

[24] Sarial. 2016. Ibid.

Based on above, a total 428 GPs from 32 blocks were selected for project interventions, presented in table 2.1 below.

**Table 2.1: Gram Panchayats under Integrated Development Project (IDP)**

| S. No. | D.P.O. | Backward | De-notified PAs | Backward &De-notified PAs (Common) | General | Total GPs |
|---|---|---|---|---|---|---|
| 1 | Sirmour | 11 | 3 | 0 | 32 | **46** |
| 2 | Solan | 4 | 8 | 0 | 30 | **42** |
| 3 | Shimla | 13 | 0 | 0 | 23 | **36** |
| 4 | Bilaspur | 11 | 0 | 0 | 25 | **36** |
| 5 | Kullu | 10 | 4 | 2 | 30 | **46** |
| 6 | Mandi | 28 | 0 | 5 | 16 | **49** |
| 7 | Una | 2 | 0 | 0 | 34 | **36** |
| 8 | Kangra | 0 | 11 | 7 | 46 | **64** |
| 9 | Hamirpur | 8 | 0 | 0 | 29 | **37** |
| 10 | Chamba | 9 | 7 | 1 | 19 | **36** |
| **Total** | | **96** | **33** | **15** | **284** | **428** |

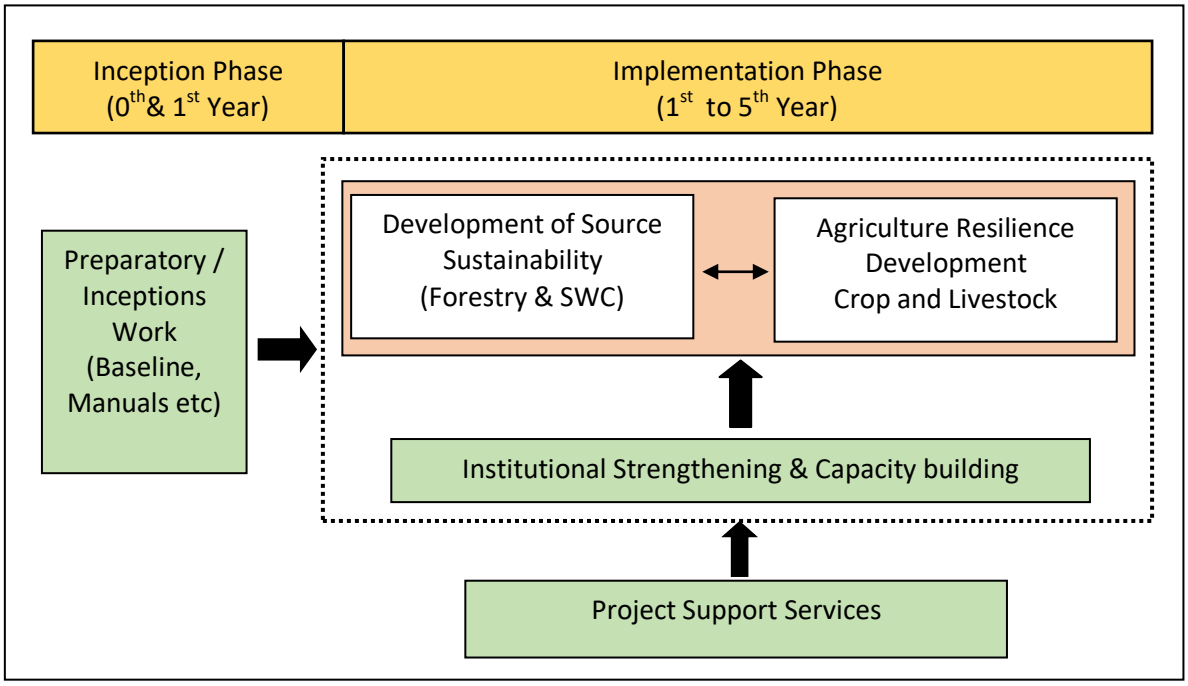
## 2.9. Project Beneficiaries

The primary project beneficiaries are the rural households, the majority of whom will be poor and vulnerable households identified through wealth ranking exercise. The special focus will be given to women and SC and ST members. In addition, the forest dwellers and livestock keepers will also be targeted. While, the beneficiaries for different components and sub-components will be identified during the micro-planning process at GP level, through a participatory, community-driven process, the criteria for the same has been discussed in detail under each component and is presented in Chapter 3.

## 2.10. Phasing of the Project Activities

The pre-project implementation phase ($0^{th}$ year) is utilized for the project preparation and implementation of activities proposed in the initial years of the project. These activities have been covered for retro -finance under the project. The $1^{st}$ year covers the planning and studies component with preparation of key forestry activities. The component 1 of the project is a precursor to component 2 in case of activities related to development and efficient utilization of water resource. The following diagram presents the broad phasing of the project (see figure below).

The phasing of the project and its activities is discussed in detail in Chapter 5.




## 2.11. Project Cost and Financing

The project cost has been financed in the proportion of 20:80 between GoHP and World Bank. The following table presents the component wise cost and the contribution of GoHP and World Bank.

| Component | GoHP | World Bank | Total | Percentage |
|---|---|---|---|---|
| 1 | 7, 706.03 | 30, 824.13 | 38, 530.17 | 55.04 |
| 2 | 4, 393.26 | 17, 573.05 | 21, 966.32 | 31.38 |
| 3 | 5, 14.376 | 2, 057.50 | 2, 571.88 | 3.67 |
| 4 | 1, 386.33 | 5, 545.31 | 6, 931.64 | 9.90 |
| **Total** | **14, 000.01** | **56, 000.00** | **70000.00** | **100** |
| **Percentage** | **20** | **80** | **100** | |

The project financing covers 5 years of project implementation and the cost covered under retro finance. The component-wise and year-wise cost of the project is presented in the following table;

| Component (INR Lakhs) | Retro-finance | Year 1 | Year 2 | Year 3 | Year 4 | Year 5 | Total |
|---|---|---|---|---|---|---|---|
| **1** | 715.33 | 9554.86 | 12910.04 | 8823.45 | 4880.15 | 1646.34 | 38530.17 |
| **2** | 146.46 | 687.42 | 3746.28 | 6890.85 | 8164.40 | 2330.91 | 21966.32 |
| **3** | 0.00 | 404.13 | 612.77 | 648.33 | 654.38 | 252.26 | 2571.88 |
| **4** | 841.62 | 1422.10 | 1016.87 | 1261.53 | 1128.61 | 1260.91 | 6931.64 |
| **Total** | **1703.42** | **12068.51** | **18285.96** | **17624.15** | **14827.54** | **5490.43** | **70000.00** |
| **Percentage** | **2.43** | **17.24** | **26.12** | **25.18** | **21.18** | **7.84** | **100** |

# 3. Project Components

The project has 4 components;

a. Sustainable Land and Water Resource Management
b. Improved Agricultural Productivity and Value Addition
c. Institutional Capacity Building for Integrated Watershed Management
d. Project Management

## 3.1. Component 1: Sustainable Land and Water Resource Management

### 3.1.1. Rationale

Himachal Pradesh, being a hilly state, while has poor access to social and economic services also has limited scope of physical expansion of land-based economic activities. The large coverage of forests in the state further restricts other economic options. However, forested hills are considered critical in providing different watershed services and conservation of biodiversity and sequestration of carbon. Environmental services of a watershed or catchment area produce various benefits downstream, usually in the form of water quality and quantity. These may increase dry season water flows, reduce siltation, improve water quality, and so on. These watershed services are directly influenced by management of upstream land-use practices[25].

Management of watersheds in the State assumes greater significance for the maintenance of the water flow in rivers like Sutlej, Beas, Chenab, Ravi and Yamuna which not only cater the needs of people of the State but also of other neighbouring states like Punjab and Haryana. The management of watersheds also helps in delivering various ecosystem goods and services in agriculture and associated rural life and livelihood of local communities, particularly in mid and highlands parts of the State.

Clearly, in the hilly parts of the state, main purpose of watershed management is to reduce surface flows (run-offs) and soil erosion in short-term perspective, and, improve sub-surface recharge to increase and prolong post-monsoon base-flows in medium to longer time horizon. Improving the forest and other vegetation cover, and other soil and water conservation measures in the hills stabilize the watersheds and thus bring greater sustainability in delivering above described and many other benefits from the watersheds.
This project component, therefore, aims to enhance quality of watershed and its management in the targeted gram panchayats, thereby improving ecosystem services, mainly the sustained supply and management of water to meet the livelihoods needs of local communities.

### 3.1.2. Objective of the Component

The objective of the component is to improve the ecological and hydrological processes in forested watershed areas of targeted gram panchayats so as to bring better conservation

[25] Agarwal et al. 2007. Fair deals for watershed services in India. Natural Resource Issues No. 10. IIED, London.

and management of natural resources. The direct benefit of this project component is to improve supply of much needed resources like water to the population living in hills, where water is always a constraint. However, with the project targeting 428 gram-panchayats, spread over different agro-ecological zones, including the variations in altitude, this component of the project will also be expected to have far reaching benefits of landscape level management e.g. improvement in river basin condition or creating forested corridors for many wildlife species etc.

### 3.1.3. Approach

The above objective of the component will be achieved through two sub-components and associated activities in the watershed areas of project Panchayats:

**Subcomponent 1A: Improved planning for participatory and sustainable land and water management**

a) Strengthen landscape planning through technical assistance and community participation to prepare Gram Panchayat Resource Management Plans (GPRMPs).

b) Strengthen watershed monitoring and modelling through technical assistance to design and implement a network of hydrological monitoring stations and monitor implementation of SLWM investments under sub component 1B.

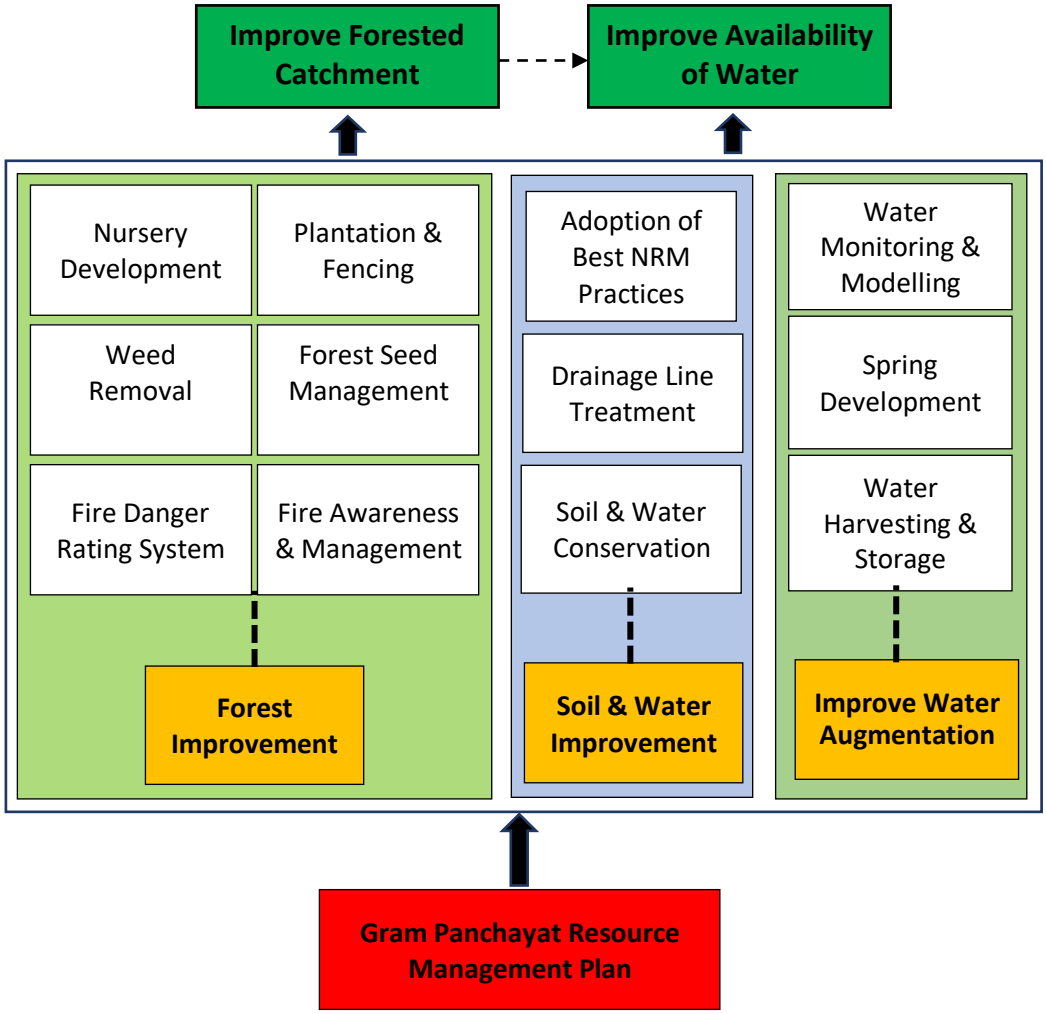
**Subcomponent 1B: Implementation of participatory and SLWM investments as identified by the GPRMPs**

a. Improvement in forest /vegetation condition through technical assistance and investments in improved forest management.
b. Improvement in soil & water conservation through technical assistance and investments in biophysical and constructed conservation measures.
c. Improvement in water availability at the community level.
d. Forest fire prevention and management through technical assistance to develop a fire early warning system and investments in invasive weed removal and community fire management

It is important to recognize that the sub-objectives of this component complement each other, specifically to improve the forested catchment to increase usable water output.
Specifically, following are the operational approaches:

- Preparation of resource management plan for each Gram Panchayat through a consultative and participatory process which will describe the details of activities
- Improvement of selected watersheds with forestry and SWC methods
- Manage the fires and weeds (like Lantana) in forested watersheds
- Stabilize drainage and its adjoining areas through forestry and civil works
- Create and manage traditional community-level water harvesting and storage system, including spring based Bauri system
- Scientific monitoring of water and its sub-systems using modelling tools.

The overall approach for this component is schematically presented in Fig. 3.1




### 3.1.4. Project Development Objective Indicators of Component 1:

| Indicator Name | Baseline | Intermediate Targets | | | | End Target |
|---|---|---|---|---|---|---|
| | | 1 | 2 | 3 | 4 | |
| Land area under sustainable landscape management practices (CRI, Hectare(Ha)) | 0.00 | 5,000.00 | 10,000.00 | 10,000.00 | 11,000.00 | 12,000.00 |
| Area managed for improved soil (Hectare(Ha)) | 0.00 | 0.00 | 200.00 | 500.00 | 1,000.00 | 1,200.00 |
| Number of reforms recommended by the institutional assessments that are implemented (Number) | 0.00 | 0.00 | 0.00 | 1.00 | 3.00 | 5.00 |

### 3.1.5. Intermediate Results Indicators of Component 1:

| Indicator Name | Baseline | Intermediate Targets | | | | End Target |
|---|---|---|---|---|---|---|
| | | 1 | 2 | 3 | 4 | |
| Survival rate of seedlings planted with project support (Percentage) | 0.00 | 60.00 | 65.00 | 70.00 | 80.00 | 80.00 |
| Percentage of women signatories engaged in approving GP-RMPs (Percentage) | 0.00 | 20.00 | 30.00 | 30.00 | 30.00 | 30.00 |

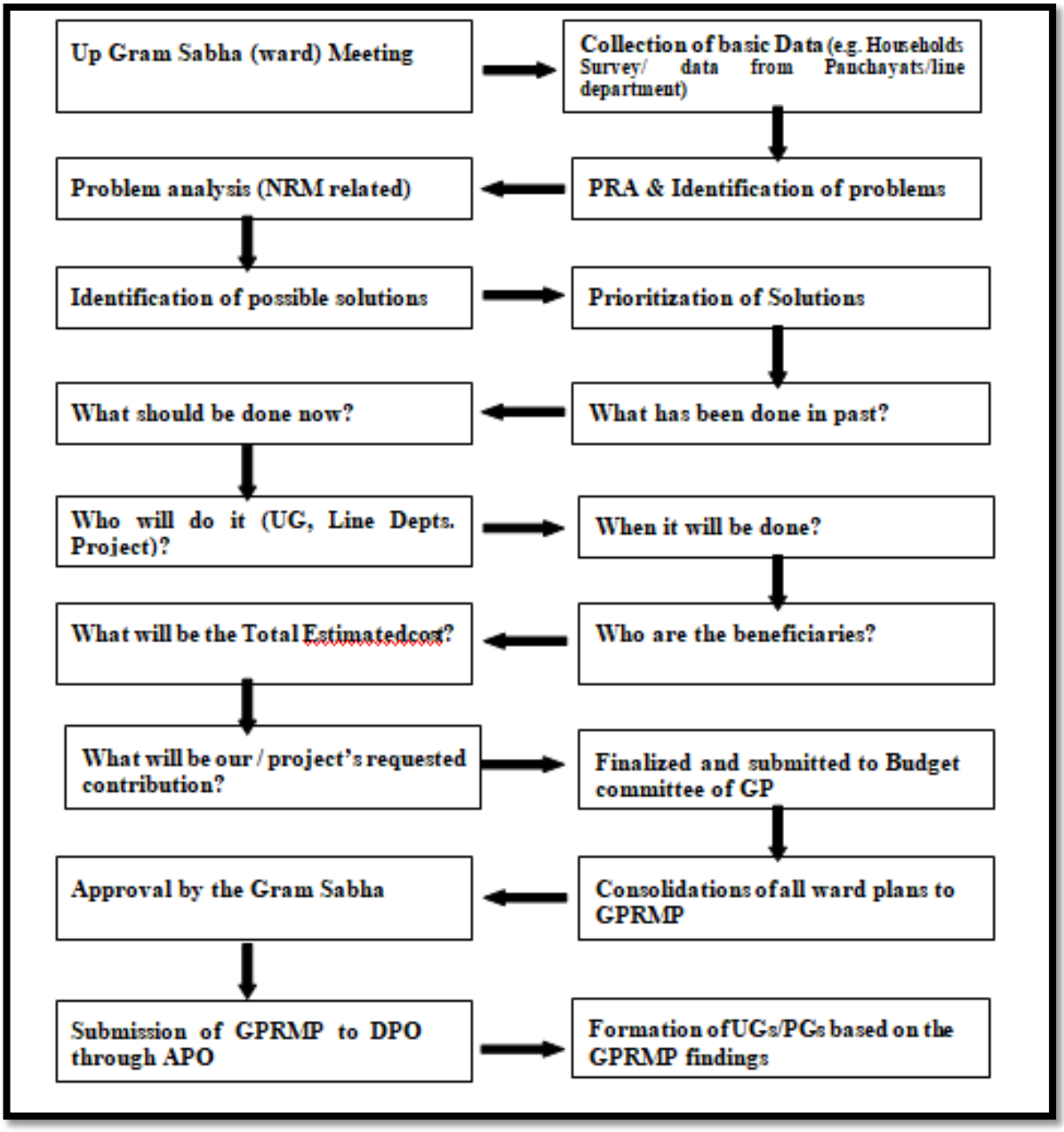
| Activity Chart of Component -1 | | |
|---|---|---|
| **S. No.** | **Particulars** | **Activity** |
| **1.1** | **Gram Panchayat Resource Management Plans** | Site Specific Resource Management Plans for a Gram Panchayat |
| **1.2** | **Forestry and Land Management** | |
| | Nursery Development | Nursery Development |
| | Nursery seedling production | Seedlings raising for plantations |
| | Forestry Planting and Fencing | Plantations including fencing and planting activities |
| | Soil and water conservation | Contour trenching, grass sowing |
| | **Drainage line treatment** | Vegetative check barriers |
| | | Dry stone check barriers |
| | | Crate wire check barriers |
| | | Cement concrete check barriers |
| | **Weeding and hoeing** | Part of plantation activity |
| | **Spring development** | Renovations of Bauries |
| | **Management of exotic sp.** | Lantana eradication |
| | **Seed Management** | Seed Bank, Seed testing lab. etc. |
| **1.3** | **Primary Water Harvesting and Storage** | Ponds (Manual Excavation) |
| | | Ponds (Mechanical Excavation) |
| | | Check Dam (Earthen/CC/ Masonary) |
| | | Sub Surface Dykes/ Sump Wells |
| **1.4** | **Water monitoring and modeling** | Study/ consultancy |
| **1.5** | **Adoption of best practices in NRM** | Innovations, etc. |
| **1.6** | **Professional support for forestry and land management** | Salary and allowances of forestry staff |
| **1.8** | **Field Technical Staff** | Salary |
| **1.7** | **Fire danger rating system consultancy** | Consultancy |
| **1.8** | **Fire management and awareness** | Awareness camps, advertisements, boards hoardings, etc. |

### 3.1.6. Subcomponent 1A: Improved planning for participatory and sustainable land and water management

#### 3.1.6.1 Gram Panchayat Resource Management Plan (GPRMP)

As an overarching approach, GPRMP will lay out a detailed plan for natural resource management. GPRMP will be prepared in consultation of with the local communities of the Gram Panchayat. Further, a technical consultant will be hired to design the detailed GPRMP methodology and structure including mapping requirements.

**GPRMP Process**




The GPRMP preparation process will include women's groups, women as signatories and representatives from amongst women farmers. The detailed process for preparing GPRMPs has been given in the Community Operation Manual (COM).

Following will be the broad responsibilities of the project team for the preparation of the GPRMP;

| | |
|---|---|
| Assistant Project Officer and Front line Staff i/c technical staff from DPO office | Collection of secondary data of Gram Panchayat |
| | Initiation of ward meetings and preparation of ward plan |
| | Conducting Participatory Rural Appraisal (PRA) & Identification of Problems |
| | Compilation of ward Plan |
| | Compilation of GPRMP |
| | Approval of GPRMP in the Gram Sabha |
| DPO & PMU | Approval by the DPO and PMU |

The key responsibilities of the project staff has also been described under Chapter -4 of the PIP.

### 3.1.6.2 Water Monitoring and Modelling

As described in earlier sections, the project by improving the watershed areas, ultimately will help to help generate water benefits in 428 Gram Panchayats of the State. It is important, therefore, to understand these water benefits in rigorous way so that to provide essential inputs to policy makers and other decision makers. To achieve this, project will undertake two major initiatives:

i. Scientific monitoring of water related benefits in project area
ii. Modeling the effectiveness of different project interventions in watershed areas

#### 3.1.6.2.1 Scientific Monitoring

Project will establish monitoring stations in selected locations of the project area based on the study/ consultancy recommendations and availability of funds. These locations will be used to monitoring round the year changes in the hydrological parameters, including water quality (sediment load etc.) and water quantity (flow).

#### 3.1.6.2.2 Hydrological Modeling

Project will develop a dynamic model by integrating the changes in land use and land cover in watershed areas and also various SWC works like drainage line treatment check dams, contour trenches etc, undertaken in the project. It will also fit-in rainfall, topographic, soil and geological data and information in the model. The main purpose of developing this model is to understand the key effects of different interventions on surface run-offs, sub-surface flow and water flow in streams and drainage in different seasons. This will also be helpful to the state while designing future watershed interventions.

Considering the fact that both, monitoring and modelling are highly technical and scientific work, the project will explore partnerships with competent State/ National level government agencies/institutions with the required technical competencies and mandate to undertake this kind of modelling. This will ensure that the monitoring stations are part of a larger network and maintained after project closure. Technical agreements would be undertaken between the agency and the project. The incremental costs on the activity shall be borne by the project.

This organization will also provide training to the project team to collect data from monitoring stations and assimilate and analyse the data to draw scientific conclusions.

The HPFD, being the responsible agency for managing forest lands may take the lead implementation role for such exercise along with the project. The support of the other relevant agencies/department with similar mandate would also be undertaken during the implementation of this project activity.

3.1.7: Subcomponent 1B: Implementation of participatory and SLWM investments as identified by the GPRMPs

### 3.1.7.1. Forest Land Development/Improvement:

It is understood that the stream flowing through a watershed area may be influenced by different physical and biological factors, like surface slope, drainage type and density, geology, vegetation growth and forest cover etc. In general, while bringing changes in most of the physical factors is difficult, forest structure change through various silvicultural techniques and protection methods is doable. Thus, while reducing the forest cover (deforestation) or increasing forest cover (afforestation) causes increased or reduced stream runoff, respectively[26], the role of species selection is also critical in supplementing the stream flow[27].

To enhance quality of forest and its management in the selected watershed areas, following interventions will be carried out:

### 3.1.7.2. Forestry operations - Plantation

The entire forest plantation work will be implemented mainly through project staff. In the present case it means that budget for various land and water management works including the plantation, SWC and water augmentation, will be routed through DPO /APO offices. In the plantation related work, however, key activities like selection of suitable sites, plantation model and species, will be finalized by project team and communities in the process of preparation of GPRMP. In a sense, project will appreciate decision making roles of community along with project teams. Actual plantation in the field will be done through suitable labour contractor identified through a tendering process (Table 1).

[26]Bruijnzeel, L.A. 1990. Hydrology of moist tropical forest and effects of conversion - A state of knowledge review report: Amsterdam, UNESCO International Hydrological Programme, A Publication of the Humic Tropics Programme, Faculty of Earth Sciences, Free University, 224 p.

[27]Johnson, M.S., and Lehmann, J., 2006, Double-funneling of trees – Stemflow and root-induced preferential flow: Ecoscience, v. 13, no. 3, p. 324–333.

| Table 3.1: Decision making process along key plantation related activities | | | |
|---|---|---|---|
| **Key Activities** | **PMU/DPO/APO** | **Community through GPRMP** | **Contractual** |
| Site Selection | * | * | |
| Plantation Model Selection | * | * | |
| Species Selection | * | * | |
| Plantation Work & Maintenance | * | | * |

In principle, forest areas having crown density below60% (open forests and scrubs, medium density) will be covered under the project. Broadly, two approaches of forest improvement will be adopted viz. artificial regeneration (block plantation) and assisted natural regeneration (ANR).

The artificial regeneration or raising forest plantation aims to check water borne soil erosion by both falling and flowing waters, *in situ* moisture conservation, improve soil fertility, biomass productivity and biodiversity conservation (Table 2). They will have different combinations of raising different species of trees, bamboo and grasses, as per site requirement.

| Table 3.2: Key characteristics of two major forest regeneration models | |
|---|---|
| **Treatment Type** | **Description** |
| Artificial regeneration (or Block Plantation) | • Gap plantings in certain density based on site specific feasibilities.<br>• Maintain vegetal cover including the ground cover by grasses for soil and water conservation. |
| Assisted natural regeneration (ANR) | • Aims to facilitate natural regeneration in the plantation areas where rootstocks are still available.<br>• Include treatments such as singling coppice shoots, removal of high stumps etc. |

Though, the ANR is not specifically targeted in the project. However, once the plantation area is protected and fenced, the existing root stocks within the fenced area will also be attended and nurtured. So, while raising a plantation is major activity under the project, ANR interventions will be one of the side activities which will bring additional benefits to forest regeneration. During second year onward at the time of maintenance, natural regeneration available in the plantation areas will be attended and nurtured. The budget available under the sub-activity – Adoption of best practices in NRM may be used for this activity (Assisted Natural regeneration).

For planning and implementation of plantation operations, the target species will be decided based on the altitude and site conditions, as well as community preferences, and described in the Natural Resource Management Plan at Gram Panchayat level. Also, prescriptions given in Working Plan of the HP Forest Department of the area will be referred while finalizing the plantation models, so that proposed activities will not be cross-purpose with existing forest management practices.
In the project, as part of this component, plantation will be raised in the catchment areas of selected watersheds and will specifically target three types of lands:

a. The forest lands,
b. Private lands, and
c. Common Lands, where consent of the local community has been achieved.

### 3.1.7.3. Plantation Models

For the purpose of improving the quality of forested watersheds, project will take-up all plantation activities in the first and second year of project implementation. Following plantation models will be adopted based on suitability of sites (canopy density of the area):

***(a) Reforestation plantations***

In forest areas forming the catchment of selected watersheds, having open canopy density i.e. 10-40% canopy cover, artificial regeneration/plantation with a proposed density of 800 plants per hectare will be carried out, with three years of maintenance.
The level of restocking will be achieved through combination of planting and Assisted Natural Regeneration (ANR). Where ever the density is not sufficient additional plants may be added.

***(b) Enrichment plantations***

These plantations will be raised in the forest/community lands forming the catchment area of the selected water sources where the upper story of the forest needs enrichment. Thus, the forest areas with 40-60% canopy cover will be planted with a proposed density of 400 plants per hectare, with three years of maintenance.

***(c) Plantation along drainage lines***

These plantations will be raised along the drainage lines leading to selected water sources. The objective of raising this plantation is to protect the area along the two sides of the bank against land subsidence or soil erosion. Native and fast-growing species like bamboo, Salix, etc. will be raised along the drainage line. Thus, artificial regeneration/ plantation with a proposed density of 1100 plants per hectare will be carried out, with three years of maintenance.

***(d) Grass Plantation***

Grasses are the best bio-defence against soil erosion. Being the lowest layer of natural vegetation cover, grasses bind the soil more effectively than any other plants. While the tree plantations take few years to establish and thus protect the soil, the grasses grow and establish quickly and thus protect the soil, immediately. Moreover, the grasses are also good source of fodder for livestock and thus contribute in meeting the community needs. So, the project will improve grass cover in plantation areas. In a sense, while the above described models of tree plantations aim to improve the canopy cover of the forests and thus help in maintaining the soil and water regime in plantation areas, the grass planting, by creating second tier of vegetation cover, actually supplement to forest plantations in conserving soil and moisture.

Thus, in the project grasses will be planted in the areas associated with all the above tree plantation models viz. reforestation, enrichment and along the drainage lines. The grasses of higher nutritive and biomass values will be specially planted along the berms of contour trenches made as part of soil and water conservation measures in planted as well as in non-planted areas. The project will prefer local grasses instead of exotic ones. These may be procured from the State Agriculture Universities (SAUs).

### *(e) Agri-silvi pasture (Distribution of seedlings)*

Due to hilly terrain and terraced fields in Himachal Pradesh, agro-forestry is not a much popular activity taken up by the farmers. But due to the need of fodder for their livestock, farmers depend on the adjoining forests, and thus putting pressure on the forest vegetation. In order to decrease the pressure on the forests, the project will provide some fast-growing fodder tree species to the farmers and encourage them to raise them on the bunds of their agricultural fields or in their private grazing lands/grasslands. Thus, unlike above described models, this activity will be planned for private land. The plantation model will cover a density of 100 trees per ha. notionally. In the project, in each gram panchayat on an average 5 ha area will be planted under this model. In total, therefore, 2140 ha will be covered under this model of plantation. The Project will only supply the seedlings of fodder trees to the farmers under this demand driven activity. Technical know-how over the agri-silvi-pasture activity would be provided by the project in the awareness meetings/camps organised by the project.
A summary of key features of different plantation models is presented in **Table 3.3**.

| # | Plantation Type | Criteria for selecting the Plantation Area | Proposed Density (No. of trees per ha) |
|---|---|---|---|
| 1 | Reforestation | < 40% canopy Cover | 800 |
| 2 | Enrichment | 40-60% Canopy Cover | 400 |
| 3 | Drainage line plantation | Along the drainage line | 1100 |
| 4 | Grass plantation | All the plantation areas and where the contour trenches are made | As per requirement |
| 5 | Silvi-Pastoral (seedling distribution) | Farmer's agriculture fields | 100 |

### 3.1.7.4. Fencing of plantation areas

Newly established plantations, especially the shoots of young plants, are particularly vulnerable to grazing/browsing by livestock and wild animals. The damage often results in deformed or dead plants causing failure of the plantation. In the context of the project, it is important to protect the young plants from the livestock grazing, particularly of sheep, goats and cattle. The protection of plantation by fencing is the standard approach. In this project, barbed wire fencing will be made to protect various plantations.
In the project four strings of barbed wire will be erected on 3-meter distant Eucalyptus poles. Accordingly, in 5 ha plantation area approximately 1200 running meter of fencing will be made **(Fig. 3.1).** In total, thus, 2876 km length of barbed wire fencing will be made under the project.

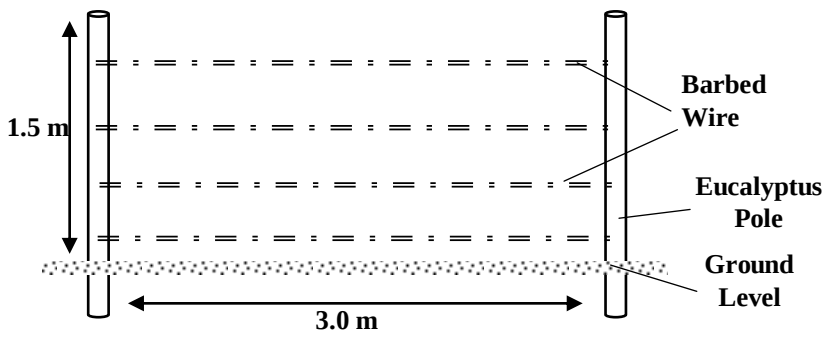



Fig.: Schematic diagram of barbed wire fencing

While preparing the GPRMP with the consultation of the local communities, they map out the degraded areas including the area where the plantations can be raised. The communities are well versed with the idea that the area which is proposed for plantation would be fenced for protection from grazing. However, the communities would be re consulted while the project undertakes technical feasibility of that area for plantation and fencing. This consultation would avoid direct imposition of restrictions by the project on the communities. This would also be in line with the Environment and Social Framework recommendations.

### 3.1.7.5. Nursery Development

Nursery is an important infrastructure which is required for raising the planting material required for the plantation works. The project will develop its own nurseries for getting good planting material. For project purpose, space in existing forest department nurseries will be utilized. For this, the project will find suitable areas for raising the saplings in the existing Forest Department nurseries. Thus, for the project purpose, two nurseries will be developed in each of the 26 APOs. Thus, project will support developing a total of 52 nurseries[28]. Considering the extent of different models of plantation i.e. of different densities (see Table 3), to be covered under project 428 Gram Panchayats, large number of seedlings and grass tussocks will be required. The selection of species for plantations will be done jointly by village communities and project team and will be part of the GPRMP.

Depending upon the different types of plantation activities planned, broadly following types of plants will be raised in the nurseries:

- Broadleaved indigenous tree species
- Different species of bamboo
- Different species of fodder trees
- Grass tussocks

In case of shortfall of the seeds of the selected tree species, the procurement of these seeds shall be undertaken from authentic vendors. Strict quality parameters and the origin of the seeds shall be kept in consideration before procurement from private vendors.

To manage the operations of each nursery, one forest guard and one care-taker (gardener) will be appointed under administrative control of concerned APO.

### 3.1.7.6. Forestry Operation - Eradication of invasive species

*Parthenium hysterophorous, Lantana camara, Ageratum conyzoides* and *Sapium sebiferum* are the naturalized alien plant species that have proliferated and are impacting biodiversity in Himachal Pradesh[29]. *Lantana camara* is one of the most widely spread exotic species in the forest areas of the state. A 2015-16 survey reported that 2.35 lakh hectare of forest area (i.e. 6.5%) is invaded by this species[30]. Eight territorial forest circles

[28]Generally, one nursery unit raises 50000 saplings. Thus, effectively 52 proposed nurseries will be equivalent of about 127 nursery units.

[29]Pathak et al. 2019. Alien plant invasion in the Indian Himalayan Region: state of knowledge and research priorities. Biodiv. Conserv. 21 Nov. 2019. (https://doi.org/10.1007/s10531-019-01829-1)

[30]https://www.thestatesman.com/cities/lantana-eating-forest-land-in-himachal-pradesh-1488574523.html

viz. Dharamshala, Nahan, Hamirpur, Chamba, Bilaspur, Mandi, Solan and Shimla have significant infestation of Lantana[31].

Lantana has many adverse effects on forest ecosystems which include (i) loss of native bio diversity, (ii) replacing native plant communities in forest ecosystems by forming dense impenetrable thickets, (iii) adversely impacting the regeneration of forests, (iv) harbouring vectors that carry infectious diseases,(v) promoting fire hazards and (vi) it is unpalatable for the cattle and suppresses the native palatable grasses, herbs and shrubs.
In the project, eradication of Lantana will be aimed to facilitate different plantation models. Thus, two aspects are important to highlight. First, lantana will be eradicated only from those areas which are considered for plantation work. Second, in the areas from where the lantana will be removed, they will be immediately replaced by plantation of indigenous broad-leaved tree species, bamboo or by grasses, as per site condition and will be described in GPNRMP. It is also important to mention here that the removal of lantana will be done during December and January, while plantation work will be done mostly in June to August, in succeeding year.

A number of methods, including physical, chemical, and biological methods, have been used to control and manage Lantana invasions in different regions. The physical methods that have been in practice for eradicating the exotic species include - chopping the main stem at the base; cutting the root stock, clipping aerial shoots 10 to 30 cm above the base; burning the clumps; and grubbing (total uprooting). In the project the eradication of exotic species mainly the Lantana will be done through a technique called cut root-stock(CRS)[32]. The method involves making a small cut below the transition zone (the reproductive part of the plant), 2-3 inch below the soil. With such method, soil will be minimally disturbed. Other than the cutting of root stock, following supplementary works will also be done to control reinvasion:

- Cleaning of Lantana (Sprouts) & seedlings one time after first cut and three times throughout the year

### 3.1.7.7. Forestry Operation- Fire Management

Every year, 50% of the 647 districts of country reported forest fires. In 2014, nearly49,000 sq km of forests area were affected by fire. It is estimated that the economic costs of forest fires in India, was around Rs. 1100 crore per year[33]. In the State of Himachal Pradesh, the forest fires are common and wide spread. In the year 2018-19, a total of 2,544 forest fire incidents were reported, affecting about 26,000 ha (Table 4). These fires impact the forest ecology in many ways, including the change in forest vegetation and soil structures, spread of fire-tolerant invasive species, loss of wildlife habitat, carbon emission etc. In addition to the above, these fires also incurred a direct economic loss of Rs. 3.25 crores. Therefore, it is necessary to make efforts to manage the forest fires in the state.

[31]Policy Document for Managing Lantana (Lantana cmara) in Himachal Pradesh. HP Forest Dept. https://hpforest.nic.in/files/Policy%20for%20managing%20lantana%20in%20hp.pdf

[32]Field Manual for Cut Root-Stock Method of Lantana camara Management. (version 2. Dt. 12.10.2015).https://indiabiodiversity.org/biodiv/content/projects/project-fc210795-5976-42f6-ad1b-7f96a02dd819/826.pdf

[33]Strengthening forest fire Management in India. Joint report by the MoEF-CC, Govt of India and World Bank. 2018.

| Table 3.4: Fire cases, extent and total economic losses in different Forest Circles (2018-19 | | |
|---|---|---|
| **Name of Forest Circles** | **Number of Fire Cases** | **Affected Area (ha)** |
| Bilaspur | 307 | 5473.4 |
| Chamba | 200 | 2432.23 |
| Dharamsala | 607 | 4552.74 |
| Hamirpur | 379 | 2459.85 |
| Kullu | 33 | 457 |
| Mandi | 396 | 2766 |
| Rampur | 139 | 1133.5 |
| Nahan | 144 | 2139.77 |
| Shimla | 185 | 2449.22 |
| WL Dharmasala | 4 | 30 |
| WL Shimla | 7 | 43 |
| GHNP | 22 | 508.22 |
| Solan | 121 | 1414 |
| **Total** | **2544** | **25858.93** |
| **Total economic losses (Rs.)** | **32548385** | |

In the context of project, in order to control the forest fire in project Gram Panchayats two sets of activities will be done:

### *(a) Fire Management and Awareness*

The project will support various activities that will help effective control and management of fires in the project Gram Panchayats. These activities will broadly target toward preventing the fire and its spread, incentivizing the fire management system at Gram Panchayat level and capacity building through awareness and education programs. Thus, following activities will be undertaken under project:

*i. Fire management activities to reduce the risk of spread of fire by:*

- ✓ removing the potential fuels from the forest floor, like removal of pine needles
- ✓ fire line management
- ✓ deployment of fire watchers at each Gram Panchayat in peak fire seasons
- ✓ ensure better coordination and networking of field team by providing tele-communication allowances to the watchers
- ✓ maintenance of forest ponds / water bodies to increase water storage which will be used in controlling the fire in extreme cases.

*ii. Community Incentives*

Gram Panchayats which will successfully tackle dry season fire incidences in and around their area will be awarded with a "no-fire monetary bonus". The mechanism and criteria to identify the Gram Panchayats, bonus amount, etc are detailed in Community Operations Manual, and the exact structure of the grants will be specified in the Grants Manual.

*iii. Mass awareness and education program*

Forest fires have the potential to cause losses of property and resources. Fire prevention and management education to different stakeholders is important for the project area. Some of the proposed activities in the project may include:

- ✓ Distribute fire safety videos, CDs, and DVDs to Panchayat other agencies and organizations.

- ✓ Media (social as well as print and electronic) campaigns
- ✓ Printed materials, including general information handouts, bulletins and brochures on fire management will be distributed in Panchayats, schools, and other community places.
- ✓ Sign boards in strategically important location
- ✓ Conduct fire management training programs for different stakeholders
- ✓ Organize street plays and rallies on fire prevention and control themes

- ✓ Spread awareness amongst the communities to refrain from traditional practices of burning the grassland/ forestland.

- ✓ Make the communities aware on process of control burnings, field clearing etc.

- ✓ To make the communities aware on the prohibitions set by the HPFD to prevent forest fires.

- ✓ To make the communities aware on the role of fire danger rating system being developed by the project.

Project team including of PMU, DPOs and APOs in close coordination with forest department and Gram panchayats will plan and organize these events.

### *(b) Development of Fire Danger Rating System (FDRS)*

While fire management and awareness activities aim to engage local communities and other stakeholders in preventing and managing the fires in the project area, it is also very important to develop early warning system to give warning well in advance of enabling conditions that could trigger fire events. Needless to say, such an early warning system needs to be developed at State level[34].
Fire Danger Rating System (FDRS) is a globally designed system[35]that helps estimate the fire dangers for a given area[36].Factors influencing fire danger may include weather, fuel, and topography. The FDRS quantifies different aspects of fire behaviour, for example, how fast fires are likely to spread, how intensely they may burn under current conditions, and how difficult they may be to control. With such knowledge, FDRS will inform concerned agencies and managers about hazardous fire weather conditions so that they can ensure an appropriate state of readiness to prevent or reduce the losses.

The MoEFCC & World Bank report[37] recommended that Forest Survey of India (FSI) continue the development of FDRS in collaboration with State Forest Departments, with the recognition that this is a long-term process. The immediate priority is to formalize this process and create a mechanism for the State Forest Department to provide input to the FDRS and field data/feedback for testing the FDRS.

[34]Strengthening forest fire management in India. MoEFCC & World Bank. 2018.
[35]FDRS have been extensively used in North America, Australia, South Africa, Indonesia.
[36]Fire danger is defined as a "general term used to express an assessment of both fixed and variable factors of the fire environment which determine the ease of ignition, rate of spread, difficulty of control and fire impact" (Merrill and Alexander 1987). Factors influencing fire danger may include weather, fuel, and topography.
[37]Ibid.

Therefore, project will also facilitate the process of development of FDRS for the state of Himachal Pradesh, with State forest department as owner of the system and FSI, Dehradun as technical and knowledge development partner.

### 3.1.7.8. Forest Seed Management

Recently, with the growing awareness on climate change, plantation of trees has increased rapidly. Suitability and quality of the seeds have a big effect on the success of the plantations raised from them. Availability of good quality seeds depends upon the availability of mother trees having better genetic constituents. Good seeds imply high viability and vigour and are genetically suited to specific site. While quantity, as well as quality, of seed production is considered important, seed survival may be greatly affected by external factors. For example, climatic factors can affect the abundance of flowering and thus indirectly of seed production. Handling of seeds, mainly the storage techniques, is one of the important factors which determine the performance of seeds. Also, it is important to understand that the seeds from different agro-ecological regions often show poor germination and growth in other areas and thus may not be suitable for plantation in other agro-ecological regions. Ultimately, the tested and certified seeds of better genetic stock is major need to expand tree plantation or afforestation area.

Keeping the above in view, the project also aims to facilitate management of forest tree seeds at State level. Following three interventions will be taken-up:

- Inventory and preservation of 'Plus Trees' (i.e. genetically best individual as reflected from various phenotypic traits) of important indigenous broad-leaved forest trees located at varying physio-climatic conditions.
- Create seed bank of different species through promoting better seed testing and storage facilities.
- Creation of state-of-art facilities for seed collection, testing and storage at state level.

### Soil and Water Management

### 3.1.7.9. Contour Trenching

Contour trenches are a simple, low-cost method of checking the velocity of runoff in the ridge area of any watershed. A contour trench is a trench dug along a contour line[38]. For effective results, the continuous contour trenches are alternatively designed as 'staggered trench'. The objective of the staggered contour trenching is to trap as much surface run-off as possible and thus checking soil erosion. This will ultimately lead to moisture retention in the soil which will consequently help in better growth of adjacent plants.

In general, contour trenches worked effectively where the slope of the ridge lies between 10-30%. However, in the areas with higher slopes, the same will be made with some minor design change. For example, in the slope 10-30% the distance between two lines of trench will be 20 meters, while in the higher slopes, the same will reduced to 15 meters.
Size of each staggered trench will be 0.5 m wide and 0.3 m deep with 10 m length. Between two staggered trenches, the gap will be around 8 meters, depending upon the site.

[38] A contour line is an imaginary line that joins together points of the same elevation.

The distance between two successive rows and between two trenches in one row will be adjusted and depends on the volume and velocity of runoff they are expected to handle, which in turn depend on:

a. The quantum of rainfall: the greater the rainfall, the lesser the distance
b. The permeability of the soil: the more permeable the soil, the greater the distance
c. The vegetative cover: the lesser the vegetative cover, the lesser the distance

Dug up soil will be stacked along the downhill side of the trench making a berm of 20-30 cm width on which seeds/ seedling of grasses will be sown/ planted.

In the project, contour trenching will be taken up in the plantation areas in watershed areas of gram panchayats. In addition to this, contour trenches will also be made in the adjoining areas of the plantation sites where although the need of plantation is not required but with making of trenches help improve soil-moisture condition and in turn improve the forest structure.

The actual extent of contour trenches in different watershed areas of project Gram Panchayats will be detailed out in GPRMP.

### 3.1.7.10. Drainage Line Treatment

The objective of drainage line treatment is to reduce the erosive velocity of surface run off by flattening the steep gradient of the gullies (drainage lines) and to facilitate the safe drainage as well as prevention of cutting of banks of drainage lines to prevent the ongoing soil erosion and reclaim the land turned uncultured.

This will be achieved by the construction of a series of barriers (commonly known as check barriers) from top to bottom which transform the longitudinal gradient into a series of steps with low risers and long flat treads.

The drainage line treatment under the Project will broadly cover (i) vegetative check barriers and (ii) the civil structure-based check barriers. These activities will be considered for drainage lines which pass through those watersheds which are selected for treatment in each gram panchayat.

**a. V*egetative Treatment***

(i) Tree Plantation

Tree plantation will be done to protect the land on both sides of drainage line. Plantation model and other details are given in Section 3.1.4.2.2 (Plantation Models).

(ii) Vegetative Check Barriers

These types of check barriers are provided in small and medium gullies having side slope less than 45 degree. Wooden poles of local species (preferably capable of sprouting) are driven into ground in a single or double row across the gully (drainage line) and brushwood is packed on the upstream face of the check barriers.

**b. Civil Structure Treatment**

(i) Dry stone check barriers

At the upper reaches of gullies (drainage lines) having width 2-3 metres, where surface run-off is high and cannot be adequately controlled by vegetation alone. Moreover, the temporary measures are impractical and stones are available locally, dry stone check barriers are constructed. These structures should essentially be reinforced with vegetative measures.

(ii) Crate wire check barriers

These check barriers are used for retention of debris in gullies (drainage lines) receiving relatively large quantities of runoff and are constructed by filling stones in crates of galvanized iron wire mesh. These structures should also be essentially reinforced with vegetative measures.

(iii) Cement concrete check barriers

At the upper reaches of gullies (drainage lines) having width 2-3 metres, where surface run-off is high and cannot be adequately controlled by vegetation alone and the temporary measures are impractical. If stones are not locally available cement concrete check barriers are constructed. These structures should essentially be perforated and reinforced with vegetative measures.

### 3.1.7.11. OMIF

The subcomponent will also support the establishment and financing of an operation, maintenance and investment fund (OMIF) in each of the participating GPs. The OMIF will be established under existing GP financial management procedures to meet the operations and maintenance (O&M) responsibilities of community infrastructure related to SLWM constructed under this project and that already existed. Initial funding to the OMIF will come from community contributions with the project providing top-up funds through matching grants (MGs) to GPs. The underlying principle of the OMIF is to incentivize local revenue generation for, and investment in, O&M of GP-managed SLWM-related infrastructure through this 'matching' financing. Top-up grants will be provided once the OMIF have reached defined thresholds in terms of revenues raised and legitimate expenditures on O&M activities. Details will be provided in the COM & the Grants Manual.

### 3.1.7.12. Adoption of Best practices in NRM

In Himalayan states, wide ranging practices of management of natural resources, mainly the soil, water and vegetation, are adopted by different stakeholders including the Govt. agencies, civil society organization and by communities. Specifically, natural resource management practice is integral aspect of ethnic communities. While, often these practices are relevant to the specific sets of enabling environment, it is important to understand the basic principles on which these practices work, and therefore, its potential of replication or scaling-up in other regions of similar agro-climatic situation but distinct community and governance set-ups. Of these practices only few qualifies to term as best practice[39].

[39]A best practice is a method or technique that, through experience and research, has proven by delivering results that are superior to those achieved by other means and thus accepted as an alternative way of doing things. In a sense, best practice describes a method or technique that is known to produce optimal and efficient results, consistently.

Project aims to document and if appropriate promote the scaling up some of these best practices for the benefits of the natural resources and communities depending upon those resources. For this, following approach will be followed

a. Identification and documentation of best practices of natural resource management in Himachal Pradesh and other adjoining Himalayan states. Keeping the broad objective of project in view, *inter alia*, following important aspects of tentative list of the relevant natural resource management areas will be considered for such documentation:
   - Soil and Water Conservation
   - Biodiversity conservation
   - Assisted Natural regeneration
   - Innovative approach to silviculture
   - Diversity driven plantation
   - Social or physical fencing
   - Control of invasive species
   - Fire management
   - Water harvesting and management
   - Forest seed management
   - Sustainable management of NTFP

b. The documentation will be done by adopting different approaches. For example, by organizing a workshop of practitioners on above thematic areas. Or, through voluntary scouting of such practices.

c. The documentation work will be completed by end of second year of the project.

d. Short listing of relevant and interesting practices from the documented pool of practices. And based on the need and applicability in the project area, some of those practices will be executed in the project area.

Project also aims to test and promote some innovative ideas of grass root origin on different aspects of natural resources. Following mechanism shall be adopted:

- An NRM Innovation Committee will be constituted at PMU level.
- This committee will converge with silviculture wing of the HPFD for the implementation of best practices. For this purpose workshops shall be organised with resource persons from HPFD and other eminent institutes within or outside the state.
- The proposals for NRM Innovations shall be submitted by different stakeholders of the Project.
- The project proposals will mandatorily focus on field-based actions on management /conservation of various natural resources.
- Based on the merit and innovative ideas, successful innovations may be promoted for further scaling up under the project, for example through demonstrations or as part of

the eligible activities. However there will not be any cash awards to the stakeholders submitting these innovative practices.

- The progress of the work will be monitored periodically by the NRM Innovation Committee.

### 3.1.7.13. Water Augmentation:

Climate change, population growth and increasing demands led unprecedented set of challenges with regard to water management in the State. However, efforts have also been made to improve watershed gains, especially the water. Development of water harvesting and storage infrastructure is critical for extracting and delivering the benefits to farmers and other water user groups.
Project will also aim to improve the water availability to local people by adopting following broad approaches:

- Creating water harvesting and storage systems
- Improve the traditional water use areas like Bauries (Springs)

### 3.1.7.14. Water Harvesting and Storage

The purpose of this set of intervention is to make water available to the communities by harvesting, storing and further distributing it for the purpose of small-scale irrigation. Depending upon the local potential, as determined by geo-physical and climatic conditions, the suitable water harvesting and storage systems will be created in each Gram Panchayat.
While the detailed planning of water harvesting, storage and distribution infrastructures for each Gram Panchayat will be developed in GPRMP, at broader level, following set of interventions will be adopted:

#### a. Ponds

The objective of constructing/ renovation of water ponds are to harvest the surface run off for making the harvested water available for the wildlife, cattle and general-purpose use by the communities. In addition, these ponds will improve the water regime of the area. These are constructed by excavating earth and forming embankments with stone lining to harvest rain water. An approach path with stone pitching is provided in these ponds for the animals (cattle and wildlife). The size of these ponds will depend upon the catchment area and the space available. These will be constructed in the forest land and community land forming the catchment of the selected water sources in the Project area.
The selection of site for ponds is an important criterion to avoid erosion due to domestic animals. The plantation areas should be away from sites of ponds. Therefore, the community needs to be involved in decision making along with the project. Wherever the ponds are deep, fencing may be undertaken.

#### b. Check Dams

These are small gravity check dams (having height not more than 6 m) and are generally constructed in the areas down below near to the agricultural fields to store rain water for the primary purpose of irrigation. Depending upon the site conditions and the local availability of construction material, these can be constructed in stone masonry, cement concrete or earth.

### c. Sub Surface Dykes/ Sump Well

The objective of these intake structures is to harvest sub-surface flow for the purpose of making it available for irrigation. These are constructed at locations where river beds are generally sandy and an impervious layer lies at a small depth. Harvesting of sub surface flow is done by construction of a head wall across the stream/ drainage line/ nallah up to the impervious layer of the bed and a water collection chamber with filters and wing walls. Selection of type of structures to be constructed will depend upon the site conditions.

Sump Wells are constructed along drainage line/stream/nallah where their beds are sandy to collect water. These are generally constructed in perforated stone masonry surrounded by filters.

### d. Spring Source Development (Bauries)

Springs are the main source of drinking, domestic and agricultural water for millions of rural populations in the Himalayan States. Majority of water supply schemes are completely depended on hydrological health of these springs. In Himachal Pradesh, however, out of about 20700 villages in the state, 2597 villages (i.e. about 13%) have spring water source and support only about 0.2% of total number of surface flow irrigation schemes[40]. Although no state specific detailed study available on this aspect, evidences clearly suggest that perennial springs discharge is getting reduced. Erratic rainfall, seismic activity and ecological degradation of forested catchments are impacting the mountain aquifer systems, affecting life and livelihoods of large number of people living in the middle and lower altitudes. The situation is predicted to get worsen with changing climatic conditions and rainfall pattern. Shortage of drinking water is getting more acute day by day.

Therefore, there is an urgent need to rehabilitate the depleting natural traditional water sources i.e. the springs. Under this activity, the project will come up with specially designed models which will include the renovation and creation of new civil structures, wherever required. This would include constriction of drinking troughs for cattle, canopy over the source, and area for washing and downstream channelization. This would be an important feature as it will promote water use efficiency and hygiene.

Under the project in each Gram Panchayat two bauries (springs) will be treated. Thus, in total **856** such bauries will be renovated for effective use of spring waters for various domestic, livestock and even to some extent the agriculture uses.

It is important, however, that the selection of average of two bauries in each Gram Panchayat must be based on certain objective criteria (given below) and the prioritization will be done by the community during the preparation of GPRMP:

- The bauri which cater more number of people in the Gram Panchayat

[40]NITI Aayog in 2017 started discussing agenda for sustainable development in Indian Himalayan Region and identified five thematic areas including the 'inventory and revival of springs for water security'. The NITI Aayog Report of Working Group I: Inventory and Revival of Springs in the Himalayas for Water Security is prepared in 2018 &available at https://niti.gov.in/writereaddata/files/document_publication/doc1.pdf

- The bauri which has higher water yield
- The bauri (s) located in better accessible area

### 3.2. Component 2: Improved Agricultural Productivity and Value Addition

With primary water harvesting structures promoted under Component-1, in the Govt. land or non arable including community land; Component -2 will focus on making irrigation water available to households through construction of community managed storage structures. As a next step, the project will promote utilization of water efficient technology such as sprinklers and drip irrigation systems.
As project will be able to bring only a fraction of total land across the GPs, the project, as the next step, will undertake demonstration and promotion of climate resilient agriculture across the GPs.

#### 3.2.1. Rationale

The target area under the project has a low livestock, land and water productivity. Also, there is not much value addition to benefit the primary producers. This is primarily due to lack of assured irrigation, absence of water budgeting, limited adoption of evidence- based climate resilient technologies, limited access to technology, finance and markets especially for women producers, limited production and value chain development of high value crops. The component 1 focuses on source sustainability and primary water harvesting; component 2, as the next logical step promotes water distribution and climate resilient agriculture through climate smart technologies for efficient utilization of water for irrigation and creating an eco-system for enhancing returns to the primary producers.

For the above, the component 2 focuses on developing GP level water security plans; supporting water harvesting, storage, and primary and secondary water distribution; promoting cluster level climate smart extension services; constructing foot bridges and ropeways for better connectivity and building capacities of various stakeholders in climate resilient agriculture.

#### 3.2.2. Objectives of the Component

The objective of the component is “To promote climate resilient agriculture and, thereby, sustainably improve farm-based production of households in the target region”. By the end of project, there would be an increased adoption of climate smart technologies and climate resilient agriculture practices among participating farmers.

The objective is planned to be achieved through**;**
- Increasing availability and efficient utilization of water for irrigation.
- Promoting climate resilient agriculture.
- Developing clusters of high value agriculture crops.
- Analyzing factors affecting transhumant that have livestock dependent livelihood.

#### 3.2.3. Approach

The objective is planned to be achieved through two sub-components and associated activities:

1. **Subcomponent 2A (Improved Water Productivity) will support investments in the provision of water by investing in primary and secondary distribution infrastructure at the community level and farm-level irrigation equipment.**

The project will finance directly decentralized water infrastructure assets within GPs based on robust GP-RMPs with the project financing matching grants to group beneficiaries for club goods and to individual beneficiaries for private goods This will include water harvesting, storage, and distribution infrastructure, such as, community tank renovation, roof rain-water tank installation, strengthening of traditional irrigation channels, and gravity and lift intake and distribution structures. To ensure these investments lead to increases in water productivity rather than only water availability. The project will invest in increasing water utilization in GPs where:

(i) Upstream investments in source sustainability are being implemented under Component-1.

(ii) Investments under Subcomponent 2B will support increased adoption of climate smart technologies and high value crop production to ensure the productivity of subsequent water use will be maximized, thereby achieving 'per drop, more crop.'

2. **Subcomponent 2B: Adoption of Climate Smart Agriculture (CSA) Technologies and Diversification into High-Value Crops**

**This component supports the adoption of CSA practices** in conjunction with increased access to irrigation for existing cropping patterns and/or diversification into high-value, climate-resilient crops. The Component shall involve demonstration plots, and improved extension services to support farmers and producer groups. The project will converge with the Department of Agriculture, Department of Animal Husbandry, Department of Science & Technology, the two State Agriculture Universities (SAUs) viz: Chaudhary Srawan Kumar Himachal Pradesh Krishi Vishva Vidyalaya (CSKHPKV) Palampur and Dr. Yashwant Singh Parmar University of Horticulture and Forestry (Dr. YSP UHF) Nauni, Solan along with the Krishi Vigyan Kendras (KVKs) for extension purposes and support. The Project will hire consultancy services where complementary non-state services are required. Where knowledge of appropriate CSA practices is limited, the project may partner with any other research institutions.

Interventions to support high value crops, including medicinal and aromatic plants, will take a value chain perspective and will be based on the analysis of market potential. Such interventions will include consultancy services covering *inter alia* market analysis and strategies for value addition.

This component will also fund essential modest "last-mile" market access investments (e.g. works contracts for the provision of footbridges and ropeways but not roads or investments requiring land acquisition).

This subcomponent will utilize the Matching Grant (MG) scheme to subsidize essential productive assets to individual farmers, specifically active women farmers and women-headed households, and farmer groups under pre and post harvest technology interventions.

**Based on the outcomes of the value chain analysis, the project will adopt a cluster-based approach where relevant.**

This is essential to avoid fragmentation and an unsustainable scattering of project investments and to generate the volume to benefit from economies of scale in production and marketing/ processing that is essential to competitive agriculture.

The Project shall facilitate developing clusters of high value agriculture crops by mobilizing producer groups (PGs) on the basis of a value chain scoping study and cluster analysis. The State has considerable experience in such approaches (including through other World Bank-financed operations). The project will include Technical Assistant (TA) support for business incubation if an appropriate cluster emerges where this potential can be realized. Prospective clusters in specific value chains shall be determined once GPRMPs have been prepared and requisite analysis have been undertaken alongside as a consultancy.

### 3.2.4. Project Development Objective Indicators of Component 2:

| Indicator Name | Baseline | Intermediate Targets | | | | End Target |
|---|---|---|---|---|---|---|
| | | 1 | 2 | 3 | 4 | |
| New farm area brought under higher efficiency irrigation through project support in targeted GPs (Hectare(Ha)) | 0.00 | 0.00 | 50.00 | 100.00 | 150.00 | 200.00 |
| Share of participating farmers adopting climate smart agriculture practices (Percentage) | 0.00 | 0.00 | 15.00 | 30.00 | 40.00 | 50.00 |
| Share of participating farmers adopting climate smart practices that are female (Percentage) | 0.00 | 0.00 | 10.00 | 15.00 | 20.00 | 30.00 |
| Share of participating farmers who give a rating of "Satisfied" or above on process and realized benefits of project interventions (Percentage) | 0.00 | 0.00 | 30.00 | 50.00 | 70.00 | 75.00 |

| | | | | | | |
|---|---|---|---|---|---|---|
| Share of participating female farmers who give a rating of "Satisfied" or above on process and realized benefits of project interventions (Percentage) | 0.00 | 0.00 | 30.00 | 50.00 | 70.00 | 75.00 |

### 3.2.5. Intermediate Results Indicators of Component 2:

| Indicator Name | Baseline | Intermediate Targets | | | | End Target |
|---|---|---|---|---|---|---|
| | | 1 | 2 | 3 | 4 | |
| Farmers reached with agricultural assets or services (CRI, Number) | 0.00 | 0.00 | 8,000.00 | 12,000.00 | 18,000.00 | 20,000.00 |
| Farmers reached with agricultural assets or services - Female (CRI, Number) | 0.00 | 0.00 | 1,000.00 | 3,000.00 | 4,280.00 | 4,280.00 |
| Farmers reached with agricultural extension or training – Male (Number) | 0.00 | 0.00 | 0.00 | 2,000.00 | 5,000.00 | 10,000.00 |
| Farmers reached with agricultural extension or training – Female (Number) | 0.00 | 0.00 | 0.00 | 1,000.00 | 2,000.00 | 3,000.00 |
| Farmers adopting improved agricultural technology (CRI, Number) | 0.00 | 0.00 | 1,000.00 | 3,000.00 | 5,000.00 | 10,000.00 |
| Farmers adopting improved agricultural technology - Female (CRI, Number) | 0.00 | 0.00 | 300.00 | 1,000.00 | 2,000.00 | 3,000.00 |
| Farmers adopting improved agricultural technology - male (CRI, Number) | 0.00 | 0.00 | 700.00 | 2,000.00 | 5,000.00 | 7,000.00 |
| Area provided with new/improved irrigation or drainage services (CRI, Hectare(Ha)) | 0.00 | 0.00 | 500.00 | 1,000.00 | 1,500.00 | 1,500.00 |
| Area provided with new irrigation or drainage services | 0.00 | 0.00 | 500.00 | 1,000.00 | 1,300.00 | 1,300.00 |

| | | | | | | |
|---|---|---|---|---|---|---|
| (CRI, Hectare(Ha)) | | | | | | |
| Area provided with improved irrigation or drainage services (CRI, Hectare(Ha)) | 0.00 | 0.00 | 50.00 | 100.00 | 150.00 | 200.00 |
| Share of user groups for agriculture extension services with female treasurers (Percentage) | 0.00 | 0.00 | 0.00 | 10.00 | 20.00 | 30.00 |

### 3.2.6. Activity Chart of Component 2:

| Activity Chart of Component -2 | | |
|---|---|---|
| **S. No.** | **Particulars** | **Activity** |
| A | **Sub-Component 2A: Improved Water Productivity** | |
| 1 | **Primary Water Distribution (pipes & pumps)** | Provision of pipes and pumps for linking primary storage with secondary storage |
| 2 | **Water distribution and water use efficiency (tanks, channels, sprinklers etc.)** | Tanks for Gravity Schemes (structures for secondary storage) |
| | | Tanks for Lift Schemes (structures for secondary storage) |
| | | Renovation of Old Community Tanks |
| | | Roof Rain Water Tank (RRWT) Individual |
| | | Roof Rain Water Tank (RRWT) Community |
| | | Irrigation Channels |
| | | High Efficiency Irrigation (Micro Irrigation) |
| B | **Sub-Component 2B: Adoption of Climate Smart Technologies and Diversification into High Value Crops** | |
| I | **Demonstration and Promotion of Climate Resilient Agriculture** | Demonstration of CSA and High-Value Crops |
| | | Farmer Field Schools |
| | | Field trials of CSA technologies/varieties |
| II | **Consultancy services to support value chain development** | Value chain scoping study (1 per district plus 2 additional) |
| | | Study - Identification of Clusters |
| III | **Transhumant Development** | Technical Support Agency for Transhumant Study/ consultancy |
| | | Fodder Augmentation |
| | | C/o Livestock mangers |
| | | Climate Resilient Livestock- Small Ruminants |
| | | Climate Resilient Livestock- Large Ruminants |
| | | Tribal Action Plan |
| | | Training & Exposure visits |
| | | De-worming/ Dipping of Flocks |
| | | Flock Management |
| | | Genetic Improvement |
| IV | **Sub- Project Investments for** | Matching Grants to Individual Farmers |

| | | |
|---|---|---|
| | **agriculture and allied activities (based on scoping study i.e. 3.2.12 )** | Matching Grants to Farmer Groups |
| V | **Ropeways and Foot bridges** | Construction of foot bridges and ropeways |
| VI | **Value chain development** | Investment – value chain infrastructure at cluster level |
| | | Technology for farm management and market development |
| | | Market access and product development and research |
| | | Enterprise incubation per cluster |

### 3.2.7. Sub-Component 2A: Improved Water Productivity

The Project underlines the relation of water with agriculture and allied sectors;

- Assured irrigation lays the foundation of Climate Smart Agriculture (CSA)
- Secondary storage of water near to the culturable land will ensure irrigation at required time in a crop cycle.
- Secondary storage will ensure the risk- taking abilities of the farmer for cultivation of high yielding, high value crops including livestock and use of costlier inputs.
- The Project philosophy relies upon beneficiary cost sharing for water infrastructure development for group and private assets, which will be specified in the Grants Manual, Community Operational Manual (COM) and Water User Groups (WUGs) taking care of the Operation & Maintenance (O&M) of all assets by contributing towards O&M funds, thus ensuring sustainability.

The purpose of this set of interventions is to make water available to the communities by linking the primary harvesting undertaken under Component-1 primarily in the forest land/ Govt. land, storing and further distributing it in the private/ arable land for the purpose of small-scale irrigation. Depending upon the local potential, as determined by geo-physical and climatic conditions, the suitable water harvesting and storage systems along with distribution will be created in each Gram Panchayat.

### 3.2.8. Activities

**I. Primary Water Distribution (Pipes and Pumps)**

This activity is a logical step to the component 1 and comprises of distribution of water from the primary water harvesting structure in a Gram Panchayat to a secondary water storage structure (Water Tank) on private land. To establish a link between primary water storage undertaken in Component-1 and secondary storage structures, pipes and pumps would be required. The procurement of these pipes and pumps shall be undertaken by the Project and would be part of procurement of secondary water harvesting structures.

**II. Water distribution and water use efficiency (tanks, channels, sprinklers etc.)**

**a. Tanks for Gravity Schemes (structures for secondary storage):**
**b. Tanks for Lift Schemes (structures for secondary storage):**

The above infrastructure shall be made at farmer's field level and would be group based activity. This group would be known as water user group (WUG), the formation of which will be facilitated by the Project. The details of formation of WUG have been described in COM. It is expected that storage of each structure/tank would range between 30,000 liters

to 70,000 liters depending upon the primary water harvested. This infrastructure would be financed 100 % by the project. While undertaking the activity first preference would be given to the vulnerable sections for formation of WUG. For this activity O&M contribution pattern would be as follows;
The WUG would deposit an upfront share in its own account @ of 5% of the total cost of the assets (e.g. tank) for O& M. This would trigger the process of construction of the assets by the District Project Management Unit (DPMU). Out of the total funds deposited by the User Group (UG) in its own O&M account for the assets provided under Component 2 of the Project, 20% of the funds will be contributed towards OMIF.

### c. Renovation of old Community Tanks

It has been found that various agencies had provided infrastructural support for irrigation (tanks) to the community in the past by financed by some other agency/ department. Some of them have been abandoned due to want of maintenance or availability of water. The Project shall renovate these structures along with formation of WUGs. However before renovating these structures a detailed survey with the help of local people will be done to ascertain the cause of abundance and during GPRMP preparation old tanks will be identified for renovation with availability of water. This will additionally contribute towards secondary storage at a lower cost. The WUG, constituted by the project for the purpose would follow the O&M & OMIF contributions as described above for secondary storage tanks.

### d. Roof Rain -Water Harvesting

- The average annual rainfall in HP is up to 1200 mm. This brings in the scope of rain- water harvesting for individual farmer to meet the requirement for growing vegetables on a small scale and for livestock etc. The activity would be undertaken on the basis of beneficiary cost sharing as specified in the Grants Manual. Differential cost sharing mechanism would be followed for the vulnerable and the other individual beneficiaries. While undertaking the activity first preference would be given to the vulnerable. The selection of the individual beneficiaries will be done by the Gram Panchayatas as part of the GPRMP process based upon the following criterion:
  - Preference shall be given to the Household (HH) at the ridge where secondary storage is not possible
  - HH with small land holding & with some livestock.
  - The activity shall be carried out on cost sharing basis with a differential cost for the vulnerable which shall be elaborated in the Grants Manual.

- In case where the households are densely packed and the activity is feasible in a group. The activity will be implemented by the project following the concept of WUG as narrated in sub-section–b above both for formation and financing purposes. The WUG, constituted by the project for the purpose would follow the O&M & OMIF contributions as described in the subsection.

### e. Irrigation Channels

These are traditional gravity-based channels known as kuhals in mountainous region. As these channels are dug out in soil, it leads to extensive water losses due to percolation. The

Project intends to construct concrete or GI/alkathene pipe channels to increase the water use efficiency of these traditional structures. The activity would be undertaken on the concept of WUGs. The activity would be undertaken on the basis of beneficiary cost sharing as specified in the Grants Manual. Differential cost sharing mechanism would be followed for the vulnerable and the other individual beneficiaries. While undertaking the activity first preference would be given to the vulnerable. The WUG, constituted for the irrigation channel by the project would follow the O&M & OMIF contributions as described in the subsection-b above. However, while undertaking the activity first preference would be given to the vulnerable including women.

**f. High Efficiency Micro Irrigation**

Sprinklers and Drip irrigation systems would be promoted under the project. The field connectivity of secondary storage may directly be linked to High Efficiency Irrigation systems supported by the project. This would emphasize the concept of water budgeting and water use efficiency to maximize the financial returns for the water use resulting in "Per Drop more Crop"**.** As a private infrastructure, the asset would be provided to the beneficiary on a cost sharing basis. The beneficiary would be expected to provide a contribution towards the cost of the asset and the remaining would be provided as a matching grant for which modalities shall be laid in the Grants Manual. There will be a differential cost sharing mechanism for poor/ vulnerable households and other households. The O & M in this case would be entirely managed by the beneficiary household.

To maximize the efficiency of matching grants it is important to realize some minimum investment by the recipient or in other words when a beneficiary bears some cost of an asset his/her responsibility/liability is enhanced towards the asset provided by project

**g. Operation and Maintenance (O&M)**

The O & M is primarily a responsibility of the beneficiaries and is key for the sustainability of the Project investments. For this reason, the OMIF would be used to ensure that irrigation infrastructures are operational and well maintained. Apart from the on farm investments which will be the sole responsibility (100%) of the individual beneficiary and group investments, which will be the sole responsibility (100%) of the WUGs (section 3.2.9), all the other investments will be maintained through the OMIF.

### 3.2.9. Institutional Arrangements & Community Level Process for Secondary Water Storage.

For the group-based activity, a Water User Group (WUG) would be formed for each secondary storage infrastructure i.e. tanks in the private/ arable land. The project will facilitate formation of WUG across villages based on the regular community meetings, proposals of the GPRMPs, location of the primary water harvesting structures, etc. as specified in the COM. Each WUG will have about 5 to 10 members depending upon the size of the storage structure. The WUG formation will be facilitated by the Project. WUG would have its own operational bank account to meet out Operation and Maintenance (O&M) of the asset. Initially the WUG shall raise some upfront deposit in its account to qualify for the asset creation. Technical feasibility and financial estimates would be undertaken by the project.

The secondary storage structures like tanks provided as group based activities shall be fully funded by the Project. All procurement arrangements related to construction shall be carried out by the Project. The upfront deposit to be made by the WUG in its own account shall trigger the funding and procurement arrangements by the Project. The upfront deposit to be made by the WUG shall be specified in the Grants Manual. Subsequently 80% of this upfront deposit made by the WUG shall be retained in its own account whereas 20% shall go as a contribution to the OMIF account in the name of the Gram Panchayat. The following criteria shall be considered as detailed in the Grant manual:

- First preference to be given to more vulnerable households including female-headed households.
- Preference to be given to members with contiguous patches of land.
- Preference to members willing to contribute to the O&M fund.

The WUG would first transfer the piece of the land in the name of the Gram Panchayat, where common land in the name of Gram Panchayat is not available and the asset has to be constructed on the private land. This process shall be undertaken before the asset creation by the Project.There will be an agreement between the landowner, the Gram Panchayat and the Water User Group with respect to the use of land for the structure. Here too the Project will ensure that no vulnerable is deprived of precious land where donations of such nature are involved.

The project would make best efforts to include maximum number of households of given Gram Panchayat in the WUG while extending the benefits of secondary water storage activities. Further, the WUG would be required to contribute three types of funds in their accounts for the regular operations and management of secondary storage as well as OMIF for Primary storage.

i. **Beneficiary Contribution:** As discussed above, the members of the each WUG will deposit an upfront share in its own account @ of 5% of the total cost of the assets (e.g. tank) for O& M. This would be a onetime contribution notionally in its own account towards the infrastructure costs. This is a prerequisite for asset creation by the Project. 20% of this deposit shall be deposited in OMIF and rest retained in the WUG for the asset's O&M. The detail of modalities towards OMIF have described in detail in Matching Grant Manual.

ii. **Operational Water User Charges:** The beneficiaries/ WUG shall pay recurring operational user charges on a mutually decided rate to their own account. The beneficiaries/ WUG may also pay some fixed lump sum charges to the OMIF account after the harvest of each crop for the water use charges or the common property resource use. This would be a bullet contribution and would not be a burden on the beneficiary as they have relatively more cash after sale of produce. This will take care of the recurring expenses for operating the infrastructure, like power bills, etc., for the WUG.

iii. **Intermittent Contribution:** Given that above two contributions might not be sufficient to take care of emergency repair to the infrastructure in case of natural disaster; WUGs would be facilitated to contribute an agreed amount decided by it.

***Given the above three contributions, the operations and maintenance of the secondary water storage structure would entirely be the responsibility of the WUG.***

### 3.2.10. Sub-Component 2B: Adoption of Climate Smart Technologies and Diversification into High Value Crops

Despite the availability of Climate Smart Agriculture (CSA) technologies and climate-resilient, high-value crops appropriate to various agro-ecological conditions in Himachal Pradesh the observed adoption rates of CSA technologies are typically less than 30 percent. This leaves a considerable scope for scaling up. However, CSA technologies are not scale-neutral, are risky, and there are significant up-front investment costs. Integrating these technologies more thoroughly into the existing research and extension system is therefore essential: farmers require real-time support & hand holding for taking such actions specific to their farming practices. This subcomponent will therefore support:

i. On farm farmer field demonstrations schools through project financing of the incremental operating costs of the two State Agriculture Universities (SAUs) and KVKs (and qualified consulting firms where existing state services are not available) to deliver climate-resilient extension services to all interested farmers in the project-supported GPs using a hands-on, practical approach to sharing experiences and knowledge within and across farmer groups.
ii. Interactive communication campaigns in shape of capacity building thematic trainings, exhibitions, agriculture camps, veterinary and livestock awareness camps etc. These communication campaigns will also cater the needs of women farmers Research institutions may undertake field trials of new CSA technologies and/or climate-resilient, high-value crop varieties, where knowledge of appropriate CSA practices or varieties is limited, in partnership with interested farmers.
iii. Technical assistance for value chain development using adoption of cluster-based approach wherever relevant. This would avoid fragmentation and an unsustainable scattering of investments and will generate the volume to benefit from economies of scale in production and marketing/ processing that is essential to competitive agriculture. The project will include Technical Assistance support for business incubation if an appropriate cluster emerges where this potential can be realized.

### 3.2.11. Activities

**I. Demonstration and Promotion of Climate Resilient Agriculture**

The demonstration and promotion of climate resilient agriculture would focus on 2 types of agriculture; rain-fed and irrigated systems. In Himachal Pradesh, 80% of the total culturable land is rain-fed. Compared to the national average of 46% culturable area under irrigation the State has only 20% culturable area under irrigation. Sustainable landscape management (SLM) practices refers to a combination of at least 2 technologies and approaches to increase land quality and restore degraded lands e.g. agronomic, vegetative, structural and management measures that are applied as a combination to increase the connectivity between protected areas, forest land and agriculture land (CRI Indicator as per the RFD). This underlines the need of inclusion of rain-fed areas.

This activity will support three kinds of interventions:

i. **Field demonstrations** would be organized for a range of dominant and potential crops across the project GPs as identified by the value chain study.
ii. **Farmer field schools** will be organized to provide real time support & hand holding for taking such actions specific to their farming practices.
iii. **Field trials of innovative CSA practices** in partnership with state research institutions and/or private consultants to strengthen the evidence base where knowledge of appropriate CSA practices is limited.

Each of these activities is described further below.

### i. Field demonstrations

Demonstrations are an important tool for enabling farmers to learn first- hand about improved agricultural production practices just as a picture speaks a thousand words, demonstration communicates a rich spectrum of messages for the farmers. Area specific variety and recommended technological inputs would be provided as part of demonstration as farmers require real time support & hand holding for taking actions specific to their terrain. The activity is in line with the recommendations of the 2 State Agriculture Universities (SAUs) and KVKs.
The selection of the beneficiary will be done by the Gram Panchayats (GPs) based upon the following criterion (additional crop/technology-specific selection criteria will be further specified in the COM):

- The farmer must be willing to teach other community farmers as it goes with the concept of lead farmers/innovative farmers.
- Preference shall be given to the HH/farmer having irrigated area to the plot size including the farmers of the UGs.
- Preference shall be given to active/lead women farmers.
- Innovative/ Lead farmers must be willing towards the cost of implementation.
- The Project will bear the costs of inputs like seed/ fertilizer etc. but no cost would be paid towards the land for demonstration plots, Farm Yard manure (FYM) and labor for different package & practices.

The project will enter into agreements with the Lead Farmers outlining their responsibilities to the project and the project responsibilities to the farmer, and these agreements will in particular specify the Lead Farmer's role in supporting extension activities. This will also be clearly specified in the COM.
The demonstrations will promote climate-smart agriculture crops and practices, including opportunities for diversification away from low-value traditional crops and technologies into high-value, climate-resilient crop and technologies. The specific crops and practices to be promoted through demonstrations will be identified on the basis of the value chain assessment and the Himachal Pradesh Climate Smart Agriculture Profile. Some examples of crops and technologies that may be promoted through demonstrations could include:

**Sample Crops:** Spices, vegetables, maize (kharif), rabi-wheat (kharif), pulses (kharif)

**Sample Technologies:** Agro-biodiversity (Conservation of genes of traditional crops), Vermicomposting, Zero-Based Natural Farming (ZNBF), Fodder Conservation, Climate Resilient Indigenous Livestock Breeds (Small & Large Ruminants)

### ii. Farmer Field Schools

While the extension visits will be led by a trained facilitator, the emphasis will be on participatory learning approaches, with farmer participants learning through observing, analysing, and trying out new ideas in their own fields and contributing to the discussions. The facilitators will begin by holding an information meeting with each GP to share the project's approach to extension and invite interested farmers (herders) to form producer groups focused on different crops, livestock variety, or allied activities. Each group will be pivoted upon an innovative/lead farmer. The group shall meet frequently depending on the production needs of the different products, either weekly (most annual crops and livestock), bi-weekly (some long-term crops), or monthly (most perennials). The learning cycles will be organized around the seasonal cycle of each focus crop/livestock variety/activity, i.e. a minimum of 2-6 months for vegetable-focused groups or up to 12-18 months for agro forestry-focused groups. The technical topics to be covered would include, among others, climate-resilient soil, crop and water management, climate-resilient, high-value varietal testing, integrated pest and nutrient management (including Vermicomposting); agro-forestry, fodder conservation; and value chains and marketing. Amongst the identified technical activities target trainings may be organized for women farmers on value chain and marketing.

### iii. Field Trials of New CSA Technologies/Varieties

This activity would provide incremental operating costs for State research institutions or consultancies to private researchers to undertake field trials of new CSA technologies and/or climate-resilient, high-value crop varieties in partnership with interested farmers. The activity will be further developed based on consultations with the SAUs/KVKs, and the detailed activity design will be incorporated into the PIP and approved by the World Bank before investment in this activity begins.

## 3.2.12 Consultancy Services to Support Value Chain Development

The following activities are envisaged:

a. A value chain analysis and
b. An economic cluster analysis.

### a. Value Chain Scoping Study

A value chain scoping study would be undertaken in the 1$^{st}$ year of the project and would cover all 10 districts targeted under the project. Given that agro-climatic conditions might be different within a district, a total of 12 regions have been proposed to be covered under the study. The value chain scoping study objectives are as follows:

(i) Assess the agriculture and allied sector income-generation opportunities in each region and prioritize the climate-resilient value chains (VC) for support under the Project with clear justification for the selected prioritization criteria, including market attractiveness; inclusivity, in particular for women and scheduled castes and tribes; environmental sustainability including climate resilience; income generation potential; and financial sustainability.

(ii) Analyse the selected VC activities and performance of the selected VCs, including mapping the VC actors, identifying the VC performance constraints and development opportunities; and recommending intervention areas to upgrade the selected VCs under the Project, with clear strategic guidance on institutional development and capacity building; private sector linkages for value addition and marketing; and VC finance.

The study will cover the following for each of the district/ region;

- Agro-climatic profile of the region
- Socio-economic profile
- Land use pattern
- Cropping pattern
- Status of availability of inputs
- System of aggregation of produce
- Access to market, demand and potential of prioritized VCs
- Recommended activities to upgrade the selected VCs.

**b. Study to identify Clusters:**

As a next step, a detailed study would be undertaken to identify and select cluster of villages across the project districts for undertaking interventions in the selected VCs. Prospective clusters in specific value chains can only be determined once GP-RMPs have been concluded; requisite analysis will be undertaken alongside the GP-RMPs accordingly. The selection of villages for a cluster would be based on objective criteria like location within a small geography, at least a threshold volume of production of the commodity, relatively better accessibility to other cluster villages and key markets, basic and required infrastructure services etc. The exact criteria will be published in the Terms of Reference. This study would be undertaken after completion of the value chain scoping study in the first year itself.

### 3.2.13 Transhumant Development

**a. Technical Support Agency (TSA) for transhumant:**

A technical support agency (TSA) would be engaged to study the issues of Transhumant in the Project area. The activity will finance a study in the first year. The study will provide an insight into the vulnerabilities of these communities and provide recommendations for interventions. This study will feed into the design of any future interventions with the target group and will also support advocacy for the group.

**b. Livestock Investments for Tribal Population:**

Based on the outcome of the transhumant study, the project will finance investments in the livelihoods development of the transhumant communities in the project area. These activities conform to the Environment & Social Management Framework. Since in Himachal Pradesh nomads are livestock dependent and are classified as vulnerable Project envisages including special activities under Tribal Development Plan (TDP). Livestock based activities for Small & Large Ruminants would be undertaken exclusively for the Tribal Population of the Project area. The major areas of intervention under the TDP are presented in the box below – these may be amended based on the findings of the study of issues of Transhumant in the project area:

**Interventions under Tribal Plan**

The major tribal groups in the region are Gaddis and Gujjars and the major source of livelihoods for them is rearing of small and large ruminants. As a result, the interventions under the TAP would focus on the livestock.

| S. No. | Intervention | Objective | Method | Cost Sharing |
|---|---|---|---|---|
| 1. | Training and Exposure Visits | Introduction and exposure to scientific livestock management, both small and Large Ruminants | Exclusive trainings and exposure visits for Nomads/ transhumant in Project area | Nil |
| 2. | Flock treatment: Dipping De-worming of flock | Ecto-Endo parasite removal | Provision of medicines to the Nomads of Project area in liaison with AH Dept. | Nil |
| 3. | Flock management | To reduce the infant mortality in livestock and improve productivity | Provide equipment like tarpaulins, drenching guns, castrators, etc. for livestock use | As per the Grants Manual |
| 4. | Genetic Improvement | Provision of Buffalo Bull/ Ram/ Buck for breeding | By providing genetically improved indigenous male animal | Nil |

### 3.2.14 Matching Grants for productive assets

Based on the findings of the value chain analysis, the project will provide matching grants to individual farmers and farmer groups ("producer groups") to procure productive assets to be used for the production of climate-resilient crops (for example, spices, vegetables, fodder, NTFPs, etc.) using climate-smart technologies (for example, homestead horticulture, fodder augmentation, basic pre- & post-harvest technologies, mangers, promotion of climate-resilient indigenous livestock breeds, etc.). The exact productive assets, crops and technologies to be supported and the procedures for beneficiaries to access these matching grants will be described in the Grants Manual. The below activity description focuses on the role of the project in managing the matching grants mechanism.

a. **Matching grants to subsidize individual farmers,** specifically active women farmers and women-headed households, and farmer groups to procure essential productive assets that enable them to adopt CSA technologies and/or climate-resilient, high-value crops.
b. **Matching grants to subsidize economically viable farmer groups** to procure basic infrastructure to procure essential productive assets that enable them to adopt CSA technologies and/or climate-resilient, high-value crops

Detailed modalities and role of project staff/gram panchayat have been explained in the Grant manual.

### 3.2.15. Ropeways and Foot bridges:

As the target area for the project is the mid Himalayan region, it is expected that accessibility would be a challenge for a small proportion of farmers. The focus would be to improve connectivity of the farmers from poor accessibility areas with the markets for supply of inputs and sale of produce. The financing under the activity would support construction of ropeways and foot bridges for easy transportation of inputs and produce. Connectivity is a major issue due to mountainous terrain of State and heavy rains during monsoon which is the main season of cultivation High Value Crops and cereals. The activity confirms connectivity of the agricultural produce to the markets. The activity shall be implemented at the panchayat level. This activity will be financed 100% by the project but it will not include roads or other investment which requires land acquisition and future maintenance will be responsibility of Panchayat as specified in the COM. As per the approved social and environmental plans, investments under this activity will be determined on the basis of (i) a needs assessment as part of the value chain and/or cluster identification studies; (ii) a feasibility assessment; and (iii) a request from the Panchayat. The implementation procedures for this activity will be described in detail in the COM.

### 3.2.16 Value chain development at cluster level

This activity will broadly cover project investments and training and consultancy services covering inter alia market analysis, strategies for value addition, enterprise development and capacity building of target producer groups/clusters with provision of inputs, equipment and tools etc. depending on the requirements as identified by the training needs assessment, value chain, and cluster identification consultancies. Matching grant mechanism will be followed. As noted it would include much broader range of investments than the Matching Grants to individual farmers and producer groups for productive assets.

The activity shall be implemented from the third year onwards. Hence, the specific activities will be identified during the project's Mid-Term Review (MTR) and will be subject to the World Bank's prior (technical) non-objection. There will be an option of linking the activity with pre-existing enterprises of similar nature, as enterprise development usually requires a long incubation time to become self-reliant, taking into consideration the viability of existing enterprises and their ability to contribute positively to the project development outcomes in the GPs targeted by HP IDP.

i. **Investment- value Chain Infrastructure at Cluster Level:**
   It is envisaged that a major intervention in the value chain would be in the production function. This would result in increased production of the targeted commodity. As a potential next step, the focus would be on aggregation, primary processing, secondary processing and marketing functions. This would require project investment on a cost-sharing basis with eligible producer groups/producer organizations in infrastructure such as collection/ aggregation unit, pack houses, feed mill etc. in the clusters identified by the aforementioned cluster study. The need for infrastructure would be defined as per the Value chain study report and the cluster identification study report. The capacity of the same would be calculated taking an estimate of the volumes to be processed over time. The specific activities will be defined during the MTR, and each value chain investment will be subject to the World Bank's prior (technical) non-objection.

**ii. Technology for farm management and market development:**

This activity would finance IT/ web- based application development for weather forecasting, agriculture advisory, market intelligence etc. The intervention is proposed in the 3rd year and may include contracting an IT company for developing the web-based application and for its maintenance for next 2 years or seeking convergence with an existing application/platform. Before the MTR, the potential for convergence with existing applications will be explored. The specific activities will be defined during the MTR and will be subject to the World Bank's prior (technical) non-objection.

**iii. Market access and product development and research:**

Based on the outcomes of project implementation and the above studies, the project may procure qualified technical support agencies (TSAs) to provide technical assistance through trainings and hands-on support to the producer groups and producer organizations covering inter alia market analysis and strategies for value addition. TA support will also be provided for business incubation if an appropriate cluster emerges where this potential can be realized. This activity would focus on providing support to clusters on branding and licensing and will also cover the costs of resource person or consultant required for the task. The specific activities will be defined during the MTR and will be subject to the World Bank's prior (technical) non-objection.

**iv. Enterprise Incubation per cluster:**

Given the entire value chain intervention, a farmer led institution (s) would be supported to take care of key processes across the value chain and operations under the value chain infrastructure. The finance under this activity would cover the initial cost of human resources, working capital requirement, etc. The project targets at most 15 enterprises across the project area, which will be identified based on *inter alia* their viability, support for CSA and high-value crops, and ability to contribute to the project development objectives in the GPs targeted by the HP IDP. The exact selection criteria and activities will be defined during the project's MTR and will be subject to the World Bank's prior (technical) non-objection.

The overarching goals of enterprise incubations are to create and develop:

(i) ***Vertical linkages between suppliers of raw materials and production inputs, producers/growers' organizations, processors, exporters, and buyers (such as wholesale and grain markets).*** In the context of HP, different actors in the agriculture industry and the value chain are dispersed, and many smallholder farmers and producers do not have sufficient access to inputs, post-harvest infrastructure and markets. In these contexts, co-location through agribusiness clusters and incubation approaches can reduce transaction costs, and increase productivity and innovation and ensure seamless connectivity of goods;

(ii) ***Horizontal linkages between producers via the grower's cooperatives and producers' groups*** (or farmers co-ops in selected districts). Creating linkages through producers' groups/organizations can help increase agribusiness and farmers' bargaining power, information sharing, and further reduce transaction costs between farmers and whole sale markets and individual buyers.. Producers'

groups can also stimulate demand for public investment in infrastructure, research and development and extension;

(iii) ***Harnessing linkages between supporting service providers such as research institutes, and universities, and public and private sectors and investors.*** The possible partnerships with two State Agriculture Universities (SAUs) and the consulting firm, KVKs, can also be uses as potential windows to explore opportunities to locate, identify existing cluster and to develop new clusters for the agricultural value chains. The PMU can explore national and global best practices such as 'cluster sprout concept' to revamp pre-existing clusters that are capable of becoming full-fledged industrial clusters in adjacent corridors in Himachal Pradesh.

(iv) ***Smallholder engagement in agribusiness incubators.*** To create business space for smallholder farmers, who are often overlooked, incubators can play as a trusted platform for them to move into commercial production and to specialize in higher-value crops with access to financing services and investments (mainly because farmers' productivity decreases as the requirement for inputs increases). This can also be beneficial to spatially disaggregated small farms which are less risky sources of crops than concentrated large farms as they are less likely to experience a major shock such as expose to a pest, blight, or weather event and avoid the risk of losing the entire crops for a year.

***(v) Typologies of clusters play a critical role because agribusiness clusters vary across several dimensions including products, market orientation, and presence of a producers' group or an apex organization.*** Possible clusters, that have emerged in India, can be studied to identify the key clusters under enterprise incubation for Himachal Pradesh: subsistence and cash crops including staple crops, domestic or export-oriented fresh fruits and vegetables such as apple, cash commodities as well as non-timber forest products. Second, clusters can hold a wide array of values, that is, some clusters focus on a variety of complementary crops which can all benefit from similar infrastructure development. Other clusters focus on increasing processing capacity to add value to one or two core crops. For example, fruit value-added processing in the Pune Food Processing cluster in India can be replicated in HP.

| ***Cluster Dimensions*** | | |
|---|---|---|
| ***Dimension*** | ***Description*** | ***Policy Measures*** |
| Horizontal | Share the same market or product | Organize conferences; create sector initiatives to draw similar firms. |
| Vertical | A part of the same value chain | Facilitate suppliers and contractors to co-develop, co-market goods and services; create quality control and environmental policies geared toward the whole value system. |
| Lateral | Share the same philosophy (sustainability or eco-oriented cluster), or shares the same capability (a media cluster) | Identify technological synergies between sectors. |

| | | |
|---|---|---|
| Technological | Share the same technology, usually located near universities or research centers (such as a biotechnology cluster) | Can be the starting point for the creation of a cluster (in reference to possible collaboration with a research institute or university) |
| Focal | A central actor drives demand | Facilitate interaction between organizations through a 'cluster project.' |

The experiences summarized in Boxes 1 and 2 below will be taken into consideration in planning and implementing the support to value chain development agribusiness enterprise incubation under the HP IDP, which will be defined during the Mid-Term Review.

**Box 1. Referral Note on MHWDP Agribusiness Agencies (Producer Organization) Support**

H.P. Mid Himalayan Watershed Development Project had made substantial improvement in production of vegetables, crops, fruits, spices, etc. Besides a number of groups of the Project are also involved in off farm livelihood activities. These groups have been clustered and federated by the Project. A few federations (Agribusiness Agencies) which the Project has been able to establish have started marketing the produce at a modest level. The World Bank has also been emphasizing to encourage Agribusinesses, this was also reiterated in recent mission (April, 2013).

To help agribusiness develop further and compete with the already established brands, these agencies (such as federations/producers cooperatives/self-reliant producers cooperatives/producer societies/producer companies etc.) need to develop proper infrastructure for packaging and marketing setups, besides raising working capital through financial institutions such as banks.

For better market development and to deploy technologies and innovation for farm management the following can be explored using Enterprise Incubators platform under Sub-component 2B.

- Agribusiness incubators can collaborate with existing and pipeline lending projects in HP to access resources to help producers from low value commodities to valued added products.
-Similarly, it can collaborate or leverage existing corridor related infrastructure works such as rural roads and bridges to better equip producers and farmers and ensure seamless transhipment to markets.
- Agribusiness incubators are capable to fill in missing links between the producers/growers organizations to market chains.
-Incubators can provide practical instruments for enhanced trade and linkage to local and terminal markets and wholesale buyers: In case of markets, incubators are very well positioned to access new markets for producers, laborers, capital and entrepreneurship in agribusinesses. For value chains, an incubators can strengthen producer to market chains. It further enhance Networks, that is : using incubators agribusinesses can lobby for greater alignment and coordination of disparate policies and actions in the agribusiness system. Finally, agribusiness incubators are able to realize tangible success and multiply the strengths of individual agribusinesses by enhancing whole sector competitiveness.
The Project may consider making these agencies stand on their feet.

The other objectives which would be accomplished are:

- To organize the growers in the Project for a better price of produce.
- Value addition to produce to make it more profitable.
- To encourage farmers of far flung areas.
- To create an assured market for producers at their doorstep.
- Better profit sharing between the growers.
- To save growers from exploitation of middlemen.

- To develop a brand for Mountain products.

The MHWDP had earlier prepared a subproject in value addition and packaging of spices, the approval of which was provided in XIV- EC meeting held on 28th January, 2012, as detailed below:

**MHWDP Support Package for Agribusiness Agency (Producer Organization)**

| # | Items | Rate (Rs.) | Total to a max in (Rs.) | Cost Sharing Project : Federation | Project share (Rs.) | Fed. Share (Rs.) |
|---|---|---|---|---|---|---|
| 1 | Building , machine and equipment | As per actual business plan proposed by the agency | 750000 | 75 : 25 | 562500 | 187500 |
| 2 | Skilled managerial manpower support | | 250000 | 75 : 25 | 187500 | 62500 |
| 3 | Marketing, packing and advertisement support | | 350000 | 75 : 25 | 262500 | 87500 |
| 4 | Support for raising working capital** | | 100000 | - | 100000 | - |
| **Total** | | | **1450000** | **75 : 25** | **1112500** | **362500** |

*** Project can provide support up to One year for raising the working capital through the Banks, interest on which can be borne by the project and the agribusiness agency in 75 : 25 ratio subject to a maximum ceiling of Project share up to INR 1,00, 000 (One lac only).*

**Eligibility Criterion for MHWDP Support Package:**

i. The Agribusiness agency should be registered under the provision of laws.
ii. To start with the agribusiness agency should have a minimum of 20 groups/ 200 households involved in its working.
iii. The agency should have at least 50% members from HP Mid Himalayan Project groups (SHGs, CIGs, and UGs).
iv. The Agribusiness agency should be able to demonstrate its true representation of being elected through a democratic process.
v. The agency should have its clearly spelt bye laws and should be able to demonstrate its working for the last minimum 1 year.
vi. The agency should be able to demonstrate its working, marketing capacities along with turnover of minimum Rs. 2, 50,000 during the last 1 year (by submitting audited financial statement/balance sheet/Income tax return, etc.)
vii. The agency shall be solely liable for and comply with the provision of Food Safety and Standards Act, 2006, Standard of Weight and Measure Act (SWMA), Labor Laws or any other laws/ rules while carrying out its activities.
viii. The Agribusiness agency's should have a sustainable and effective business plan for identifying assured markets and production volume to justify economies of scale within the next 2 years whereas the projection of groups involved may be up to 50/ 500 households.

The Agribusiness subproject would be approved by a subcommittee notified by the CPD.

**Box 1. Best Practices in India: Pragmatic and Systematic approach in agri-value chains and business development** *(these ideas can be considered for HP IDP TA support during the MTR)*

- Aggregation at farm proximate centers or consolidation centres via incubation approach have increased and boost exports in the past.
- Economics of scale is achieved by annual tender for transportation between farms and

| |
|---|
| distribution facilities<br>• Multi-modal evacuation especially during peak arrival seasons, reduces time and wastage; optimizes transportation module-vehicle and cost; facilitates early use of technology for traceability, etc.<br>• Availability of processing infrastructure is a win-win for farmers and processors; and wastage reduction<br>• Packaging material, labeling, standardization and certification helps to reduce wastage; regulatory and certification related process; and facilitate early use of technology |
| For perishable agricultural products, inter alia highlights:<br>• Importance of having packaging, health and safety norms for exportable products<br>• Use of innovative technologies and ICT for a stronger market information system. Particularly relevant for HP given the mobile and smart-phone penetration in the region.<br>• The need for both government and private sector collaboration and support are critical for improvements. |
| Retail of fresh fruits and vegetables:<br>• Exhibits role of efficient and well managed distribution center or connect and partner with private warehouses and government silos.<br>• Importance of adopting food standards and quality for domestic market, improving food packaging and installing food preservation technologies |

For all above activities falling under Component-2 the details of cost models, beneficiary selection, contributions by the vulnerable etc. will be described in the Grants Manual.

### 3.2.17 Community based organizations

The following community based organizations emerge based on the details above:

With the 2 broad areas of intervention under the component i.e. water and agriculture, the project will promote 2 types of community -based organization;

i. **Water User Groups (WUG):** The water user groups will take responsibility of O&M of common group infrastructure. Gram Panchayat will be responsible for the OMIF and assets such as primary water harvesting structure under Component-1, whereas WUG will generate its own assets i.e. secondary storage structures. For OMIF this, WUGs would contribute a part of their collection to the Panchayat OMIF fund. The OMIF may be top upped later on certain threshold limit by the Project in shape of matching grant described in the Matching Grants Manual.

ii. **Producer Groups and Organization:** Producer groups, as informal groups, would be formed across the GPs for promotion of farm -based livelihoods. These producer groups will be utilized by the project for promotion of specific farm products. The broad interventions with the PGs for this would be on the input supply and production side. A Producers' Organization, as a federation of Producer Groups, would be established in clusters showing potential and would be tasked with providing institutional support for forward functions like aggregation, processing and marketing. Preference would be given to an existing Producers' Organization dealing in the produce. However, in absence of a relevant agency or for the requirement of intermediate aggregation/processing unit, the project may form a PO for this purpose.

The other objectives, which would be accomplished, are:

- To organize the growers in the Project for a better price of produce.
- Value addition to produce to make it more profitable.
- To encourage farmers of far flung areas.
- To create an assured market for producers at their doorstep.
- Better profit sharing between the growers.
- To save growers from exploitation of middlemen.
- To develop a brand for Mountain products.

The Producer Groups or Organizations seeking support from the project would prepare a business plan proposal. This would be sub project activity, the proposal of which will be facilitated by the project staff. This business plan would be verified by the DPO and then forwarded to the PMU for its approval and funding. The details of the eligibility criterion for the PG/PO along with their sub-project /business plan have been described in the matching grant manual. The support package extended by the project for the PG/PO along with their cost sharing patterns has also been described in the Matching Grant manual.

The project will explore options for formalizing the project-supported groups during the project duration to ensure their sustainability after project closure.

The project would be facilitating 2 types of community institutions under the value chain cluster approach:

**i. Producer Groups:**

Farmers, producing same commodity as identified by the value chain study, would be organized in informal groups. The self-selection of farmers for producer groups may be based on the list of criteria presented below:

- Should be producing or is interested in producing a commodity that the value chain study has identified.
- Should have the resources for marketable production of the commodity.
- Should be interested in becoming part of a Producer Group.
- Preference would be given to poor and vulnerable households, including female-headed households.

There can be one or more PGs in a village. Ideally, a PG would have up to 25 members for ease of extension. A PG would be limited to members from the same village.

**ii. Producer Organization:**

The project intends to focus on the production side of value chain and utilize primarily existing producer organizations (PO) for supporting the input supply, aggregation, processing and marketing functions in the value chain clusters. The reason for engaging with the existing producer organization is two -fold;

- Establishing a sustainable producer organization would require a high gestation period.

- Engaging with an existing producer organization will bring in an established system of Governance- Management – Operations which will ensure regular services to the PO members.

However, it is envisaged that in case of some of the clusters, there would be a requirement for a business unit at the cluster level for aggregation and/ or primary/ secondary processing to link to the existing PO. This cluster level unit would be managed by a federation of PGs in the cluster. The legal entity for this would be explored to best fit the requirement as part of the cluster study.

Given the crucial importance of the Producer Organization and given the choice to focus on existing ones, the Project will need to develop a clear mechanism to assess the organization and functional health of these POs. SCORE is an international methodology used by various WB and IFC funded projects which has also been used in India; it will be used to help the project assess the capacity of the existing POs and indicate areas of the POs that need improvement and project support. For the pre-existing POs to cater to the involvement of the Project PGs, a clear agreement with the Project will be required establishing the engagements and obligations of each party.

### 3.2.18. Approach

The Project will seek to augment the use of irrigation as a principle strategy for shifting from low-value cereal production to climate-resilient crop varieties and higher-value fruit and vegetable production with a focus on increasing climate resilience and water productivity to maximize the financial returns for water use. The project will only work in downstream areas where upland interventions are also being implemented under Component 1. The project will leverage additional support from (i.e. seek convergence with) other government programs particularly those of the agriculture, horticulture, and animal husbandry departments. Convergence with the relevant line departments and relevant World Bank-financed projects (e.g. HP Horticulture Development Project) will be ensured through the project's Executive Committee (EC).

#### a. Climate Smart Agriculture (CSA)

The project will support the adoption of climate-resilient crops and CSA practices that address changing rainfall patterns and temperatures, reduce CO2 and methane emissions, and increase carbon sequestration (such as agro forestry, reduced tillage, and the system for rice intensification) to improve both climate mitigation and adaptation in HP.

#### b. Value Chain Cluster

Based on the outcomes of the value chain analysis, the project will adopt a cluster-based approach where relevant. This is to avoid fragmentation and an unsustainable scattering of project investments and to increase benefits from the economies of scale in production, processing, and marketing essential in competitive agriculture. HP benefits from extensive analytical work on potential clusters in a range of commodities and has considerable experience in such approaches (including through other World Bank-financed operations). The project will start with supporting key crops across the GPs through inputs (equipment)

and improved package of practices. With certain clusters showing potential in terms of increase in marketable surplus, the project would provide TA to support the aggregation, processing and marketing functions. These clusters will be supported starting in the third year of implementation focusing on the entre value chain based on the results of the first two years of project implementation, including the findings of the value chain and cluster identification consultancies and support to CSA production. This support will be defined at the MTR.

**c. Capacity Building of Stakeholders**

Given that the focus of the project would be promoting scientific package of practices, capacity building of various stakeholders will be the key. For the capacity building intervention, in addition to the human resource available with the project like SMS and extension officers, technical institutions and individuals will be engaged for developing the design as well for undertaking training of the primary producers. The project will utilize HP's agricultural research and extension system and existing Government-backed interventions by entering into technical agreements to finance the incremental operational costs of existing delivery agencies and hire consultancy services where complementary non-state services are required, e.g. to ensure a maximum number of trainee farmers per extension agent, to maximize learning outcomes. At the field level, the project will support training of project field staff, as well as innovative (lead) farmers and all interested farmers in the project areas, including women and other vulnerable farmers.

### 3.2.19. Institutional Arrangement

For the purpose of demonstration, an innovative farmer selected by the Gram Sabha would be supported under the project. In case of demonstration under the rain-fed conditions, vulnerable household, including women-headed households, will be the key criteria for selection. For demonstration under the irrigated condition, preference would be given to a member of the WUG, ideally a women farmer. Overall, the household should be willing to participate and pay the contribution as defined in the COM. These farmers would be supported by the extension officers under the project, with additional support from SAUs/KVKs and/or consultants as required. This will be further defined in the COM.

### 3.2.20. Community Level Process

This will entail facilitation for identification and selection of farmers by each GP who would undertake demonstration of climate resilient agriculture practices on their field and support promotion of the same. Based on the value chain scoping report, mobilization of farmers into Producer Groups would be undertaken by the extension officers of the project.

Interested PGs may then organize themselves into a Producer Organization with support from the project team and qualified technical service agencies starting in the third year of implementation and based on the findings of the cluster identification study.
This process will be defined in the COM.

### 3.2.21. Financial Arrangement

There shall be two types of financial arrangements to meet out the procurement requirements for Component-2:

i. For the demonstration activities (3.2.11) and tribal development activities (3.2.13) the key inputs will be supported under the project, such as seeds, fertilizers, veterinary medicines, livestock; their procurement would be undertaken by the DPO. The demand / requirement for the same would be consolidated at the DPO level.

ii. To affect Matching Grants (MG) for irrigation infrastructure (3.2.8), productive assets (3.2.14), and value chain infrastructure (3.2.16), communities (user groups, individual farmers, producer groups and producer organizations) themselves would undertake the procurement. In case any of the beneficiaries (individual or group) is/are unable to procure at their own due to shortage of money, the procurement will be done by Panchayat Purchase Committee (A subcommittee of GP). Procurement of goods/works such as roof rain water harvesting tanks, livestock mangers, classify for MG. Here individual/ group beneficiaries shall undertake procurement directly from the market. Detailed elaboration of MG including the nature of works, nature of goods, procedures involved etc. has been made in the Grants Manual separately.

### 3.2.22. Financial & Procurement Arrangement

There are 5 types of investments that would be made by the project under this component;

**i. Consultancies:** Consultants would be hired for the value chain scoping study and study for identification of clusters. Consultants may also be hired to implement some of the other activities subject to the availability of the relevant competencies (e.g., agribusiness) within the PMU. The engagement of consultants would be undertaken by the PMU in accordance with the World Bank's Procurement Regulations for IPF Borrowers [dated July 2016, revised November 2017 and August 2018] – "Procurement Regulations".

**ii. Extension:** The project will utilize HP's agricultural research and extension system and existing Government-backed interventions; enter into technical agreements to finance the incremental operational costs of existing delivery agencies subject to the terms of the project's Loan Agreement, and hire consultancy services where complementary non-state services are required.

**iii. Common community infrastructure/ assets:** There would be several types of common community infrastructures that would be created within the cluster like primary storage water tanks, foot bridges and rope ways, etc. The construction/ establishment of these infrastructures would be undertaken by the DPOs.

**iv. Private (group or individual) infrastructure/assets:** It is envisaged that any private irrigation infrastructure and productive assets supported under the project would be provided on a cost share (subsidy) basis, with the individual/group beneficiaries procuring the infrastructure/assets directly. The details of the financial and procurement arrangements would be presented in the Grants Manual.

**iv. Input Support:** Any input support under the project like seeds, fertilizers etc would be procured at the DPO level and distributed based on the GP level demand.
Any input support under the demonstration activities, like seeds, fertilizers etc, would be procured at the DPO level and distributed based on the GP level demand.

### 3.2.23. Professional support for Agriculture and allied activities

This activity will finance the human resource cost/ fee component for professional/ technical and field support staff for the project duration. The staff covered under the activity will comprise of Subject Matter Specialists, Statistical/ Monitoring Assistants and Extension Officers (Social, Agriculture, Veterinary etc).

The details of the same are presented in the following table;

| S. No. | Intuitional support Staff | Number of Staff | | | |
|---|---|---|---|---|---|
| | | O/o* CPD | O/o DPO | O/o APO | Total |
| 1 | Subject Matter Specialist (SMS) | 11 | | | 11 |
| 2 | Statistical Asst/ Monitoring Asst | 3 | 10 | | 13 |
| 3 | Forest Extension Officer | 1 | | 52 | 53 |
| 4 | Agriculture Extn. Officer | | 10 | | 10 |
| 5 | Social Extn. Officer | 1 | | 52 | 53 |
| 6 | Veterinary Extn. Officer | | 10 | | 10 |
| | **Total** | **16** | **30** | **104** | **150** |

***Office of**

## 3.3 Component 3: Institutional Capacity building for Integrated Watershed Management

### 3.3.1. Objectives:

The long-term objectives of this component are two-fold: firstly, to support a more comprehensive and holistic approach to managing the state's water resources while recognizing competing uses within HP and in other states; and, secondly, to facilitate better alignment of institutional mandates for integrated watershed management (IWM) and strengthen the HP Forest Department's (HPFD's) institutional structure and capacity for improved service delivery. In the short term, this component will focus on building the capacity of the HPFD as the key government institution responsible for managing two-thirds of the state's land area and identifying future reforms through institutional assessments.

a. The objective of this component is to build capacity of communities and local government institutions to effectively manage ecosystem in a participatory, transparent, and demand-driven manner.

b. To initiate, support the process of building and strengthening self-reliant, self-managed and sustainable institutions (both local & Govt.) that work for the rural communities. These institutions, including GPs, will provide platforms to manage the natural resources and promote their livelihoods.

c. To nurture and develop competent staff, resource persons, and agencies with required skill and capability set to identify and respond to the needs of the local communities.

d. To develop mechanisms for the project to constantly evolve in servicing the needs of the rural communities through the knowledge management including learning from monitoring & evaluation.

The institutional development component is covered under two sub-components and associated activities as indicated below:

**Subcomponent 3A: Improving the governance structure for integrated watershed management (IWM)**

- Identifying institutional reforms and synergies to support integrated watershed management (IWM) through an IWM institutional assessment.

**Subcomponent 3B: Institutional reform and strengthening of the Himachal Pradesh Forest Department**

- Undertaking a functional review of forest institutions to identify key sector reforms.
- Building the capacity of the HPFD through training programs and implementation of reforms.

### 3.3.2. Subcomponent 3A: Improving the governance structure for integrated watershed management (IWM)

The subcomponent will support an institutional assessment to: (a) identify the institutions that affect water supply, quality, use, and management and their roles, responsibilities, and mandates; (b) conduct a strengths, weaknesses, opportunities and threats analysis of the current institutional framework and highlight any overlaps and/or gaps that undermine IWM; (c) identify opportunities for institutional coordination and synergy; and (d) build consensus on the need for reform and develop the goals and vision for institutional collaboration, a time-bound action plan, and an implementation road map. The results of this assessment are expected to inform the GoHP and other state governments on the necessary reforms to relevant institutions that will result in effective interagency cooperation and, ultimately, IWM. Stronger institutions will lead to improved planning and responsiveness to climate change impacts. This subcomponent will be implemented by a consultancy company specializing in change management.

#### 3.3.2.1. Knowledge Management and Communications:

This subcomponent is to help implement a strategy that identifies specific audiences and develops targeted messages to increase general awareness about the project. The project approach, processes and results to be expected on one hand and the performance and progress on the other hand, have to be constantly communicated to all the stakeholders appropriately and in an appropriate medium. This will also enable all the stakeholders to take informed decisions. It envisages involvement of multiple stakeholders – the target community, community groups, Gram Sabha, people's representatives, line departments, local organizations etc.

Under this sub-component information & education material for awareness about the project, access to information, terms of participation and overall transparency among all the stakeholders will be developed. The materials will be prepared to support both electronic and print media.

The development of project web-site as a larger outreach approach will also be taken up. This component will also document and develop case studies & success stories emerging from the project interventions. As part of maintaining financial transparency and communicating the progress in different component of the project, half yearly and annual reports will be prepared and circulated to key stakeholders.

| **Activity** | **Proposed Quantity** |
|---|---|
| Development of communication strategy | Once (in Second Year) |
| Development of Information& Education Material | Every year (need based) |
| Project web-site development and maintenance | Once (in first year) |
| Development of Case Studies/ Success story | Five each year |
| Half yearly and Annual reports | Once in each year |

#### 3.3.2.2.Printing and Publications:

Once the various materials will be developed as described above, printing & publication of these developed materials like project case studies & success stories, half yearly/ annual

reports, Community Operational Manuals/Reports, PIP, Financial Management guidelines, Environment and Social Management Framework (ESMF),Environment and Social Standards (ESS),technical manuals, information and education material etc. would be undertaken. The printing of these materials in different quantities will be based on the target groups whom these materials will be distributed. Broadly, following types of materials will be printed:

| Materials to be printed | Quantity (Copies per year) |
|---|---|
| Case studies/success story | 500 |
| Annual reports | 50 |
| Community Operation manuals/Reports | 500 |
| Project Implementation Plan (PIP) | 100 |
| Financial Management Guidelines | 50 |
| Environment & Social Safeguards guidelines | 500 |
| Technical manual | 100 |
| Misc. Information & Education Materials | 100 |

### 3.3.2.3. Project Outreach and Collaboration:

**a. Seminar & conference participation and organization:**

The objective is to support the application of innovative, science-based knowledge, tools and approaches to improvement in ecosystem planning and implementations, promotion of climate smart agriculture, climate change and hydrology based on identified needs of the State, communities and farmers. The project will, therefore, promote cross-learning opportunities for the larger benefits of the project. For this, two major types of activities will be undertaken:

- Participation of project staffs and other members of the stakeholders in national and international events
- Organization of national and /or international conferences, seminars and workshops.

  However, the activities shall be restricted to Project level interventions only. Due diligence a shall be undertaken before such programs are organised

**b. Community awards and recognition:**

In order to bring healthy competition amongst the implementing agencies, mainly the Gram Panchayats, every year project will reward better performed Panchayats. Project will make a jury / committee to shortlist and identify the GPs for rewards. Following will be the reward systems:

| Category | Description | Award Money (in Rs.) |
|---|---|---|
| I- State level award | Three best GPs in the State level | 1st: 5 lakh<br>2nd: 3 lakh<br>3rd: 2 lakh |
| II- District level award | 10 best GPs in the District level | 1 lakh each |

The details of the activity have been described in the COM

### 3.3.3. Subcomponent 3B: Institutional reform and strengthening of the Himachal Pradesh Forest Department

- Undertaking a functional review of forest institutions to identify key sector reforms.
- Building the capacity of the HPFD through training programs and implementation of reforms

#### 3.3.3.1. Consultancies:

Project will undertake different studies and development of project supporting systems, through external agencies (consultancies). Broadly following studies will be undertaken:

1. **Functional review of Forestry Institutions**- will produce a vision, goal and time bound action plan for institutional reform that is expected to inform institutional reforms in HP. These reforms may include inter alia;
    - Development and implementation of a comprehensive HPFD IT and knowledge strategy that integrates all relevant applications on a common geospatial platform and allows for watershed-level planning, including the development and implementation of a comprehensive, GIS-based monitoring and evaluation (M&E) system.
    - The establishment of a centralized HPFD staff performance monitoring system
    - The development of regulatory and management standards for pastures.
2. **Change Management in the function of Integrated Watershed Management (IWM) with the convening power of HPFD.** This study would be based upon the findings and the results obtain for hydrological monitoring consultancy under in Subcomponent 1A: Improved planning for participatory and sustainable land and water management. This study will :
    - Identify the institutions that affect water supply, quality, use, and management and their roles, responsibilities, and mandates;
    - Conduct SWOT analysis of the current institutional framework and highlight any overlaps and/or gaps that undermine IWM;
    - Identify opportunities for institutional coordination and synergy; and
    - Recommend reforms and develop the goals and vision for institutional collaboration, a time-bound action plan, and an implementation road map.

    The results of this assessment are expected to inform the GoHP on the necessary reforms to relevant institutions that will result in effective inter departmental cooperation and, ultimately, IWM.

3. **Training Need Assessment (TNA) including development and delivery of training modules.** The objectives of the study are

    - To conduct training need assessment of project staff along with community members that will participate in project implementation
    - Develop a comprehensive training plan.

**4. Project Management Information Management Systems (PMIS);**

The overall objective of this assignment is to design, develop, deploy, implement and maintain an on-line, web-based, modular and scalable M&E/PMIS [mobile compatible, disabled and handicap friendly] for use of multiple key stakeholders using a development technology that is easy, secure, allows future hosting over government cloud servers (NIC) and is transferrable with knowledge and source code, as well as to provide technical support to the PMU, HPFD to monitor and manage the IDP project.

Broadly, this also includes the following activities:

- Design the MIS support system, i.e., the M&E indicators, targets, questionnaires, and protocols at all levels of the project (PMU, HPFD; DPO; APO; community/farmer level);
- Provide training to project staff at all levels on the PMIS and MIS support system;
- Integrate PMIS with GIS applications for Geo-tagging of project activities (geospatial Meta data) and geospatial analysis of data generated during the implementation process to track implementation progress; and
- Updation/upgradation of the MIS architecture as a result of any changes in project components or implementation arrangements by the IDP in the near future.

**5. Process Monitoring**

Process monitoring is a concurrent evaluation implemented by an external agency to provide independent objective feedback on the quality of implementation, selected intermediate outcomes, lessons learned and challenges and recommendations for improvement. The intention is to provide insights and recommendations for the PMU and the district teams to improve strategic and operational decisions, mid-course corrections and adaptations to improve overall project effectiveness.

### 3.3.3.2. Training and Capacity Building

The capacity building strategy and action plan of the project aim to build the competence and capability of target village communities including the poor, their organizations and the GP so as to collectively enable them to achieve the project objectives. The project will also meet the capacity needs of project management and staff at various levels - PMU, DPOs and APOs. The capacity building activities have also been designed to build the capacities of various service providers including technical appraisers, para-professionals etc.

Specifically, the objectives of the capacity building activities are:

- To enhance the knowledge base and skills, and influence the attitudes of all project stakeholders at different levels of the project implementation, so that they are able to work as efficient teams and perform in coordinated manner.

- To build-up the capacity of project staff for implementation of various activities involving participatory approaches by organizing trainings, workshops and exposure visit, locally and nationally & outside the country.

- Under this sub-component capacity building will take place for community representatives and community organizations in project related activities for enhancing their technical skills on various aspects through training, workshop, exposure visit, demonstration etc. In addition to community, the capacity of project staffs will also be enhanced by various training and other capacity building programs.

Broadly, following types of capacity building approaches will be followed:

- Sensitization Programs
- Induction Programs
- Orientation Programs
- Thematic Training Programs
- Skill Building Programs
- Exposure visits

Following capacity building tools will be adopted:

- Workshops and field visits
- Thematic Training program- classroom and field based
- Exposure visits

**a. Capacity Building Needs:**

Although project will undertake a separate training need assessment (TNA) for various stakeholders engaged in component 1 and 2, a tentative list of capacity building needs of the various staff and project partners is given as follows:

**i. Technical Staff**

- Analysis of Log frame, Project orientation for Project Staff
- Investment Planning
- Training on COM
- Need based training

**ii. Institutional Support Staff:**

- Analysis of Log frame; project orientation
- Training on community engagement
- Development of GP Development Plans
- User Groups/ PG formation and documentation
- IFMS /Project monitoring and reporting
- Usage of GPS
- Environment and social management framework
- Procurement and financial management
- Project based record keeping
- Nursery Management and logistics
- Need based training

**iii. GP Members/ Farmers:**

- Project orientation
- Sub-project planning
- Self-monitoring and evaluation - social audit
- Need based training on Comp 1 &2

**iv. PG Representatives:**

- PG/FPO formation, governance, and record keeping
- Development of agri-business plans and convergence with other programmes
- Need based training

**b. Exposure Visits:**

In addition to above, key staffs and stakeholders will be sent to outside project area as exposure visits. Following three types of exposure visits will be undertaken:

- Exposure visits to other project in State
- National Exposure visits
- International exposure visits

**c. Development of Training Infrastructure:**

In order to facilitate different training and other capacity building programs under project, following basic training infrastructures will be created:

- Construction of training/conference Hall
- Construction of dining Hall for trainers
- Renovation/Additional/Alternation of existing buildings for training

**d. Staffing for Capacity Building:**

The project will deploy experienced capacity building specialists at various levels to coordinate and monitor the training and capacity building activities.

### 3.4. Component 4: Project Management

#### 3.4.1. Objectives of the Component:

The objective of project management component is to facilitate overall coordination, implementation, and management of the project at State Project Management Unit (SPMU), District Project Management Unit (DPMU) and Assistant Project Management Unit (APMU) levels.

The project implementation relies on a management and governance structure from the State down to the Gram Panchayat level, with clear-cut roles and responsibilities for staff members at each level. All staff positions will be filled during the pendency of the project with qualified people. This component will support the strengthening of the institutional capacity and knowledge management of the project implementing entity SPMU for the implementation and management of the project. This would include the establishment of the SPMU and 10 DPOs, and 10 APOs for supervision of project activities etc. The implementation arrangements will cover the details regarding financial management, disbursement and procurement, which are covered in subsequent chapters.

#### 3.4.2. Components Details:

This component consists of the following activities:

| | |
|---|---|
| 1 | Monitoring and Evaluation |
| 2 | Implementation of Environmental and Social Framework |
| 3 | Staffing |
| 4 | Other Operating Costs |

#### 3.4.2.1. Monitoring and Evaluation:

Details on the project's M&E arrangements are provided in Chapter 12 of this PIP.

#### 3.4.2.2. Environmental and Social Framework Implementation:

The detailed Environmental and Social Framework/Plans are provided in Chapter 11 of this PIP.

#### 3.4.2.3. Staffing

This component includes Salary of technical /ministerial staff and operating expenses respectively. The following activities will be covered under this component;

a. Salary of technical staff of PMU, DPOs and APOs;
b. Salary of ministerial and support staff of PMU, DPOs and APOs;
c. Operating Cost:- This will include the all the recurring expenses like electricity/Stationery/Postage/Printing and Publication, Budgeting, Preparation of annual work plan(AWP), Contract management, Financial management, maintenance of official and residential buildings, running and maintenance of vehicles, and incremental operating costs of the Project etc.

## Detail of Administrative Staff

| Staff Details | Number of Staff | | | |
|---|---|---|---|---|
| | O/o CPD | O/o DPO | O/o APO | Total |
| **SPMU** | | | | |
| CPD (PCCF) | 1 | | | 1 |
| ED (CF/ Sr. DCF) | 1 | | | 1 |
| DD Admin (HPFS - DFO/ACF) | 1 | | | 1 |
| Asst Director (HPFS - ACF) | 1 | | | 1 |
| DD (Planning - ACF) | 1 | | | 1 |
| Deputy Controller (F&A - ACF) | 1 | | | 1 |
| **DPMU** | | | | |
| DPO (Sr. HPFS - DFO) | | 10 | | 10 |
| **APMU** | | | | |
| **Technical Staff** | | | 26 | |

## Details of Field Technical Staff

| Staff Details | Number of Staff | | | |
|---|---|---|---|---|
| | O/o CPD | O/o DPO | O/o APO | Total |
| Civil Engineer (Executive Engineer) | 1 | | | 1 |
| Asst. Engineer – Civil | 1 | | | 1 |
| Asst Project Officer (FRO/BO) | 1 | 0 | 26 | 27 |
| JE/ Draftsman/ Surveyor | 0 | 10 | | 10 |
| Computer/Data Entry Operator | 6 | 10 | 26 | 42 |
| **Total** | 9 | **20** | **52** | **81** |

## Details of Support Staff

| Staff Details | Number of Staff | | | |
|---|---|---|---|---|
| | O/o CPD | O/o DPO | O/o APO | Total |
| Supdt. Gr. I | 1 | | | 1 |
| Supdt. Gr. II | 1 | 10 | | 11 |
| Sr. Accountant | 1 | | | 1 |
| Sr. Assistant | 4 | 10 | | 14 |
| Junior Assistant | 4 | 10 | | 14 |
| PA cum computer operator | 2 | | | 2 |
| Graphic designer /Photographer | 1 | | | 1 |
| Driver | 5 | 10 | | 15 |
| Workman/ peon/ Chaukidar | 18 | 52 | 52 | 122 |
| Sweeper | 1 | | | 1 |
| **Total** | **38** | **92** | **52** | **182** |

**Details of Institutional Support Staff**

| Staff Details | Number of Staff | | | |
|---|---|---|---|---|
| | O/o CPD | O/o DPO | O/o APO | Total |
| Subject Matter Specialist (SMS) | 11 | | | 11 |
| Statistical Asst/ Monitoring Asst | 3 | 10 | | 13 |
| Forest Extension Officer | 1 | | 52 | 53 |
| Agriculture Extn. Officer | | 10 | | 10 |
| Social Extn. Officer | 1 | | 52 | 53 |
| Veterinary Extn. Officer | | 10 | | 10 |
| **Total** | **16** | **30** | **104** | **150** |

### 3.4.2.4. Other Operating Costs:

- Construction/renovation of project infrastructure.
- Other project operating costs.

# 4. Institutional Model & Implementation Arrangements

## 4.1 Institutional Structure

The institutional arrangement of the project flows from the defined goals, results and outcomes of the project. The key aspects of such arrangement include the dedicated administrative set-up with efficient fund-flowing arrangements. For IDP, the project delivery relies on a structure that will have implementing and governance units at different levels i.e. from State to Gram Panchayat level, with clear institutional roles and responsibilities.

The IDP will be implemented through a dedicated PMU established under HP Forest Department (HPFD) as the nodal project implementing agency. Thus, at State level, project money will be routed through a separate State budget head created under HPFD. While it restricts the flexibility and autonomy in operational and financial decision-making process, it provides a strong institutional back-up of existing government set-up. More importantly, being implemented through Forest Department, the ownership of the project among Govt. officials will be strong.

For effective delivery of the project activities, there will be three tier project implementing units- the state, district and sub-district (or cluster level). Each of these units will have separate roles and responsibilities and will be supported by a team of technical and managerial staffs.

HPFD being main executing agency would first receive funds from the state government for IDP through annual budget provisions, and will be committed to support project implementation through various offices located at State, districts and sub-district (or Tehsil) levels as per given administrative structure of the project. Accordingly, while at state level there will be one Project Management Unit (PMU), ten District Project Office (DPO) and 26 sub-district level Assistant Project Office (APO) (Table 4.1).

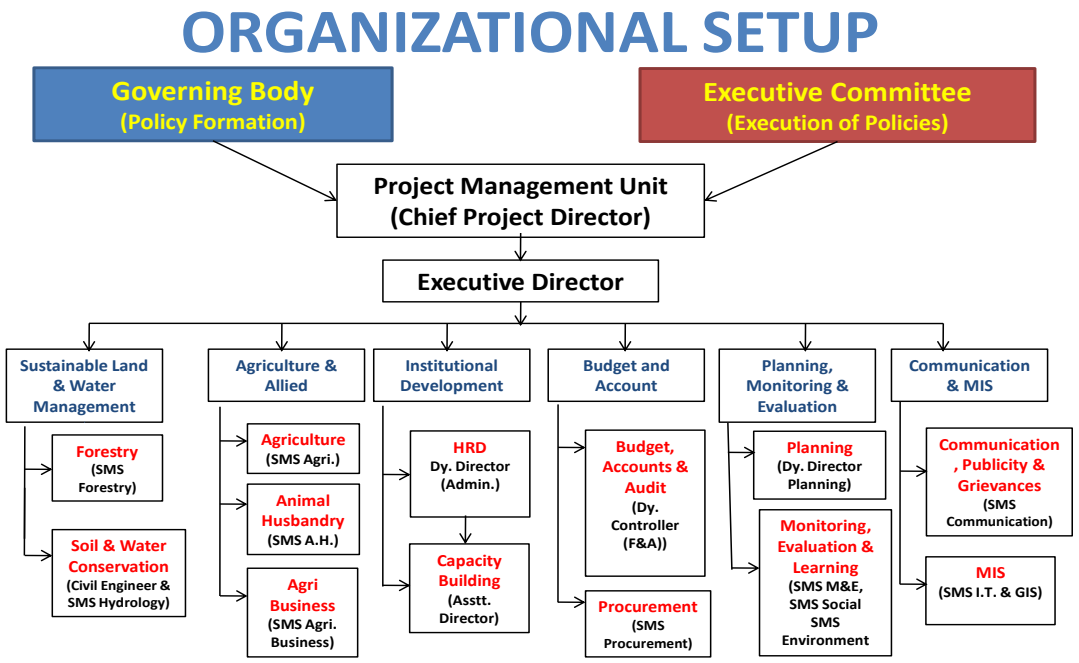
**Table 4.1: Number of Offices to be created in the Project**

| Office Name | Level | No. of Units |
|---|---|---|
| PMU | State | 1 |
| DPO | District | 10 |
| APO | Sub-District (Tehsil) | 26 |

## 4.2. Institutional Arrangements at State Level

For techno-managerial support and project execution at State level, one Project Management Unit (PMU) exists. The PMU will be responsible in facilitating day to day planning, coordination and implementation of different project activities with the help of district and sub-district level project implementing offices. The organogram of the PMU is presented below (Fig. 4.1). The functioning of PMU will be monitored and guided by two committees- the Executive Committee (EC) and Governing Body (GB). Both have distinct composition and roles.

**Fig.4.1**




There will be four committees for smooth functioning of Integrated Development Project for Source Sustainability and Climate Resilient Rain-fed Agriculture (IDP)

**A. Governing Council:**

**Composition of the Governing Council**

| **Table 4.2:** | | |
|---|---|---|
| i. | Chief Minister, Himachal Pradesh | President |
| ii. | Forest Minister, Himachal Pradesh | Vice President |
| iii. | Chief Secretary, GoHP | Member |
| iv. | ACS ( Forests ) GoHP | Member Secretary |
| v. | ACS ( Finance) GoHP | Member |
| vi. | ACS (Agri.) GoHP | Member |
| vii. | ACS(Hort.) GoHP | Member |
| viii. | ACS (A.H.) GoHP | Member |
| ix. | Pr. Secretary I.P.H. GoHP | Member |
| x. | Pr. Advisor (Planning ) GoHP | Member |
| xi. | Vice Chancellor, CSK HP Krishi Vishvavidalaya, Palampur | Member |
| xii. | Vice Chancellor, Dr. Y.S.Parmar UHF, Nauni, Solan,HP | Member |
| xiii. | Pr. Chief Conservator of Forests ( HoFF) HP, Shimla | Member |
| xiv. | Engineer-in-Chief, I.P.H. , HP | Member |
| xv. | Director (Agri.) HP, Shimla | Member |
| xvi. | Director (Hort.) HP, Shimla | Member |
| xvii. | Director (A.H.) HP, Shimla | Member |
| xviii. | Director, R.D. and Panchayat Raj, HP, Shimla | Member |
| xix. | Chief Project Director, IDP Solan | Member |

| | | |
|---|---|---|
| xx. | Project Directors of Externally Aided Projects of Forest Dept. | Members |
| xxi. | CCF (Projects) o/o Pr.CCF(HoFF), HP, Shimla | Member |
| xxii. | Executive Director, IDP Solan | Member |
| xxiii. | Director, MOA, GoI | Member |

There will be 11 non official members to be nominated by the HP Government depending upon their experience/exposure in Watershed Management and Rural Livelihood from the Project area.

**TENURE OF NOMINATED MEMBERS**

The terms of non-official members shall be two years.

**POWERS AND FUNCTIONS OF THE GOVERNING COUNCIL**

The Governing council shall have the following powers and functions:-

i) To review the progress of Integrated Development Project.
ii) To support policy and institution development to harmonize watershed development and natural resource management projects and policy in the state of Himachal Pradesh in accordance with the best practices.
iii) To consider and approve the annual report prepared by the Executive Committee.
iv) To secure effective coordination between different departments and other Government/ Government aided institutions for the benefit of achievements of the objectives of IDP.

**B. EXECUTIVE COMMITTEE:**

**Composition of the Executive Committee**

| **Table 4.3** | | |
|---|---|---|
| i. | ACS (Forests) to the Govt. of HP | Chairman |
| ii. | Secretary (Finance) to the Govt. of HP | Member |
| iii. | Advisor Planning to the Govt. of HP | Member |
| iv. | PCCF (HoFF) Himachal Pradesh | Member |
| v. | Engineer-in-Chief, I.P.H., HP | Member |
| vi. | Director, Dept. of Agriculture, HP | Member |
| vii. | Director, Dept. of Animal Husbandry, HP | Member |
| viii. | Director, Dept. of Rural Development and Panchayati Raj, HP | Member |
| ix. | CCF (Projects), Shimla | Member |
| x. | Chief Project Director, IDP, Solan | Member |
| xi. | Executive Director, IDP, Solan | Member |

**FUNCTIONS AND POWERS OF THE EXECUTIVE COMMITTEE:**

i) It shall be the responsibility of the Executive Committee to achieve the objective of IDP and to discharge all its functions.
ii) The EC shall have under its control the management of all the affairs of the IDP.
iii) The EC shall take all steps required for the successful implementation of the project.
iv) The EC shall consider and approve the Annual Plan of Operation of Integrated Development Project.

v) It shall consider and approve the Annual Budget of IDP.
vi) It shall sort out problems in the implementation of the project.
vii) It shall ensure co-ordination with the line departments for the project activities.
viii) EC shall control and review the different activities of the project.
ix) It shall review the implementation of the activities under the project.
x) It shall perform any other works assigned by the Government.
xi) The EC may delegate to the Chairperson, Chief Project Director or any of its members and/or to a Committee/Group or any other officer of the Project such administrative and financial powers and impose such duties as it deems proper and also duties that are to be exercised or discharged in furtherance of the objectives of the project.

## C. FINANCE COMMITTEE

The Finance Committee shall consist of the following

| | |
|---|---|
| i) ACS (Forests ), GoHP | Chairperson |
| ii) ACS (Finance), GoHP | Member |
| iii) Pr. Chief Conservator of Forests (HoFF) | Member |
| iv) Executive Director, IDP, Solan | Member |
| v) Chief Project Director, IDP, Solan | Member Secretary |

## FUNCTIONS OF FINANCE COMMITTEE:

The Finance Committee shall have:

i) Full powers to accord financial sanctions for the purchase of various inputs, goods, equipments, services etc. required for execution of Integrated Development Project.
ii) Full powers for financial sanction for roads, buildings and all other works of Integrated Development Project.
iii) Full powers to accord financial sanctions for all other expenditure required for implementing the Integrated Development Project.

The Finance Committee may delegate its financial powers or part thereof to the Chairperson, Chief Project Director or its members and/or to a committee/group or any other officer of the Project as it deems fit.

## D. DISTRICT LEVEL COORDINATION COMMITTEE (DLCC):

The District Level Coordination Committee shall be constituted for such district covered by Integrated Development Project for Source Sustainability and Climate Resilient Rain-fed Agriculture, Himachal Pradesh. There shall be one DLCC in each of the following districts - Sirmour, Solan, Shimla, Bilaspur, Kullu, Mandi, Hamirpur and Kangra, Una and Chamba. There will be at least two meetings in a year and committee will review the progress and any issues related to convergence of various schemes of different department.

**Composition of District Level Coordination Committee**

| **Table 4.4:** | | |
|---|---|---|
| **i** | Deputy Commissioner | Chairman |
| **ii** | Divisional Forest Officers | Members |
| **iii** | Executive Engineers, IPH | Members |
| **iv** | Deputy Director Agriculture | Member |
| **v** | Deputy Director Horticulture | Member |
| **vi** | Deputy Director Animal Husbandry | Member |
| **vii** | District Panchayat Officer | Member |
| **viii** | Project Officer, DRDA | Member |
| **ix** | Lead Bank Officer | Member |
| **x** | District Project Officer, IDP | Member Secretary |

There will be four non official members (at least 50% women) in the committee to be nominated by the Chief Project Director from the project area of concerned district.

**TENURE OF NOMINATED MEMBERS:**

The terms of non-official members shall be two years.

**FUNCTIONS OF THE DISTRICT LEVEL COORDINATION COMMITTEE:**

The District Coordination Committee shall have the following functions:

i) To review the progress of implementation of IDP in the district.

ii) To provide platform for convergence, coordination and experience sharing for other natural resource management projects and Line Departments of the district.

**4.3. Structure of PMU**

PMU would be headed by the Chief Project Director (CPD) of the rank of PCCF/ APCCF and would be the Member Secretary of EC, and also serve as Member in Governing Council. CPD will be responsible for all the operations at the state level (with the powers and responsibilities equivalent to a Head of Department) and operate under the guidance of Executive Committee and Finance Committee for day-to-day activities and the Governing Council for policy decisions. CPD will also administratively accountable to the PCCF.CPD will get administrative, financial and program related support from Executive Director (ED).

For the purpose of project execution, PMU will have six supporting units with adequate number of subject matter specialist (SMS) and technical and managerial staffs (Fig. 1).

These units include:

- Sustainable land and water management unit,
- Agriculture and allied sector management unit
- Institutional development and support unit
- Account and procurement unit
- Planning, monitoring and evaluation unit
- Communication and MIS unit

The SMS will be responsible to providing technical support to implementation of project components. While the SMS in sustainable land and water management and agriculture and allied sector management units will be focusing on technical issues of the components, other support units will be cross-cutting. For administrative support, two Deputy Directors (DD) namely Administration and Planning and one Deputy Controller (Finance) will assist ED and CPD.

In overall term, following will be the PMU staff composition (**Table 4.5):**

| **Table 4.5:** | | | |
|---|---|---|---|
| **#** | **Position** | **Source & Rank** | **Mode of Induction** |
| 1 | Chief Project Director (CPD) | HPFD, APCCF | Deputation |
| 2 | Executive Director (ED) | HPFD, CCF | Deputation |
| 3 | Dy. Director, Admin | HPFD, DCF | Deputation |
| 4 | Dy. Director, Planning | HPFD, DCF | Deputation |
| 5 | Dy. Controller, Finance | | Deputation |
| 6 | Asst. Director, Capacity Building | HPFD, ACF | Deputation |
| 7 | SMS, Forestry | | Deputation/Open Market |
| 8 | Civil Engineer – X En. | | Deputation/Open Market |
| 9 | SMS, Hydrology | | Deputation/Open Market |
| 10 | Civil Engineer - AE | | Deputation/Open Market |
| 11 | SMS, Agriculture | | Deputation/Open Market |
| 12 | SMS, Animal Husbandry | | Deputation/Open Market |
| 13 | SMS, Agri Business | | Deputation/Open Market |
| 14 | SMS, Procurement | | Deputation/Open Market |
| 15 | SMS, M & E | | Deputation/Open Market |
| 16 | SMS, Social | | Deputation/Open Market |
| 17 | SMS, Environment | | Deputation/Open Market |
| 18 | SMS, Communication | | Deputation/Open Market |
| 19 | SMS, IT | | Deputation/Open Market |

Responsibilities for the key staff positions in the PMU are given in **Table 4.6.**

| Table 4.6: | | |
|---|---|---|
| # | Position | Key Responsibilities |
| General Administration | | |
| 1 | CPD | ▪ Will act as HOD for IDP.<br>▪ Responsible for implementation of the Project.<br>▪ Exercise all technical, administrative, financial and disciplinary authority powers as per delegation.<br>▪ Define the duties of the officers and staff of the project.<br>▪ Coordinate and exercise general supervision over the activities of the project including its district offices.<br>▪ Conduct meetings of the Governing Council, Executive Committee and Finance Committee of IDP and keep records of the proceeding of these meetings.<br>▪ Discharge such other functions as may be or may already have been assigned to him by the HP Govt., Governing Council/ Executive Committee/Finance committee in the furtherance of the objectives of the project.<br>▪ Oversee, guide and supervise project implementation.<br>▪ Co-ordination with World Bank, DEA, State Govt. and State level stakeholders.<br>▪ Advocacy and strategic support |

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| | | ▪ Convergence, PR and networking.<br>▪ Chairman of the House Allotment Committee of the IDP Directorate. |
| 2 | ED | ▪ Institutional arrangements<br>▪ PRIs issues<br>▪ Will be act as Head of Office for IDP Directorate.<br>▪ Will assist the CPD in day to day working.<br>▪ Controlling officer for the purpose of Medical Reimbursement and Travelling Allowance in respect of all categories except CPD.<br>▪ Will also be the controlling officer for administrative issues for Class-II and equivalent of the IDP.<br>▪ Responsible for all financial, administrative and technical matters with in the vested and delegated powers.<br>▪ Convergence and networking with respective line department and universities.<br>▪ Estate Officer for the Directorate.<br>▪ Will look after the Bio-Carbon Sub-Project.<br>▪ Any other duty assigns by CPD. |
| Sustainable land and water management unit | | |
| 3 | SMS, Forestry | ▪ To provide technical advice and help the CPD and the ED for planning, designing and implementation strategies for Forestry sector in the Project.<br>▪ To prepare and finalisation of chapter pertaining to forestry activities in the Project Implementation Plan (PIP).<br>▪ To scrutinise the Annual Plan of Operation of the forestry sector.<br>▪ To help the ED/Budget & Account Section to prepare the APOs pertaining to the Forestry Sector.<br>▪ To monitor the progress of Forestry activities through MIS system as well as physically.<br>▪ To prepare and keep record of information pertaining to the Forestry sector as required by the World Bank, DEA and other line departments.<br>▪ To attend the queries from the field offices regarding forestry activities and to provide technical guidelines.<br>▪ To advise CPD/ED in convergence and networking with the State Forest Department, Forestry Universities and other similar organizations.<br>▪ Any other duties assigned by the CPD and ED of the Project |
| 4 | SMS, Hydrology | ▪ To provide technical advice and help the Chief Project Director and the Executive Director for planning, designing and implementation strategies in the matter of Hydrology.<br>▪ To help the field functionaries to select/search hydro/geologically sites regarding the possibilities of water resources.<br>▪ To provide technical advice for planning and collection of surface/ groundwater water and monitor data to support projects and programs.<br>▪ Will conduct hydrological assessment of clusters.<br>▪ To Process/ obtain meteorological and hydrological data in the Project.<br>▪ To advise and help the field staff to prepare various maps and figures including: contour maps of groundwater elevations, geologic structure, cross-sections, water quality, and other hydro-geological data.<br>▪ Will be responsible to provide technical assistance in connection with |

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| | | carrying out of hydrological investigation relating to the tapping of water resources, sub- surface water resource through construction of suitable structures.<br>▪ He/ She will be responsible for various scientific studies related to water resource estimation, availability and impacts.<br>▪ Any other duty assigned by the Chief Project Director and Executive Director. |
| 5 | Civil Engineer | ▪ Facilitate in developing Climate resilient Water Infrastructure.<br>▪ Technical scrutiny of works/estimates such as foot bridges/ ropeways, Water Harvesting Structures, Construction, repair & maintenance of buildings, soil and water conservation as per the delegated powers.<br>▪ Promote and strategize water use efficiency in project areas<br>▪ Provide guidance to Field functionaries in selection of sites for water harvesting, soil conservation and rural infrastructure works.<br>▪ Technical scrutiny of all estimates of buildings in the Project.<br>▪ Supervision and quality control of the civil works.<br>▪ Trainings pertaining to civil works.<br>▪ Convergence and networking with respective line department, universities and resource organizations.<br>▪ Responsible for planning and designing strategies for irrigation along with other team members.<br>▪ Sectoral activity wise analysis of interventions.<br>▪ Any other duties assigned by the CPD and ED. |
| Agriculture and allied sector management unit | | |
| 6 | SMS, Agriculture | ▪ Responsible for planning, designing and implementation strategies for Agriculture sector including treatment of arable land in the Project.<br>▪ Promotion and implementation of Climate Smart Agriculture Practices and practices of Rain-fed Agriculture systems.<br>▪ Promotion of water use efficiency at farm level.<br>▪ Formulate, strategize and recommend package of practices especially in relation to Climate Resilient Rain-fed Agriculture.<br>▪ Formulate, strategize and recommend package of practices in relation to crop diversification, organic farming, Zero Budget Natural Farming (ZBNF).<br>▪ Convergence and networking with respective line departments and State Agriculture Universities (SAUs).<br>▪ To guide the Project implementation units on capacity building of staff and communities in respect to Agriculture.<br>▪ Facilitate and promote crop-based subprojects.<br>▪ Strategize, recommend and promote specific postharvest technology options/agri. processing in Agriculture sector.<br>▪ Assist in Sector specific Monitoring and Evaluation (M&E) of various Project activities.<br>▪ To carry out sample crop cutting experiments along with cost benefit analysis of various Agri. based activities.<br>▪ Any other duty assigned by the Chief Project Director and Executive Director. |
| 7 | SMS, Animal Husbandry | ▪ Responsible for planning, designing and implementation strategies for Animal Husbandry/Livestock sectors.<br>▪ Promotion of fodder augmentation and conservation programs in the Project.<br>▪ Planning, designing and implementation of Tribal/Transhumant Action Plan in the Project. |

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| | | ▪ Promotion of Climate resilient Animal Husbandry practices.<br>▪ Convergence and networking with respective line departments and State Agriculture Universities (SAUs).<br>▪ Strategize, recommend and promote specific post-harvest technology options in Animal Husbandry sector.<br>▪ Facilitate and promote livestock-based subprojects.<br>▪ Identify and develop different supply chain models for livestock-based institutions in the Project area in association with other team members.<br>▪ Assist in Sector specific Monitoring and Evaluation (M&E) of various Project activities.<br>▪ Provide inputs on value addition/ processing/ marketing under AH sector.<br>▪ Any other duties assigned by the ED/ CPD. |
| 8 | SMS, Agribusiness | ▪ Identification of investable agri-business opportunities and strengthening the enterprise development.<br>▪ Develop, review, update, and oversee the implementation of agribusiness strategy and coordination with Project staff, various agribusiness supports and other agencies contracted in the Project, government institutions and private agencies.<br>▪ Design/supervision of value chain scoping study and cluster identification study.<br>▪ Support the promotion of new enterprises Clusters/ Agribusiness agency/ Federation/ Farmer Producer Organizations by streamlining procedures for set-up, operation & scale up of agribusiness in the Project.<br>Institutional support:<br>▪ Insight on registration of organizations under various acts e.g. Societies Act, Co-operative Acts, Company Act, GST etc. and licensees for food sale including other mandatory/ statutory requirements.<br>▪ Provide analysis of the legal status of these organizations, various Govt. schemes supporting activities of such organization, subsidies & grants, audit etc.<br>▪ Impart information and strategize on linkages with financial institutions. (training them how to approach bank, seeking loans, working capital & managing organization accounts, etc.)<br>▪ Roadmap for enhancing the economies of scales (marketable volumes).<br>Technical & Implementation Support:<br>▪ Help the participating Community Based Organization (CBOs) (e.g., PGs and POs) to prepare Business and Financial Management Plans of their organization. Enable and build the organization capacities to implement these plans at their own.<br>▪ To train/support the CBOs for value addition, improved designs, quality and marketing strategy etc. for meeting market demands.<br>Marketing Support<br>▪ Augmenting capacities of CBOs/Clusters/Federations/ Agribusiness agency for transformation from un-organized to organized markets including e-markets and establish their linkages with marketing Institutions.<br>▪ Design and organize the investor outreach programs, training modules, development of capacity building modules for enterprises and entrepreneurs. |

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| | | ▪ SMS Agribusiness would act as interface between the entrepreneurs/ CBOs /Clusters /Federations/ Agribusiness agency and the department and other project staff. The Specialist in coordination with the firms hired would facilitate the formation, registration and formation of governing body of the Producer organization and setting up and realization of goals of these companies.<br>▪ Monitor the progress of the Agribusinesses and scrutinize the reports/proposals in coordination with the Project.<br>▪ Facilitate Project and firms hired by the Project for the development of implementation plan of Agribusinesses and review the same.<br>▪ Any other duty assigned by the ED/CPD. |
| Institutional development and support unit | | |
| 9 | Dy. Director, Admin | ▪ Will assist Executive Director in administrative matters.<br>▪ Office and personnel management.<br>▪ Leave sanctioning authority in respect of Class-II,III &IV of the project Directorate.<br>▪ HRD, trainings and exposure visits etc.<br>▪ Convergence and networking with respective line department and universities.<br>▪ Any other duties assigned by the ED/CPD. |
| 10 | Asst. Director, Capacity Building | ▪ Will assist Dy. Director (Admin.) for discharge of duties.<br>▪ Will coordinate trainings, workshops and exposure visits etc. at project Directorate level.<br>▪ Will assists in monitoring of project activities in the field.<br>▪ Any other duties assigned by the ED/CPD |
| Account and procurement unit | | |
| 11 | Dy. Controller, Finance &Account | ▪ Financial planning for the implementation of the Project.<br>▪ Preparing Annual Plan of Operations (APOs) and Budget estimates.<br>▪ Formulation/ compilation of Physical & Financial Progress reports.<br>▪ Preparing Internal Unaudited Financial Reports- IUFRs to be submitted to the World Bank.<br>▪ Preparing Quarterly expenditure statements for reimbursement claims from the World Bank.<br>▪ Monitoring expenditure and receipt statements of the Project & Reconciliation of accounts with AG.<br>▪ Coordinate for internal audit of the Project.<br>▪ Preparation of replies of audit paras and their settlement.<br>▪ To render advice pertaining to the service matters of the different categories of employees in the Project.<br>▪ To ensure accordance of financial sanctions by the competent authority in accordance with the financial rules and regulations of the State.<br>▪ To conduct/assist in enquires relating to financial matters pertaining to the Project.<br>▪ Any other duty assigned by the ED/CPD. |
| 12 | SMS, Procurement | ▪ Assist to put in place proper procurement arrangements in the Project as per Project Implementation Plan (PIP).<br>▪ Prepare periodic procurement plan(s) for the Project on the basis of the inputs as desired by the competent authority.<br>▪ Prioritize the urgent procurement and package the procurement in such a way that it ensures optimum competition, economy and efficiency.<br>▪ Upload the Procurement Plan(s) on STEP (Systematic Tracking of Exchanges in Procurement) and coordinate with the Project |

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| | | authorities/ World Bank in finalizing the plan.<br>▪ Regular monitoring and updating of the Procurement plan(s) as per need and progress.<br>▪ Coordinate for publication of the procurement plan on the relevant websites.<br>▪ Maintain the procurement related records and documentations systematically for audit/ review by the World Bank as well as Controller of Accounts and Audit.<br>▪ Provide procurement related reports/updates to the concerned authority as and when required.<br>▪ Handle the procurement related complaints, if any, received by the Cell as per the agreed procedure of the World Bank and Govt. of Himachal Pradesh.<br>▪ Coordinate with the Suppliers, Contractors etc. concerned with the required procurement.<br>▪ Monitor the procurement at the Project Management Unit (PMU) level.<br>▪ Provide training on procurement to different stake holders of the Project.<br>▪ Support and facilitate the Project in any and all procurement activities.<br>▪ Any other duty assigned by the Chief Project Director and Executive Director.<br>▪ Procurement of Goods, Works and Non Consulting Services:<br>▪ Assist the Project authorities in finalizing the technical specifications of the goods/works to be procured based on the standard bidding documents agreed with the World Bank/ Govt. of HP.<br>▪ Assist in preparing the bid document for various packages contained in the procurement plan as per agreed timelines.<br>▪ Co-ordinate with the Project authorities/World Bank for obtaining "No Objection" for the technical specifications and the bid document.<br>▪ After finalization of the bid document, issue the advertisement in newspapers and handle the selling of the bid documents to the interested bidders.<br>▪ Coordinate the pre-bid conference, if proposed for the package. Help in preparing the Minutes of pre-bid conference and circulate the same to all the bidders who have purchased the bid documents.<br>▪ Prepare addendum to the bid document, if required.<br>▪ Arrange the reply of queries, if received from potential bidders before the deadline for submission of bids.<br>▪ Receive the bids within the agreed deadline, and facilitate the opening of the bids as per the time indicated in the bid document.<br>▪ Coordinate with department/ Project authorities in the technical and commercial evaluation of the bids.<br>▪ Facilitate in the bid evaluation process and obtain the "No Objection" if required from the concerned authority.<br>▪ Facilitate to prepare and issue the contract document to the successful bidder and provide the feedback to unsuccessful suppliers, if required.<br>▪ Publish the contract award notice.<br>▪ Coordinate the pre-shipment and post-shipment inspections, if required.<br>▪ Monitor the contract management including timely supply of the goods, release of payment, issuing contract amendments, inventory |

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| | | management etc.<br>▪ Procurement of Services<br>▪ Coordinate within Project authorities and Govt. departments in finalizing the Terms of Reference (ToR) of the services to be procured.<br>▪ Facilitate to invite expressions of interest (EoI) for consultancy assignments and coordinate in the evaluation of the EoI and finalization of the shortlisted bidders.<br>▪ Facilitate the preparation of request for proposal (RFP) for various packages contained in the procurement plan as per agreed timelines.<br>▪ Co-ordinate with the Project/World Bank/ Govt. Depts. for obtaining "No Objection" for the ToR, the shortlist and the RFP document.<br>▪ Issue the RFP document to the shortlisted consultants. Arrange the reply of queries, if received from invited consultants before the deadline for submission of proposals.<br>▪ Coordinate the pre-proposal conference, if proposed for the package, help prepare the Minutes of pre-proposal conference and circulate to the invited consultants.<br>▪ Receive the proposals till the agreed deadline and facilitate the opening of the technical proposals as per the time indicated in the bid document.<br>▪ Facilitate in the bid evaluation processes and obtain the "No Objection" if required from the concerned authority.<br>▪ Facilitate in the preparation the contract document to the winning consultant and provide the feedback to unsuccessful consultants, if required.<br>▪ Publish the contract award notice etc.<br>▪ Monitor the contract management including timely completion of the assignment, release of payment, issuing contract amendments etc. |
| Planning, monitoring and evaluation unit | | |
| 13 | Dy. Director, Planning | ▪ Institutional arrangements<br>▪ Panchayati Raj Institutions PRIs issues<br>▪ Overall Planning of the Project<br>▪ Monitoring and Evaluation<br>▪ Preparing agenda, conducting meetings and preparing proceedings.<br>▪ Reporting to be submitted to State/GoI/World Bank.<br>▪ Studies & Consultancies<br>▪ Economic analysis of sectoral programmes<br>▪ Convergence and networking with respective line department and universities.<br>▪ Any other duties assigned by the ED/CPD. |
| 14 | SMS, M & E | ▪ Monitoring and Evaluation including reporting both at the Govt. and World Bank Level<br>▪ Facilitate the development of Terms of Reference for hiring of agency for Project Management Information System (PMIS) according to the need of the Project in close consultation with PMU.<br>▪ Facilitate in designing, implementation, maintaining, and provide technical support to an online PMIS to monitor, plan and manage the Project.<br>▪ To closely monitor the performance of PMIS agency during the various stages of the Project timeline.<br>▪ Concurrent Project progress monitoring of all the Project activities to be conducted in accordance with the Result Framework of the Project |

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| | | at different intervals:<br>▪ Facilitate the Midterm and End term impact evaluation to access progress towards achieving Project's objectives.<br>▪ Design the MIS support system, i.e. M&E indicators, targets, questionnaires, and protocols at all levels of the project (PMU, DPO, APO, community/farmer level);<br>▪ Provide training to project staff at all levels on the PMIS support system;<br>▪ Facilitate the integration of GIS applications for Geo-tagging of project activities<br>▪ To keep provision of future updation, up gradation of the PMIS.<br>▪ Any other duties assigned by the ED/CPD. |
| 15 | SMS, Social | ▪ PRIs issues<br>▪ Diligently coordinate the issues related to the preparation of Gram Panchayat Resource Management Plan (GPRMP) with PMU.<br>▪ Prepare strategy and follow up for social inclusion.<br>▪ Convergence and networking with respective line departments and universities.<br>▪ Support the implementation of the project's ESMF by providing technical and operational support for training and capacity building, monitoring and reporting on ESMF, as required.<br>▪ Planning, designing and implementation of Tribal Development Plan in the Project.<br>▪ Responsible for social inclusion, social inequity, gender issues, safeguard issues related to the vulnerable sections of the society.<br>▪ Assist in preparation of Training programmes for Project facilitators and capacity building of communities.<br>▪ Mobilization of farmers into Producer Groups and mobilization of water users into Water User Groups.<br>▪ Assist in enhancing capacities of CBOs.<br>▪ Any other duties assigned by the ED/CPD. |
| 16 | SMS, Environment | ▪ Support the implementation of the project's ESMF by providing technical and operational support for training and capacity building, monitoring and reporting on ESMF, as required.<br>▪ Identify and assess the potential environmental impacts and risks of the interventions proposed under IDP and recommend mitigation measures.<br>▪ Identify opportunities for enhancing environmental benefits.<br>▪ Ensure compliance with national and state environmental regulations and the World Bank's Environmental and Social safeguards policies that apply to IDP.<br>▪ Ensure the environmental sustainability of investments under the Project.<br>▪ Coordinate with the Project Authorities and Environment & Social Cell of Project Management Unit (PMU) to develop annual action plan and assist to implement and monitor Environment & Social Management Framework (ESMF).<br>▪ Develop relevant Information, Education & Communication (IE&C) material and conduct awareness-raising on various provisions of ESMF in co-ordination with Project for all the stakeholders.<br>▪ Conduct Training Need Assessment (TNA) and formulate training plan & training Modules w.r.t. ESMF.<br>▪ Organize awareness programs, exposure visits w.r.t. ESMF. |

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| | | ▪ Assess the dimensions of sub-project interventions and describe relevant physical, biological and socio-economic conditions including any change anticipated before the project commences.<br>▪ Develop relevant environment base line data from desk review and from the field with the assistance of Project staff.<br>▪ Undertake environmental screening of Project interventions to ascertain impacts, levels of intervention required and develop reports on environment risks associated with the implementation of these activity suggesting mitigation plan.<br>▪ Coordinate with external agency hired by the Project to conduct Environment & Social Assessment (ESA) and prepare ESMF.<br>▪ Review ESA and ESMF for the sub-projects/activities and make recommendations on the adequacy of assessment and provide guidance to address the outstanding issue satisfactorily.<br>▪ Ensure that environmental guidelines with required mitigation plan are followed.<br>▪ Devise reporting formats to be used by the field functionaries of Project.<br>▪ Prepare monthly progress report (MPR) and half yearly progress report on implementation of environment management framework.<br>▪ Any other duty assigned by the Chief Project Director and Executive Director. |
| Communication and MIS unit | | |
| 17 | SMS, Communication | ▪ Develop effective Project Information, Education and Communication strategies<br>▪ Manage internal communications (newsletters, case studies, success stories, etc.)<br>▪ Draft content (e.g. press releases) for mass media<br>▪ Organize initiatives and plan events or press conferences<br>▪ Liaise with media and handle requests for interviews, statements etc.<br>▪ Foster relationships with key persons within the Project and line departments<br>▪ Collaborate with marketing professionals for advertisements or articles<br>▪ Prevent bad publicity of the Project<br>▪ Facilitate the resolution of disputes with the public or external agencies.<br>▪ Monitoring public opinion with respect to the Project<br>▪ Handling media requests for information<br>▪ Coordinating public appearances of Project events<br>▪ Evaluating communication campaigns<br>▪ Any other duty assigned by the Chief Project Director and Executive Director. |
| 18 | SMS, IT | ▪ To maintain entire Hardware and Software of the Project, strengthen the system to foster internal communication, Net working in the Project and to manage the Project website and keep liaison with the designing firm and suggest improvement.<br>▪ To perform tasks in terms of network (LAN/WAN), Systems Analysis, Simulation, Project Management & Monitoring, Expert Systems, Data Base Management, Management Information Systems, System Software Design, Computer Maintenance Management.<br>▪ Facilitate Client connection.<br>▪ Uploading the Procurement Plan(s) on STEP (Systematic Tracking of Exchanges in Procurement) and coordinate with the Project |

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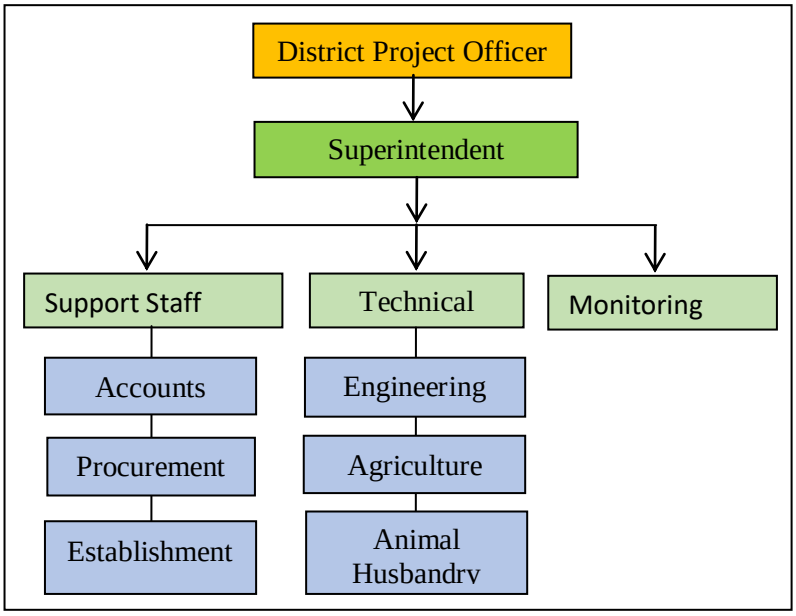
| | | authorities.<br>▪ To develop and maintain Geographic Information System (GIS), Financial Management System (FMS), Management Information System (MIS) and other web applications in the Project.<br>▪ Train, guide and supervise the field functionaries i.e. Data Entry Operator, Computer Operator and other staff to manage the Software in the fields.<br>▪ To facilitate correspondence by electronic media for the Project.<br>▪ To facilitate Project to design various Applications and to undertake field visits for successful implementation of the Applications with reference to all technical aspects.<br>▪ To suggest and advice strategy to integrate various systems reconciling them on a single Web basis platform. He/ She will also be responsible for implementing and managing any other software/applications being developed by the Project in future.<br>▪ To maintain the Project's website in terms of Designing, Upgrading, Uploading the activities time to time.<br>▪ Any other duty assigned by the Chief Project Director and Executive Director. |

### 4.4. Institutional Arrangements at District Level:

The implementation of project will be supported by a multi-disciplinary District Team. This team will be known as District Project Office (DPO), which will function as the dedicated extended wing of the PMU for project implementation. DPO will be overall in-charge for the implementation of the project at the district level under the overall guidance of CPD. DPO will also be controlling officer in respect of all staff posted in the DPO office.

The main functions of DPO will be the project implementation support; capacity building of stakeholders including WUG and farmer groups; coordination with APOs; monitoring and supervision of project activities at sub-district level; providing technical assistance to block teams etc.

DPO will get administrative, financial and program related support from an office superintendent. Each DPO office will comprise a team of three core technical persons – Civil Engineering (Junior Engineer/ Draughtsman/ Surveyor), Agriculture (Agriculture Extension Officer - AEO) and Animal Husbandry (Veterinary Extension Officer - VEO/ Veterinary Pharmacist) are presented in Fig. 4.2 below. For operational support Sr. Assistant (Accountant), Jr. Assistant (procurement person) and Superintendent (establishment person) will be inducted. Also, for MIS purpose a technical person will be hired.



Broadly, DPO office will have following functions to perform:

- Implementation of the project activities primarily through GPs in conformity with development objectives of the project.
- Mobilization of the community of the selected Panchayats of the catchment to participate in planning and implementation of the programs.
- Formation and strengthening of the existing and the new community-based organization for various project programs through meetings, workshops, trainings and exposure visits.
- Build the capacity of the staff, CBOs and Panchayat functionaries on technical, financial, administrative and managerial aspects of the programs through meetings, workshops, trainings and exposure visits.
- Provide guidance and support to field Team, GP and CBOs in planning, technical aspect, financial aspect, collective action and decision-making process.
- Preparation of work plan, execution, monitoring and supervision of major water harvesting and rural infrastructure activities.
- Plan, develop and implement livelihood plan and Agri Business Plan for various Panchayats of the catchment through watershed development team.
- Treatment of inter-gram Panchayats spaces including plantation, soil conservation and water harvesting programs.
- Planning and implement of Tribal Development Plan
- Project innovations.
- Implementation of financial management system of the project including Gram Panchayats.
- Accounting centre for project finances at the catchment level.
- Technical and Financial sanctions.
- Project procurement at District level.
- Implement and monitor ESMF/ESS/ESMP
- Implementation and reporting of all the four components of the Project.
- Unit for Monitoring, learning and MIS.
- Construction, repair and maintenance/hiring of buildings required for the project
- Networking and establish linkages with resource organizations.
- Strengthening of District level of Coordination Committee.
- Supervision and quality control of works.
- Reporting and monitoring of various programs.
- Equity and social audit.
- Office administration.
- Coordination amongst APOs
- Grievances redressal

The coordination mechanism between the SAUs/ KVKs shall be finalized by the PMU at the State level. It will then be followed by the DPO/ APO staff. The APOs would coordinate with the SAU/KVK scientists through AEOs/ VEOs of the DPO office for extension purposes and other activities related to Component-2. Similar arrangements shall be made with the line departments.

Key responsibilities for the key staff positions in the DPO office is given in **Table 4.7**.

**Table 4.7:**

| # | Position | Key Responsibilities |
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| General Administration | | |
| 1 | DPO | ▪ Shall also be the drawing and disbursing officer at the District level.<br>▪ Team leader at District level<br>▪ Project initiation and mobilization of the community through frontline teams.<br>▪ Preparation and scrutiny of GPRMP pertaining to his/her District.<br>▪ Build the capacity of the staff, CBOs and Panchayat functionaries on technical, financial, administrative and managerial aspects of the programs through meetings, workshops, trainings and exposure visits.<br>▪ Finalize annual plans to be submitted to CPD office.<br>▪ Providing technical, financial and administrative guidance in implementation of GPRMP.<br>▪ Implementation of works in arable and non-arable areas.<br>▪ Planning, implementation and monitoring of business plans.<br>▪ Reporting, Monitoring and Supervision of the various programmes at District level.<br>▪ Responsible for technical and financial sanctions as per powers delegated.<br>▪ Responsible for Financial Management System at the Panchayat level.<br>▪ Responsible for procurement at the District level.<br>▪ Responsible for Results Framework monitoring at District Level, including ensuring that semi-annual indicator values are entered into the MIS.<br>▪ Supervision of all works pertaining to his district and their quality control.<br>▪ Efficient utilization of allotted funds and enforce financial discipline in the District.<br>▪ Networking and linkages with line departments/ financial institutions.<br>▪ Responsible for getting DLCC meetings convened.<br>▪ Convergence with line departments and associated programs and schemes at District level<br>▪ Provide guidance to field functionaries in implementation of Project works.<br>▪ ESMF/ESS/ESMP implementation and monitoring at the district level.<br>▪ Office Administration<br>▪ Any other duties assigned by the ED/ CPD. |
| 2 | Superintendent | • Will be the overall In charge of the office of DPO.<br>• To assist DPO in exercising overall control and monitoring smooth working of the office business<br>• To ensure punctuality in attendance and discipline in the office<br>• To receive & mark dak as also to put up the same for the perusal of DPO<br>• To scrutinize all files, registers and bills etc. submitted to DPO<br>• To deal with the correspondence regarding Vidhan Sabha and Parliament Questions/Business pertaining to the cell<br>• Perform the duty of Sub-disburser.<br>• Any other duties assigned by the DPO |
| Operational | | |
| 3 | Accountant | • To keep and update the service record of all officials working in the office.<br>• To deal with the general type of complaints against the officials of the |

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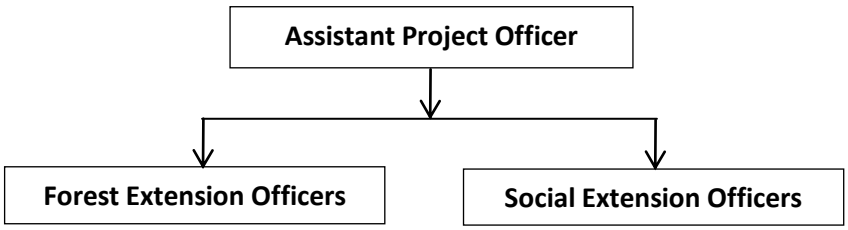
|---|---|---|
| | | DPO office.<br>• Correspondence and maintenance of record of trainings/workshop.<br>• To prepare all Fortnight, monthly, quarterly, half yearly and annual returns/reports pertaining to the Cell<br>• To keep record of correspondence regarding RTI Act, 2005 pertaining to the DPO office.<br>• Any other duty entrusted by the DPO and Supdt. |
| 4 | Procurement | ▪ Assist to put in place proper procurement arrangements in the Project as per Project Implementation Plan (PIP).<br>▪ Prepare periodic procurement plan(s) for the DPO office on the basis of the inputs as desired by the competent authority.<br>▪ Regular monitoring and updating of the Procurement plan(s) as per need and progress.<br>▪ Maintain the procurement related records and documentations systematically for audit/ review.<br>▪ Provide procurement related reports/updates to the concerned authority as and when required.<br>▪ Handle the procurement related complaints, if any<br>▪ Coordinate with the Suppliers, Contractors etc. concerned with the required procurement.<br>▪ Any other duty assigned by the DPO . |
| 5 | Establishment | • To deal with the APO and Budget estimates of the Project.<br>• To deal with the consolidated monthly summary of Revenue and Expenditure.<br>• To prepare and maintain record of Physical & Financial Progress Reports.<br>• To deal with FMRs of the project and 20-Point Programme and also prepare information pertaining to EAP<br>• To deal with the correspondence regarding Vidhan Sabha and Parliament Questions/Business pertaining to the cell<br>• Any other duties assigned by the DPO and Supdt. |
| Technical | | |
| 6 | Engineer | ▪ Associate in preparation of GPRMP.<br>▪ Assist APO and Gram Panchayats in selection of sites for civil works.<br>▪ Designing , preparation of estimates of following works:<br>i. Bridges<br>ii. Water harvesting structure<br>iii. construction/ repair or maintenance of buildings<br>▪ Preparation of maps and tender documents pertaining to civil works<br>▪ Technical scrutiny of all estimates.<br>▪ Supervision and quality control of the civil works<br>▪ Any other duties assigned by the CPD/ DPO. |
| 7 | Agriculture | ▪ Associate in preparation of GPRMP.<br>▪ Assist APO and Gram Panchayats in selection of sites for demonstrations etc.<br>▪ Technical assistance in all agriculture related operations at the GP level.<br>▪ Execution of agriculture extension activities at the GP level and coordination with the line departments.<br>▪ Facilitation of the communities on agri. based trainings<br>▪ Any other duties assigned by the CPD/ DPO. |

| | | |
|---|---|---|
| 8 | Animal Husbandry | ▪ Associate in preparation of GPRMP.<br>▪ Assist APO and Gram Panchayats in execution of livestock based demonstrations etc.<br>▪ Technical assistance in all Animal Husbandry/ fodder related operations at the GP level.<br>▪ Execution of livestock based extension activities at the GP level and coordination with the line departments.<br>▪ Facilitation of the communities on livestock based trainings.<br>▪ Any other duties assigned by the CPD/ DPO. |
| M & E/ MIS | | |
| 9 | M&E / MIS | • To assist DPOs for compilation and reporting of project works<br>• Preparation of physical and financial reports<br>• Any other duties assigned by the DPO and Supdt. |

### 4.5. Institutional Arrangements at Assistant Project Officer Level:

The project will be implemented in targeted Gram Panchayats (GPs) through a sub district level Assistant Project Office (APO). Each APO will cover between 15 to 20 GPs. The head of the APO will be Assistant Project Officer, equivalent to Forest Range Officer of the HPFD. The APO will have a dedicated team of two forest and two social extension officers (**Fig 4.3**).




Broadly, APO office will have following functions to perform:

- Define and identify annual plans of GPs and their clusters
- Mobilization of the community at the panchayat level to participate in planning and implementation of the programs.
- Form community-based organization (CBOs such as WUGs, PGs etc.) for various project programs.
- Provide guidance and build the capacity of the CBOs and panchayat functionaries on technical, financial, administrative, managerial aspects of the programs.
- Help GPs and CBOs in establishing linkages with resource organizations.
- Support to GP in developing GPRMP, sub-plans for vulnerable groups.
- Support in identifying and developing service providers including para-workers, community reporters, book keeper etc.,
- Facilitate the implementation of GPRMP and Tribal Development Plan.
- Support in monitoring and evaluation.

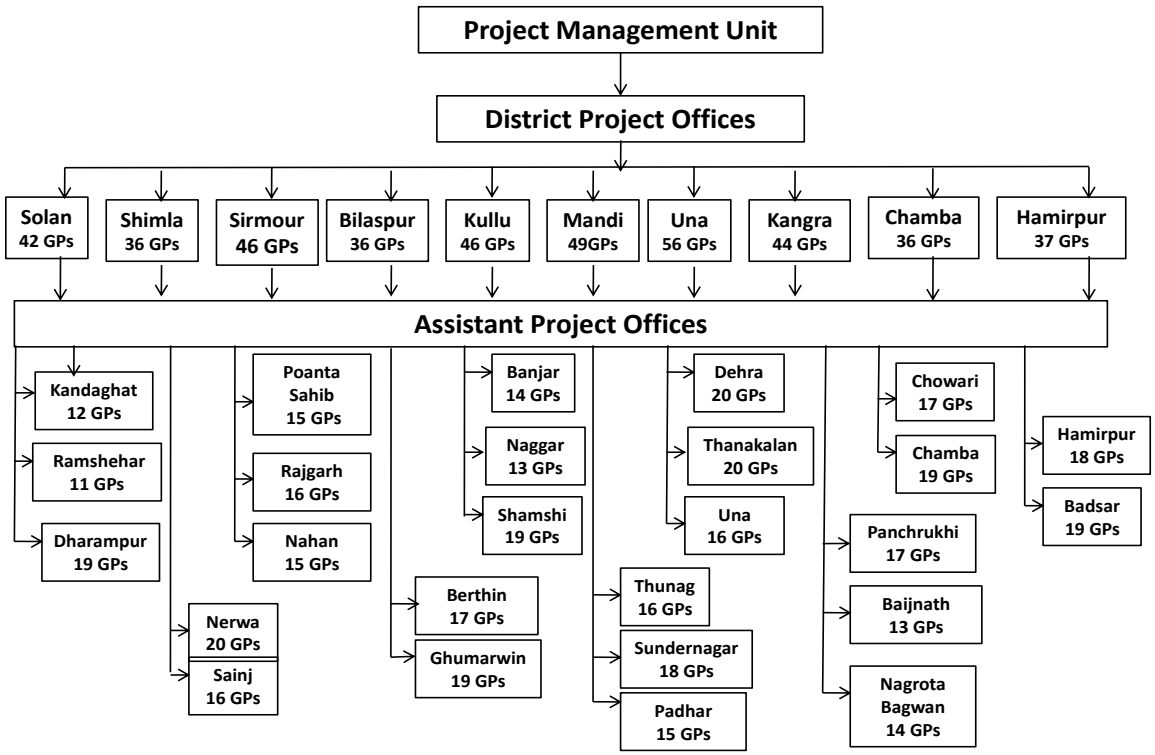
Key responsibilities for the staff positions in the APO office are given in **Table 4.8.**

Table 4.8:

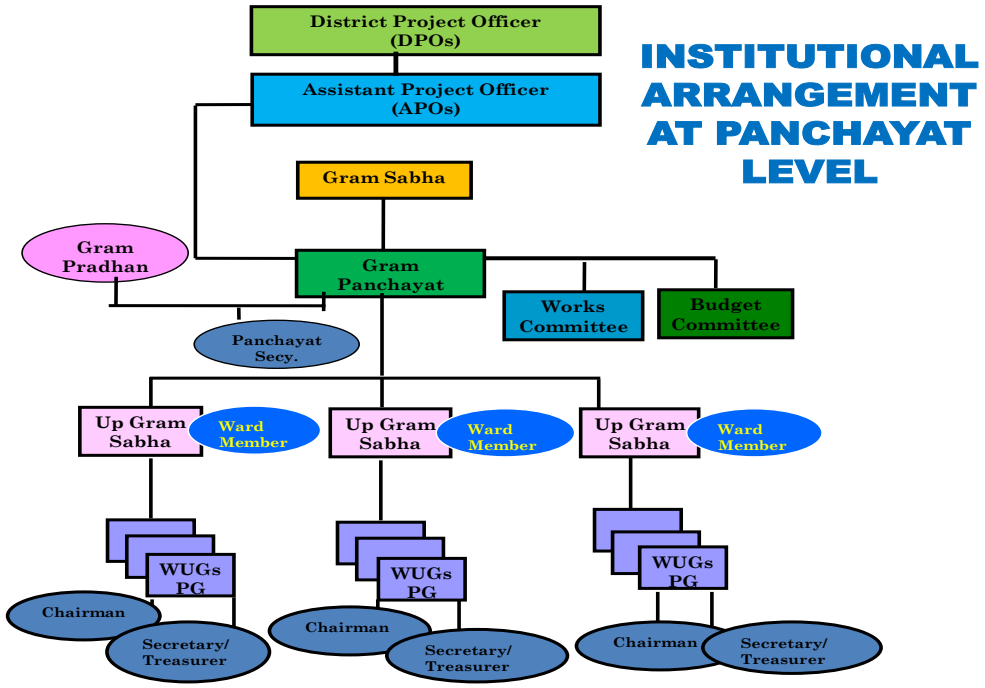
| # | Position | Key Qualification Experience and Responsibilities |
|---|---|---|
| General Administration | | |
| 1 | APO | ▪ Project initiation and mobilization of the community.<br>▪ Preparation of GPRMP, livelihood plans, Tribal Development Plans etc.<br>▪ Formation and strengthening of the CBOs.<br>▪ Providing technical, financial and administrative guidance in implementation of GP Plans.<br>▪ Planning and implementation for Source sustainability management, including plantations, soil conservation and water harvesting.<br>▪ Planning, implementation and monitoring of business plan for the groups/clusters/federations/Project beneficiaries.<br>▪ Reporting, Monitoring and Supervision of the various Project programmes at various levels of implementation.<br>▪ Linkage with the line Departments/ Financial Institutions.<br>▪ Realization of beneficiary contributions<br>▪ Coordination with DPO and GPs<br>▪ Efficient utilization of allotted funds.<br>▪ Environment and Social Safeguards at GP/ cluster level.<br>▪ Quality control of the works.<br>▪ Office administration including accounts.<br>▪ Overall in charge for the implementation of the project at the cluster level under the overall guidance of DPO.<br>▪ Any other duties assigned by the DPO/ CPD. |
| Extension | | |
| 2 | Forest Extension Officer (2) | ▪ Create awareness regarding Forestry, soil and water conservation activities of the project and build vision of the community regarding source sustainability and water regeneration.<br>▪ Facilitate preparation of GPRMP.<br>▪ Assist Deputy Ranger and communities in preparing the site-specific treatment plan.<br>▪ Promote forming and strengthening of WUGs and PGs through meetings, workshops, Trainings, exposure visits.<br>▪ Selection of site/species for raising plantations as per GPRMP in consultation with the community.<br>▪ Nursery raising and maintenance of plantation and nursery journals<br>▪ Implement treatment of clusters as per GP Plan.<br>▪ Protection of plantations and involvement of community in the protection and management of plantations and fire prevention and management.<br>▪ Linkage of the programs with line departments.<br>▪ Coordination with frontline staff and GP for assisting implementation of GPRMP.<br>▪ Reporting of achievements pertaining to their sector including success stories and MIS data.<br>▪ Assist APO in office work pertaining to their sector.<br>▪ Any other duties assigned by the APO/DPO/CPD. |
| 3 | Social Extension Officer (2) | ▪ Facilitate preparation of GPRMP including the baseline and other data collection.<br>▪ Coordinate awareness and participatory approaches of various Project activities in GPs.<br>▪ Create awareness regarding agriculture and allied activities in selected panchayats. |

| | | |
|---|---|---|
| | | ▪ Coordinate group formation – Water User Groups (WUGs), Producer Groups (PGs), Producer Organizations (POs) and their strengthening through meetings, workshops, trainings and exposure visits etc.<br>▪ Facilitating the selection of the lead farmers through panchayats and train them for implementing agriculture and horticulture activities<br>▪ Strengthening of existing GP Community Based Organizations (CBOs).<br>▪ Organize demonstrations and field days for climate-smart agriculture technologies, high value crops, and on farm fodder cultivation.<br>▪ Assist APO in PRA exercises at GP level.<br>▪ Environment and Social Safeguards at GP/ Cluster level<br>▪ Preparation of Tribal Development Plans, and business Plans for Clusters/Societies/Federations etc. at GP level.<br>▪ Reporting of achievements of social sector including MIS data and success stories at APO level.<br>▪ Coordinate in establishing linkages with financial institutions.<br>▪ Responsible for flow of information of social sector.<br>▪ Linkages of the programs with line departments.<br>▪ Coordination with frontline staff and GP for assisting implementation of GPRMP.<br>▪ Any other duties assigned by the APO/DPO/ CPD |

The entire project implementation arrangement at state, district and sub-district levels is summarized in **Fig. 4.4.**



At Gram Panchayat level, the project planning and implementation arrangement is presented in **Fig. 4.5**




## 4.6. Other project arrangements

### a. Managing Resource Agencies

The project of this scale will require the services of resource agencies for various tasks/activities (Human Resource, Capacity Building, Environment, Communications, Tribal, Process Monitoring, MIS, Baseline, Impact Evaluation etc.). These resource organizations will support the project in the respective task(s). The project will monitor their work regularly through reports, meetings and workshops and give them feedback and seek their support regularly.

### b. Technical Appraisers:

There will be a need for a large number of technical resource persons to facilitate the communities towards Business Plan evolution and appraisal when producer groups come together and take the shape of clusters in Component-2. The project (DPO) will identify the appraisers and invest in activities - their induction in the process of Business plan preparation, appraisal, sanctioning and implementation in Component-2. During the induction, more emphasis will be on appraisal of business plans, so as to build their capacities in that subject. However, induction to all the project processes will create better understanding of their role and sub-projects processes and help them to give creative feedback to GP and the community.

# 5. Project Implementation Schedule and Processes

The phasing, implementation schedule, key project processes are described in this chapter.

## 5.1 Overall Phasing of Project:

The project will cover 10 districts and extend in 428 Gram Panchayats in 26 clusters, represented by APOs level. The project activities will begin in all the GPs over a period of 6-7 months from the time the project commences. Thus, as such there is no separate preparatory phase. Rather, many of the project activities will start from the very onset of the project. For some basic planning for first year of the project, project is already working as part of 'Retro' phase. Nevertheless, the project activities under different components will be covered in different years.

## 5.2 Phasing of Activities:

There is a logical link between Component-1 and Component-2. As a result, most of the activities in Component-2 would start from the 2nd project year. Only the studies related to Component-2 have been taken in the 1st year of the Project. Also, the engagement of the professional and field support is for the entire project period.

| Sr. No. | Component | Activity | 1st Year | 2nd Year | 3rd Year | 4th year | 5th year |
|---|---|---|---|---|---|---|---|
| | | | 2020-21 | 2021-22 | 2022-23 | 2023-24 | 2024-25 |
| 1 | Component :1 Sustainable Land and Water Resource Management | Preparation of GPRMP | √ | | | | |
| 2 | | Raising of Nurseries | √ | √ | √ | √ | √ |
| 3 | | Raising of Plantations & fencing | √ | √ | | | |
| 4 | | Contour trenching & Grass sowing | √ | √ | | | |
| 5 | | Drainage line treatment | √ | √ | √ | √ | |
| 6 | | Spring Development | | √ | √ | √ | |
| 7 | | Management of exotic species (Lantana | √ | √ | √ | | |
| 8 | | Primary Water Harvesting and Storage | √ | √ | √ | √ | |
| 9 | | Consultancies | √ | √ | | | |
| 10 | | Fire management and awareness | √ | √ | √ | √ | √ |
| 11 | | Maintenance of plantations | | | √ | √ | √ |
| 12 | Component 2: Improved Agricultural Productivity and Value Addition | Secondary water distribution in arable area ( Pipe & pumps) | | √ | √ | √ | |
| 13 | | Water distribution and water use efficiency (tanks, channels, sprinkler etc. | | √ | √ | √ | |
| 14 | | Demonstrations (spices, vegetables, vermi composting etc.) | √ | | | | |
| 15 | | Diversification | | √ | √ | √ | |
| 16 | | Pre & Post Harvest technology interventions | | √ | √ | √ | |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 17 | | Animal Husbandry activities & Tribal Action Plan | | √ | √ | √ | √ |
| 18 | | Ropeways and Foot bridges | | √ | √ | √ | √ |
| 19 | | Investment-value chain infrastructure at cluster level | | | √ | √ | √ |
| 20 | | Agribusinesses Development | | | √ | √ | √ |
| 21 | | Consultancy | √ | √ | | | |
| 22 | Component 3: Institutional Capacity Building for Integrated Watershed Management | Capacity building | √ | √ | √ | √ | √ |
| 23 | | Implement IEC | √ | √ | √ | √ | |
| 24 | | Consultancies | √ | √ | √ | | |
| 25 | | Annual reports | √ | √ | √ | √ | √ |
| 26 | | Community awards and recognition | | √ | √ | √ | √ |
| 27 | Component 4: Project Management | Monitoring &Evaluation | √ | √ | √ | √ | √ |
| 28 | | Implementation of ESF | √ | √ | √ | √ | √ |
| 29 | | Operating Cost | √ | √ | √ | √ | √ |

In the zero year which i.e. 2019-2020 the activities such as preparation of GPRMPs, Nursery Development and seedling production shall be taken up as advance forestry works. All expenditures made for these activities shall be charged under retro-active financing.

### 5.3 Processes:

Project activities relied on many communities and various stakeholder led processes. These processes have been elaborated in Community Operation Manual (COM) and Grants Manual. One of the major planning processes which will have major implications on project activities is preparation of GPRMP which has been described in COM.

# 6. Capacity Building

A capacity development program is defined as a set of activities which strengthen the knowledge, abilities, skills and behaviour of individuals and improve institutional structure and process to efficiently meet the objective of the project in a sustainable way.
Capacity building will be an integral and cross-cutting component of the project at all levels of project implementation arrangement. The capacity building in the project aims to improve understanding of various elements of the project and their interactions and interdependence and build the competence and capability of project management and executing bodies, including Chief Project Director Office (CPDO), District Project Offices (DPOs), and Assistant Project Offices (APOs), Gram Panchayats (GPs), Producer Groups (PGs), Producer Organizations (POs), community beneficiaries and field support organizations, as necessary.

Specifically, the objectives of the capacity building activities include:

- Effective dissemination of the project objective, concepts and approach.
- Develop knowledge, tools and models that are workable on ground.
- Develop the institutions at all levels of project implementation through establishing and supporting shared principles and "rules of the engagement", so that they are able to perform in a coordinated and synchronous manner meeting the requirements and service standards of the project.
- Enhance the knowledge base and skills, and influence the attitudes of all project stakeholders at different levels of the project implementation, so that they are able to work as efficient teams and perform effectively the roles and responsibilities vested with them.

## 6.1. Capacity Building Needs of Various Stakeholders

Capacity building needs of the various stakeholders and their capacity building requirements are detailed in Table 6.1. The stakeholders are classified into the following groups, each of which will have different capacity building needs.

**Table 6.1: Capacity Building Needs of Project Stakeholders**

| Project Stakeholder | Critical Capacity Gaps |
|---|---|
| Target Community/ Poor | ▪ Participatory ecosystem and resource management<br>▪ Project rules/non-negotiables<br>▪ Project processes |
| GPs | ▪ Participatory ecosystem and resource management<br>▪ Project Management<br>▪ Inclusive of the needs of the poor<br>▪ Project rules/non-negotiables<br>▪ Project processes |
| GP Committees | ▪ Project Management<br>▪ Inclusive of the needs of the poor<br>▪ Project rules/non-negotiables |
| User Groups | ▪ Group Dynamics<br>▪ Funds Management<br>▪ Planning, Implementation, Operations, Maintenance<br>▪ Project rules/non-negotiables<br>▪ Project processes |

| | |
|---|---|
| PGs/POs | ▪ Group Dynamics<br>▪ Funds Management<br>▪ Business Plans<br>▪ Project rules/non-negotiables<br>▪ Project processes |
| APOs | ▪ Participatory ecosystem and resource management<br>▪ Community Mobilization, Hand-holding and Facilitation<br>▪ Institution Building<br>▪ Community Learning<br>▪ Project rules/non-negotiables<br>▪ Project processes |
| DPO Project Staff | ▪ Participatory ecosystem and resource management<br>▪ Participatory Development Processes<br>▪ Project rules/non-negotiables<br>▪ Project processes<br>▪ Procurement<br>▪ Financial Management<br>▪ Business Promotion<br>▪ Marketing<br>▪ Building Higher order institutions<br>▪ Partnerships and Linkages<br>▪ Convergence<br>▪ Planning and Budgeting Processes<br>▪ Information System<br>▪ Communication and Documentation<br>▪ Monitoring & Evaluation |
| CPD Office Project Staff | ▪ Project rules/non-negotiables<br>▪ Project processes<br>▪ Procurement<br>▪ Financial Management<br>▪ Human Resource Development<br>▪ Planning and Budgeting Processes<br>▪ Information System<br>▪ Communication and Documentation<br>▪ Monitoring and Evaluation<br>▪ Market Intelligence<br>▪ Business Promotion<br>▪ Policy advocacy and convergence |

While the anticipated training and capacity building needs of different stakeholders is listed above, for systematic undertaking capacity development of the key project stakeholders and the project staff, a comprehensive training master plan will be developed as per the Training Need Assessment (TNA) for project specific components, during the initial implementation stage of the project. Thus, the project will follow a well-defined capacity development strategy to achieve project objectives/ goals and to capacitate stakeholders for effective project implementation.

### 6.2. Strategies for Capacity Building

The various strategies that could be adopted for building the capacities of the various stakeholders, to meet the above Capacity Building Needs, are as follows –

**Gradual scaling up:** The project is following a phased approach for implementing the project in different batches so as to provide opportunities to learn by experiences. For the subsequent batches of GPs, the previous GPs will serve as learning grounds for building their capacities.

**Experiential learning:** The capacity building approaches will focus on all opportunities of experiential learning including interactive learning and exposure visits. Reviewing and Sharing of project learning will be an important element of CB strategy.

**Internalizing capacities locally:** The project will invest in building the capacity of GP members, WUG and PG members so as to empower the community Organisations to manage their livelihood affairs by themselves.

The project will develop and follow a nomination policy for each level of project implementing agencies to provide equal opportunity to all project staff/ key stakeholders to receive training, and must also encourage women members to get trained.

Annual Training Calendar will be developed by CPD office and would be included as part of the Annual Plan of Operation. The training plan will be reviewed and revised by mid-term of the project operation factoring both new and emerging needs and also applying cost escalations.

### 6.3 Capacity Building Programs

In order to accommodate the capacity building needs of all the stakeholders of the project and also to meet the demanded capacity needs during the evolving later stages of the project, the following broad capacity building programs have been identified (Table 6.2).

**Table 6.2: Capacity Building Programs**

| S. No. | Programs | Participants | Key Contents | Tools |
|---|---|---|---|---|
| 1. | Sensitization Programs | Community, GP,APO and DPO level stakeholders. | Innovative project approaches and Key Project principles | Workshops, campaigns |
| 2. | Induction Programs | Newly recruited Project Management Staff at CPD, DPOs and APO level | Project principles, community engagement, Participatory methodologies, WUG and PG formation | Training on Community Engagement, Field placement |
| 3. | Orientation Programs | Project staff, resource agencies, line departments. | Key Project Principles, project institutional model, project processes | Workshops and Field visits. |
| 4. | Thematic Training Programs | Specialists in DPO, APO, GP office bearers, Members of WUG &PG, Federation members. | Participatory ecosystem and resource management, Social mobilization, marketing, micro | Separate modules on each thematic areas, |

| | | | | |
|---|---|---|---|---|
| | | | finance, institution building, entrepreneurship, procurement, accounts, monitoring | experiential learning, thematic workshops and discussion forums. |
| 5. | Skill Building Programs | Community – Groups and their leaders, GP members, Master trainers, External Resource Persons, Project Staff; Skills for enhancing the livelihoods of poor. Managerial skills for community leaders | Accounting and monitoring, planning, Social Audit, learning and reporting, conflict resolution, negotiation skills, operations and maintenance | On the job training, field based training |

The content and scope of the programs will be finalized based on the needs at the various levels by the CPD office and DPO level capacity building agencies. Sensitization on the issues of gender, environment, tribal etc., will be part of all the programs mentioned above.

### 6.4 Implementation arrangements for Capacity Building:

The following implementation arrangements will be resorted to in building capacity of project stakeholders.

#### 6.4.1. State level:

Appropriate Resource Agencies will be utilised to train the CPD office staff. PMU will hire appropriate physical facilities to undertake state level training programs and workshops. Appropriate national level institutions will be identified to run thematic training programs as and when required which will also be followed by refresher programs. Periodic exposure visits will be undertaken to learn from experience of similar projects both nationally and internationally. A National Level pool of resource persons will be identified to run workshops and short-term programs for state level specialists.

#### 6.4.2. GP level capacity building:

The APO will be responsible for building the capacity of the target poor, the GP and its committees, Water User Groups (WUG), Producer Group (PG), etc., including providing handholding support.

The capacity building at the GP level will primarily be on the Community Operation Manual (COM) and Grants Manual. The COM will have all the details of the project relevant to the community clearly explained and therefore, COM will be the main resource material for training at village level to the community. In addition to this, the other major focus of capacity building component at GP level will be orientation of Gram Sabha and elected representatives to the project processes. As a part of capacity building strategy at the GP level, the project will put special efforts on exposure visits for community members.

## 6.5. Indicative Modules for Various Capacity Building Programs

Based on the project requirements, the various modules required for training the project stakeholders have been categorized in below mentioned generic modules. The indicative contents in each of the modules have been furnished in table below.

**Table 6.3 - Indicative Modules for Various Programs**

| # | Module | Content |
|---|---|---|
| **1.** | Understanding Poverty, Environment, Ecology and Development | Poverty – dimensions, coping mechanisms<br>Participatory Identification of the Poor<br>Development – definition, process, dimensions, approaches<br>Delivery – roles of state, civil society and markets, functions, evolution and growth; Government Programs – their approach, present programs<br>Vulnerability Sensitization – Gender, Tribal, Youth<br>Environment and Ecology, Natural Resources Management, Climate Change and Resilience |
| **2.** | Management Skills | Financial – Costing, Budgeting, Accounts, Financial Statements and Auditing<br>Marketing – Marketing basics, Market Intelligence, Consumer Behaviour, Product Management, Commodity Marketing – Forward Linkages<br>Project Management - Project Planning, Sequencing and activity scheduling, Responsibility matrix, monitoring and evaluation<br>Monitoring the Plans – progress – quantitative and qualitative<br>Learning – feedback, review, view of poor<br>Human Resource Management – Mentoring, Team Building and Management, Performance Measurement, Review<br>Communications and Information Technology– Documentation, Written and Oral Communication, Written Analysis, Facilitation |
| **3.** | Institution Building | Community mobilization – process<br>Structure of the primary and federations of poor and their groups – group dynamics, group development processes<br>Design Principles of the People's Institutions<br>Promotion Process of the Institutions<br>Institution Development – Organization Development – life cycles<br>Systems for the Institutional Requirement – Statutory, Transparency,<br>Institution rating – credit rating, groups and federations rating<br>Conflict resolution and Accountability, Bylaws and Business Rules |
| **4.** | Natural Resource Management | Participatory ecosystem and resource management<br>Watershed concept, micro-watershed, ridge-to-valley approach<br>Water budgeting and participatory irrigation management<br>Natural Resource Cycles<br>User Groups<br>Various elements of watershed development including soil and moisture conservation<br>Operations and Maintenance<br>Ownership and access – individual, common and public properties<br>Equity considerations<br>Engineering works<br>Rural Infrastructure,<br>Agriculture & allied sectors<br>Fodder Conservation and Augmentation |

| | | |
|---|---|---|
| **5.** | Project Management | Project Scope, Objectives, Outputs, Components, Indicators, Processes, Non-negotiable, key principles – Sustainability, Equity and Productivity<br>Project Budget and Implementation Arrangements<br>Project Procedures – Procurement, Accounts, IFMS, M&E, MIS |
| **6.** | Participatory Planning, Process and Research | Participatory appraisal of resource<br>Participatory Identification of Poor (PIP)<br>Participatory Research – processes, tools, methodology, sampling framework<br>Participatory processes – decision making, planning, monitoring, evaluation, review |
| **7.** | Individual Development | Personality development,<br>Leadership – skills, Conflicts, Time Management |
| **8.** | Specific functional Knowledge and Skills | Training Needs Assessment (TNA) and Training of Trainers (TOT)<br>Training specific to Functional Area at cluster, district and state levels |

### 6.6 Manuals and Reference Books

The Project Implementation Plan, Community Operation Manual and the Grants Manual will be the basic resource materials for preparing all capacity building materials. In addition to these documents, the project will follow following manuals for capacity building activities.

a. Financial Management Manual for Programme
b. Grant Manual
c. Civil Engineering Manual
d. Technical Manual
e. Environmental & Social Framework/ESS/ESMP

The list mentioned above is indicative and the project based on the emerging needs may decide to produce more such items as and when required.

The Project due to its evolving nature and to integrate the learning on the ground in to capacity building programs, will revise the Community Operational Manual as and when required consequently, the capacity building materials will also be revised to reflect the emergent capacity building needs.

In addition to this, report card system shall be adopted in order to obtain feedback from the stakeholders on training imparted. This will enable the project to further improve/modify the capacity building plan.

### 6.7. Demand Driven Skill Building and Capacity Building

The project will develop systems, which will consistently feed in to the designing of programs according to the needs of the poor, poorest, vulnerable and youth and their groups. The following mechanisms will be useful to assess the capacity building needs constantly:

The project will identify the various capacity building agencies in the country and proactively enter in to a technical agreement so as to ensure that on request the programs are conducted.

The project will also empanel various resource organizations and resource persons catering to all the functional areas and induct them in anticipation of their requirement for meeting the demand of the trainings from the community.

### 6.8. Staffing for Capacity Building:

The project will deploy experienced capacity building specialists at various levels to coordinate and monitor the capacity building activities as detailed in table below.

| **Table 6.4: Staffing for capacity building** | |
|---|---|
| **Level** | **Name of Position** |
| CPD Office | Assistant Director |
| DPO | District Project Officer |
| APO | APO/ Forest & Social Extension Officer – Social Mobilization |

### 6.9. Monitoring and Evaluation of Capacity Building Programs:

The following are the indicators/parameters for monitoring and evaluating Capacity Building Programs. They shall be incorporated into the MIS and/or Process Monitoring.

**a. Monitoring data:**

i. Number of stakeholders trained, given refresher training
ii. Number of training days
iii. Number of specialist staff identified and inducted
iv. Number of models and demonstration plots
v. Number of resource agencies identified and oriented
vi. Entry/exit tests of knowledge of trainees and trainers and number of participants certified as having minimum knowledge required and ability to apply the learning

**b. Process Monitoring Parameters:**

i. Quality of the resource persons
ii. Adherence to training guidelines (adequate resource materials, duration, training conditions, program coordination)
iii. Assessment of adequacy of learning by trainers and trainees' levels of learning
iv. Recollection and utilization in the project activities or their livelihoods, need for further support

**c. Evaluation:**

i. Adoption rates of recommended practices.
ii. Enhancement of livelihoods which can be a self-reported perception of usefulness of the training taught and the intention of the beneficiary to apply these
iii. Replication and scaling up of skills/lessons beyond project areas

# 7. Communications:

Project communication is the exchange of project-specific information with the emphasis on creating understanding between the sender and the receiver. Effective communication is one of the most important factors contributing to the success of a project. The project team must provide timely and accurate information to all stakeholders. Members of the project team prepare information in a variety of ways to meet the needs of project stakeholders. Team members also receive feedback from these stakeholders. Project communication includes general communication between team members but is more encompassing. Project Communication Management is the knowledge area that employs the processes required to ensure timely and appropriate generation, collection, distribution, storage, retrieval and ultimate disposition of project information. Project Communication is the responsibility of everyone on the project team.

Information, Education and Communication (IEC) subcomponent of the project supports the broad IEC strategy of the project. It envisages involvement of multiple stakeholders – the target community, community groups, GP, Gram Sabha, people's representatives, line departments, local organizations etc. Towards this and to co-opt these multiple stakeholders so that they lend a helping hand to the project, the direction, approach, project processes and results expected on one hand and the performance and progress on the other hand, have to be constantly communicated to all the stakeholders appropriately and in an appropriate medium. This will also enable all the stakeholders to take informed decisions. This makes communication strategy a very important part of the project, which could determine the success of project.

### 7.1 Purpose of Communication:

The purpose of the Communications Management Plan is to define the communication requirements for the project and how information will be distributed. The Communications Management Plan defines the following: what information will be communicated; how the information will be communicated (in meetings, email, telephone, newsletter, web portal, etc.); when information will be distributed; who is responsible for communicating project information; how any sensitive or confidential information is communicated and who must authorize this; any constraints, internal or external, which affect project communications; and any standard templates, formats, or documents the project must use for communicating. This Communications Management Plan sets the communications framework for the HP IDP project. It will serve as a guide for communications throughout the life of the project and will be updated as communication needs change. This plan identifies and defines the roles of persons involved in this project. A project team directory is included to provide contact information for all stakeholders directly involved in the project.

### 7.2 Communication Needs:

The broad categories of the communication needs are:

a. **Information flow and exchange need** – both internal and external exchange needs for information flow are to be addressed
   - Internal flow – management information systems, reporting requirements, documentation and dissemination of best practices, functional requirements, valuation learning, information exchanges and others;

- Convergence with capacity-building and monitoring & learning activities especially in terms of sharing resources, material and feedback mechanisms and feedback obtained; and
- External flow – related to the transparency and accountability requirements, reporting requirements, documentation and dissemination of the project results/processes, policy advocacy, and public relations.

**b. Capacity building requirements:** building the capacities of the project functionaries, target communities, poor, vulnerable, other support agencies and individuals for achieving the required outcomes.

**c. Enabling the stakeholders at the community level:** GP and its committees and other facilitators to identify communication needs within their community and address the same in the most efficient and effective manner.

**d. Awareness campaigns and sensitization requirements:**

- The project will require sensitizing various stakeholders on issues of concern for the rural communities and poor related to gender, vulnerability, livelihood enhancement, rights and entitlements. This will be targeted to the various stakeholders;
- Each set of stakeholders have to be clear about their respective roles and responsibilities and those of other entities within the project;
- Each stakeholder has to internalize the project objectives, CDD approach and strength/benefits of teamwork; and
- A strong sense of monitoring and learning among all stakeholders, especially the GPs and other implementing entities, has to be inculcated such that all learning and feedback is used for making better and more-informed decisions.

### 7.3. Communication Management Approach:

Approximately 70% of a Project Manager's time is spent on communication. Project Management Team usually spends most of time on measuring and reporting on the performance of the project, composing and reading emails, conducting meetings, writing the project plan, meeting with team members, overseeing work being performed, meeting with stakeholders and many more activities related to the project. By having a solid communications management approach many project management problems can be avoided. In the IDP project the cooperative and open communication approach will be adopted. IDP will share knowledge and exchange information with the stakeholders. Therefore, the required infrastructure to enable open channels of communication between all the project stakeholders will be provided. This approach will direct the activities throughout the project and it will also create sustainability for the future. This might be implemented by the project web-page, professional publications and more.

### 7.4. Project Team Directory:

An updated contact list that includes all the personnel involved in the project is available at the project website www.hpidp.org

### 7.5. Communication Methods and Technologies:

Project team members use a variety of communication methods to deliver project information as below:

| # | Media | Description |
|---|---|---|
| 1 | Traditional Media | It includes meetings, voice calls, exposure visits, Radio and other visual Aids. This method is often the most effective way to distribute information to the project stakeholders. |
| 2 | Print media | The Community/stakeholders will be aware about the project information through newspapers, handbills, Brochures and other printed materials |
| 3 | Electronic media | The project information will be shared through Emails, Video conferencing, Audio Conferencing, CDs, Storage disks etc. |
| 4 | E-Communication | As part of the communication strategy, the project will make full use of ICT applications to achieve the project principles of transparency, accountability and partnerships. For this purpose, The project will develop and maintain a dedicated website to provide updates, archive various reports. This platform enables the project stakeholder to access project data and communication at any point in time. There will be two domains within the portal, private and public. The portal will comprise IFMS and MIS (private domain) and a Website (public domain). |

### 7.6. Communication Flow:

The various information and communication flows, which need to be facilitated by the communication strategy, plan and activities are mentioned below:

- Project to Community and vice-versa
- Community to Community
- Project to Project
- Project to Resource agencies/teams/persons to – community and vice-versa
- Resource agency/teams/persons – resource agencies/teams/persons

The challenge will be to facilitate each of these flows so as to keep the project as a learning and vibrant organization.

# 8. Convergence:

It is important to facilitate institutional linkages and convergence to dovetail resources and expertise available from different sources. To obtain wider impacts through joint strategies/actions and sharing of resources, shared values, responsibilities and gap filling with the ongoing Govt. schemes being implemented in Gram Panchayats (GPs) by various line departments and centrally sponsored schemes the Project intends convergence with these institutions. Post project sustainability to various project interventions will be ensured through convergence. The project will mobilize resources, inputs, expertise, knowledge, skill and experiences from various sources/ agencies /institutions/organizations/ departments to sustain its interventions. The project will also require support from financial institutions such as banks cooperatives etc (public and private) for its smooth implementation.

## 8.1 Approach:

Under the project, convergence will be promoted by adopting the systematic approach. The following process will be adopted by each level of project management units:

**At District Level:**

The following processes will be adopted at the district level convergence:

- The project will introduce the concept of convergence at the time of preparation of GPRMP by identifying the relevant line departments for convergence.
- The Annual Work Plans (AWP) of each GP will form the real basis for convergence with other programs, schemes and opportunities. Compilation of AWP at APO, DPO and PMU level will identify key areas for convergence at District and State Levels.
- A District level Co-ordination committee (DLCC) will be formed under the chairmanship of Deputy Commissioner (DC) to facilitate the convergence between project activities and programs/ schemes of other line departments.
- An annual convergence plan with consultation of panchayat shall be presented by the DPO mainly for discussion in DLCC and other line departments, etc.
- Based on above discussion, district collector may issue a direction to GP or the concerned line department heads at the district level to facilitate the implementation of different activities depicted in the GPRMP.

## 8.2 Potential Convergence Instruments:

### 8.2.1 Convergence with MGNREGA, NRLM at District level:

i. Most of the activities in the Project under arable and non-arable land development are permitted under MGNREGA. MGNREGA is a wage-oriented program and allows only 40% as material cost which at times proves inadequate to undertake comprehensive measures. Convergence would provide opportunities to make more funds available from the Project under material costs for permanent structures, especially the water harvesting structures.

ii. The project would ensure that identified activities are invariably included and reflected both in the Gram Panchayat Resource Management Plans (GPRMPs) made by the Project GPs and in the shelf (it is the list of programs/ works decided and proposed to be executed in a given time frame by the Gram Sabha) of the works of concerned GPs under MG NREGA.
iii. Funds may be made available from the Project to meet cost of an identifiable part of the MGNREGA shelf that could result in enhanced durability of assets created/ proposed using Project funds.
iv. The livelihood component of NRLM (National Rural Livelihood Mission) can be supplemented for putting to use for livelihood, assets created under MGNREGA.
v. Another mode for convergence would be to provide for technical inputs from the Project. The inputs could be either in the form of supervision by technical staff during work execution for improving the quality of assets created/proposed or for capacity building for using assets under MGNREGA.

### 8.2.2 Convergence with funds available under 14th Finance Commission

GPs are directly being provided grants through the funds made available for local initiatives under 14th Finance Commission. These funds are being utilized for conservation and maintenance of traditional drinking water sources and maintenance of footpaths.

Since, GPs are directly involved in planning and execution of the identified schemes, present IDP will ensure that these schemes are reflected in the GPRMP and it shall try to augment these schemes with funds wherever desired by the target GPs.

Component-1 activity such as spring source development (Bouries) specially caters to the conservation and maintenance of the traditional water sources/ springs.

The Project would also be funding the construction of Foot bridges under Component-2 which may converge with the footpaths being constructed under the funds from the 14th Finance Commission.

**At State Level**

Both The Vice Chancellors (VCs) of CSK HP Krishi Vishvavidalaya, Palampur and Dr. Y.S.Parmar UHF, Nauni, Solan, HP are members of the Governing Council which is headed by the Chief Minister, Himachal Pradesh. The Directors of the line department and the PCCF-cum-Head of Forest Force (HoFF) are also the members. The GC would therefore be the platform for all State level convergence linked Policy decisions. The presence of VCs in this body ensures the convergence between the Project, SAUs (State Agriculture Universities) and the Krishi Vigyan Kendra (KVKs) under it.

The following processes and activities will be adopted at the State level convergence:

- PMU may prepare an overall convergence strategy in consultations with other line departments (like Agriculture, Animal Husbandry, Rural Development & Panchayati Raj, Forest, Tribal development etc.) and other state-owned programs, societies and corporations such as State Livelihood Mission, etc. while preparing an overall strategy.
- The Executive Committee (EC) of the Project chaired by Additional Chief Secretary (Forests) to the Govt. of HP with all Head of Departments (HoD) as its members. The

EC will approve the convergence strategy and accordingly issue guidelines to different line departments through their HoDs.

- PMU will prepare an update, every six monthly, on progress and challenges on convergence and to present in the meetings of EC. Subsequently the EC may issue a direction to concerned department for relevant convergence to the project districts and GPs.

### 8.2.3.Convergence with RKVY:

- Usually the funds under RKVY are provided with the Department of Agriculture and further allocations are made to Department of Animal Husbandry, Horticulture, Forest etc. Further, RKVY is a multi-sectoral platform for Projects based on priorities reflected in comprehensive district agriculture plans.
- Project is having a broad based, multi-disciplinary governing body and implementation structure with Forest Department as nodal department and other line departments such as Agriculture, Animal Husbandry, Rural Development and Panchayati Raj etc. Project has created a strong core team of forestry, agriculture and Animal Husbandry background and will ensure that it synergizes on common initiatives undertaken by the Project and RKVY.
- The interventions could be with or without funds. Funds may be made available from the Project to meet costs of an identified part of RKVY Project or deploying pooled funds for creation of an asset at the Line Department level.
- Convergence would also be on sharing of capacity building, technical inputs etc. for enhancing the deliverables and developing synergies with the line departments.

### 8.2.4. Convergence with other policies and programs:

Project will also explore opportunities of convergence with many national and state level programs/ missions etc. These includes, inter alia, following key programs /missions that have relevance to the project.

a. Comprehensive District Agriculture Plan(C-DAP)
b. SREPs and BAPs of ATMA
c. PLPs of NABARD
d. Micro Level Farming Situation Analysis Reports of KVKs
e. DPRs of IWMP Watersheds
f. National Horticulture Mission (NHM)
g. National Food Security Mission (NFSM)
h. National Mission of Sustainable Agriculture (NMSA)
i. National Initiative for Climate Resilient Agriculture (NICRA)
j. National Livestock Mission
k. CAMPA
l. Green India Mission
m. PMKSY

# 9. Financial Management

## 9.1. Introduction

Project is expected to invest about US $ 100 million (INR 700 Crores) (Recipient: 20% - US $ 20 million; IBRD: 80% - US $ 80 million). The Project will be supported by the World Bank and the State in the manner of matching shares, in the ratio of 80:20.

In order to achieve the project objectives and thus physical and financial targets, sound financial management is pre-requisite. This need to incorporate better financial planning, budgeting, accounting, reporting, internal control, audit, procurement, disbursement and the physical performance. Ultimately, the project specific financial management system will produce timely, relevant and reliable financial information so that project managers and State and Central governments could review the progress of the project within agreed procedures and guidelines of World Bank.

## 9.2. Planning

### 9.2.1. Annual Work Plan and Budget

PMU will prepare Annual Work Plan (AWP) for each financial year starting from first year, and get it approved by an appropriate committee, constituted by CPD, prior to commencement of new financial year. The AWP will form the basis of the budget request that the Department sends to the Finance Department for inclusion in the annual state budget.
Thus, the entire AWP preparation exercise should be completed by the month of October – November to allow for timely consolidation at PMU level and onward submission to Principal Chief Conservator of Forests (HoFF).

The PMU will prepare Annual Work Plan (AWP) in format **PFM – 1**. The AWP will be prepared against each component, sub – component and activity for each office and will provide physical as well as financial details. The AWP will comprise of two parts:

**PFM – 1: Abstract of Annual Work Plan:** This is a summary of the AWP for the Program and AWP for different activities to be covered, under different components and sub-components.

**PFM – 1A: Detailed Annual Work Plan (Program):** This part will contain the activities to be carried out at Gram Panchayat level, facilitated by APOs & DPOs. Each activity has been linked to the State Budget Code to facilitate budget preparation. Simultaneously, the PMU will also prepare an Annual Procurement Plan, as discussed in the chapter of Procurement Plan & an Annual Training Plan, which will form part of the AWP.

## 9.3. Budget

### 9.3.1. Annual Budget

The PMU will also prepare an Annual Budget in format **PFM–2.** The Budget will be prepared against each component, sub–component and activity for each office. The Budget will be formed on the basis of the AWP, against the four budget lines corresponding to the Project components. Each budget line (or component) will be further classified under the State Budget Codes.

The Project will follow the extant procedure for preparation of the AWP and Budget. Broadly, the process of preparing the AWP and Budget will be as under:

- Each APO will prepare AWP and corresponding budgets derived from the corresponding GPRMPs
- Each DPO will consider and consolidate the AWP and Budget received from corresponding APOs
- PMU will consider & consolidate AWP and Budget received from 10 DPOs. PMU will also add budget of those activities which are planned and executed by PMU itself.
- The Finance Committee of the Project will then approve the Project AWP and Budget.
- The Budget will then be submitted to the State Finance Department through the Principal Chief Conservator of Forests (PCCF), HP Forest Department for obtaining appropriations from the State Government.

### 9.3.2 Government of Himachal Pradesh to the Project

On approval, these funds will be released by Government of Himachal Pradesh to the Integrated Development Project for Source Sustainability and Climate Resilient Rainfed Agriculture (IDP) through the PCCF (HoFF) of Forest Department for further transfer through *e-Vitran* to the District Project Officers (DPOs) at the district level under Demand No. 16 and 32. The DPOs will draw the funds from treasury for carrying out the activities of the project on the basis AWP; the progress will be monitored by Assistant Project Officers (APOs) under the overall control of DPOs for treatment in inter GPs spaces and soil conservation and agricultural works.

Reimbursement is as per the expenditure reported in the Interim unaudited Financial Reports (IUFR) as per the Aneexure –II of Disburement and Financial information Letter "DFIL" dated 11/03/2020). The IUFR will require expenditure to be reported category wise and component wise.

### 9.3.3 Budget Head

Following Detailed Heads of Accounts has been provided by the State Finance Department in consultation with the Accountant General.

**Demand No-16 (General)**

2406: Forestry and Wildlife
01: Forestry
102-Social and Farm Forestry
37: Integrated Development Project for Source Sustainability and Climate Resilient Rainfed Agriculture

**Demand No-32 (Schedule Caste Sub Plan)**

2406: Forestry and Wildlife
01: Forestry
786- Special Component Plan for Scheduled Castes
17: Integrated Development Project for Source Sustainability and Climate Resilient Rainfed Agriculture

**Internal Budget Codes**

The following Budget Codes, for the project convenience as internal mechanism for expenditure purpose will be adopted:

| Component | Description | Budget and Account Code | |
|---|---|---|---|
| | | Demand No.16 | Demand No.32 |
| C1 | Sustainable Land and Water Resource Management | 2406-01-102-XX-C1 | 2406-01-786-XX-C1 |
| C2 | Improved Agriculture Productivity and Value Addition | 2406-01-102-XX-C2 | 2406-01-786-XX-C2 |
| C3 | Institutional Capacity Building for Integrated Watershed Management | 2406-01-102-XX-C3 | 2406-01-786-XX-C3 |
| C4 | Project Management | 2406-01-102-XX-C4 | 2406-01-786-XX-C4 |

The budget utilization will be monitored by finance department of GoHP and any additional demand for the budget during the financial year will be met through a provision by way of supplementary demand in the month of September. GoHP has already opened a separate budget head for the project in the State budget and a budget provision has been made to finance project activities of FY 2019-20 and FY 2020-21.

### 9.3.4. Central Government to Government of Himachal Pradesh

The World Bank funds (not exceeding 80% of project cost) will be provided to GoI under IBRD loan terms and it will be released by Government of India (GoI) to Government of Himachal (GoHP) as per agreed financing norms between Centre and the State (i.e.80% as Loan and 20% as State Funding). The GoHP will provide 100% funding (Central and State share) for the Project in the yearly State budget at the beginning of each financial year based on the budget estimates derived from Annual Work Plan (AWP) provided by PMU of the IDP through the nodal agency i.e. Forest Department.

Further, on the basis of claims filed by the Project with the Controller of Aid, Accounts and Audit (CAAA), the World Bank Credit will be received by the Central Government. The Central Government will transfer the World Bank Credit to the GoHP by way of additional central assistance in accordance with the Central Government's standard arrangements for development assistance to the States.

## 9.4. Budget Execution

### 9.4.1. Transfer of Funds

Primarily the funds will flow from the Government of Himachal Pradesh (GoHP) to IDP through HP Forest Department (HPFD). Further, HPFD allocate the funds to each District Project Officer i.e. Drawing and Disbursing Officers (DDOs) through e-Vitaran on the basis of Annual Work Plan (AWP) to carry out the project activities.

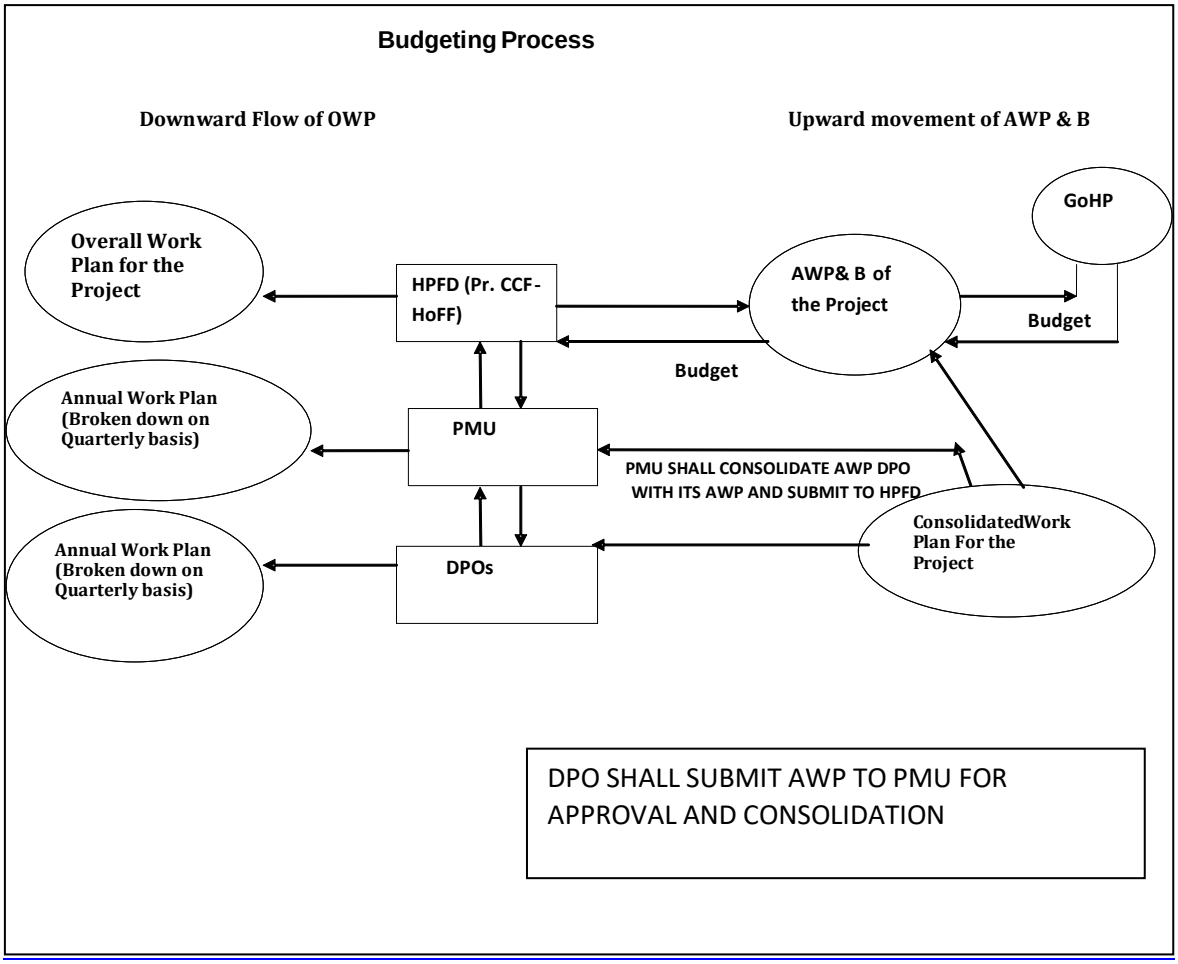
### 9.4.2. Transfer of Funds to the DPOs

The funds so received shall be further distributed amongst the DDOs as per their requirements based on the Annual Work Plan/budget by use of State Treasury system and Project Management Information System (PMIS) software system. Before release of funds, the CPD office will consider the following key checkpoints.

- Monthly Progress Report/Statement of Expenditure is not pending for more than one month;
- Audit observations of serious nature, as per last audit report of the Project Auditors, are not pending compliance.

The DPOs would use the funds for activities at the district level.

**The entire fund flow mechanism is summarized in Figure 9.1**




### 9.4.3. Drawing and Disbursing Officers (DDO)

For the project, following authorities will function as DDOs:

- The Executive Director, IDP at the PMU level
- The District Project Officers at District levels

| S. No. | Name of Drawing and Disbursing officer (DDOs) |
|---|---|
| 1 | The Executive Director, IDP, HQ Solan |
| 2 | DPO, Sirmour (Nahan) |
| 3 | DPO, Bilaspur |
| 4 | DPO, Solan |
| 5 | DPO, Kullu |
| 6 | DPO, Shimla |
| 7 | DPO, Kangra (Dharamshala) |
| 8 | DPO, Mandi |
| 9 | DPO, Hamirpur |
| 10 | DPO,Una |
| 11 | DPO, Chamba |

Each drawing and disbursing officer has been delegated financial powers to incur the expenditure under different SOEs as per Finance Department guidelines issued time to

time. The delegation(s) would, however, be subject to observance of the following condition(s):

a. Expenditure to be incurred under any of the aforesaid SOE would be based on realistic need(s)/priorities of the Department/Office and, expenditure should not be incurred just to exhaust the budgetary allocations

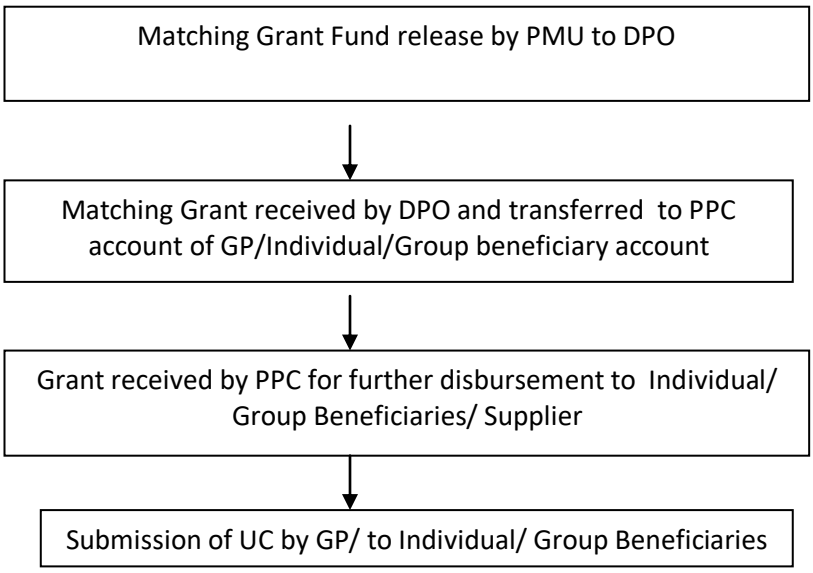
b. Availability of funds under relevant HOA/SOE in a particular year keeping in view that the budgetary provision is made so as to cover the entire year & the expenditure may be incurred in the said financial year as per instructions issued by HP Finance Department from time to time

c. The SOEs w.r.t which nothing has been specified in these instructions will continue to be governed by the existing instructions/delegations and procedure prescribed there for

Apart from the above, the provisions as laid down in HP Financial Rules, 2009 will also be strictly adhered.

### 9.4.4. Transfer of Funds to GPs/Individuals/Group beneficiaries

The project will transfer its share as grant in aid in the bank account of Panchayat Purchase Committee (PPC) constituted by the Gram Panchayat in the Gram Sabha, as a matching grant disburse under component-2.However in case of direct purchase by individual/group beneficiaries , funds will be transferred directly to their bank accounts. Detailed process has been elaborated in Grant manual. The proposed flow of funds is illustrated as below;




Consolidation of project accounts will be done at the PMU level by consolidation of accounts of PMU, DPOs and all APOs, using the computerized system. Data transfer will be handled through (i) an integrated computer network; or (ii) periodic data transfer through electronic mail and cloud computing system etc.

## 9.5. Monitoring

### 9.5.1. Financial Management Framework

The financial management (FM) framework envisages that the project will maintain accounts using the mainstream government single entry cash accounting system. All budgeting and accounting to record the financial transaction of the project will necessarily be through treasury system i.e. HP-OLTIS (HP Online Treasury Information System). This automatically helps various stakeholders like H.P Finance Department, Head of Department (HODs), Drawing and Disbursing Officers (DDOs), and Accountant General (AG) to monitor all the expenditures through HP-OLTIS. This system also helps to the respective DDOs to control their expenditure. These systems don't allow to incur the expenditure over the allocated budget.

### 9.5.2. Transaction Information Flow and Accounting

The Books of Accounts and all other memoranda and records, which support in anyway the entries therein, shall be maintained in such a manner as to disclose full information relating to any account. The entries in each account shall be supported by such detailed information as will render certain identification and verification of recorded facts.

Project accounts will be maintained on cash basis. Payment for all expenses will be made electronically from the state treasury system. All the accounting entries at the Project level (including PMU, DPO and APO) and GP level will generate and maintain the transaction vouchers for their various receipts and expenditures made at their level. For capturing the Budget Line/ Item of the AWP, each payment made against the voucher to which this expense pertains will be verified and monitored by the use of HP-OLTIS (HP Online Treasury Information System). However, a monitoring system (PMIS) will be established at the Project Headquarter level to monitor the usage of funds at DPOs and a similar mechanism will be developed at the APOs level to monitor the usage of funds by GP.

### 9.5.3. Accounting and Internal Controls

The following key books and records will be prepared by the accounting centers, to the extent applicable.

a. Cash Book
b. Budget Control Register
c. Salary Register
d. Vehicle Log Book
e. Stock Register
f. Fixed Assets Register
g. Fixed Deposit Register (at PMU only)
h. EMD / Security Deposit Register (at PMU only)
i. Performance Guarantee Register (at PMU only)
j. Material Form
k. Measurement Book
l. Register of Works
m. Contractors Ledger
n. Contingency Payment Register

The formats of these books/records will be as prescribed in the Forest Account Code. In addition to these registers allied forms and schedules, as defined in Chapter -3 of H.P Forest and Budget and Account Manual Vol. II will also be maintained. Grants manual will serve as a reference document for the staff at DPO/APO level for the maintenance of

accounts, reporting and auditing of grants disbursed under the Project.

### 9.5.4. Internal Controls

A robust internal control is the key to financial management. The authenticity, bonafideness and authority shall have to be clearly established for any expenditure in the project and the custody of the assets of the project. Internal Controls are exercised through delegation of Financial Power, procedures inbuilt in authorizing a payment (including appropriate segregation of duties), effecting a payment, recording a payment, in the systems' built in capacity of retrieving information at all levels (PMU, DPO, APO, GP) and the maintenance of proper books and records.

Internal control mechanisms will include the following:

- The establishment of appropriate budgeting systems and regular monitoring of actual financial performance with budget and targets;
- Development and adoption of simple, clear and transparent financial and accounting policies which will govern financial management and accounting for the project. These policies and procedures will include identification of expenditures that can be charged to the project and the categories under which the expenditure will be charged; the policies and procedures for transfer of funds and accounting of expenditures; etc. The financial and accounting policies are described below:-

  **Financial Policies**

  a. No authorized officer shall exercise its powers of sanctioning expenditure, to pass an order which will be directly or indirectly to his own advantage;
  b. No authorized officer shall incur any expenditure or enter into any liability involving expenditure or transfer of moneys for investment or deposit from Government account unless the same has been sanctioned by a Competent Authority.
  c. Original administrative sanctions/expenditure sanctions are to be retained in treasury and monitoring of expenditure will be done as per administrative sanction/expenditure sanction and allocated budget.
  d. The Drawing and Disbursing Officers shall prepare the bill and present the same in the treasury/Sub treasury to which they are attached for making payment under e-bills using Electronic clearance System.

  **Accounting Policies**

  (a) The accounting of project will be done on cash basis i.e. single entry system. Every DDO shall maintain a Cash Book in his office for recording all Financial transition on prescribed format i.e. TR-1 duly printed and certified for pages contained and machine numbered.
  (b) The DDO shall cause to maintain Accounts correctly in proper form to his own satisfaction.
  (c) The DDO has to satisfy the Accountant General as well as well as the State exchequer.
  (d) The records pertaining to cash and accounts shall be maintained and kept under safe custody.
  (e) The District. Project Officer shall reconcile the expenditure with treasury figures every month and submit a consolidated statement of expenditure duly verified by the treasuries and it will be countersigned and enclosed with the monthly accounts by the treasuries while submitting the accounts to the Accountant General.

## 9.6. Financial Reporting

The reporting framework for the Project will consist of an Interim Financial Report (IFR). The format of IFR is attached to the Disbursement Letter are attached as Annexure–1 IUFR-1, IUFR-2. IUFR-3 & IUFR-4.

It will provide information on the sources and uses of funds according to disbursement categories and project components (component 1, 2, 3 and 4). The IFR will be prepared by PMU from its underlying accounting records, and expenditure statements generated from the state treasury system and where applicable, the Web based IFMS accounting system. The IFR will be submitted by PMU to World Bank and Controller of Aid, Accounts and Audit (CAAA) simultaneously within 45 days from the end of each calendar semester. To maintain cash flow of the project, PMU is allowed to submit out of turn IFRs as and when substantial expenditures are incurred under the project. The IFR will form the basis of disbursement from World Bank to GoI and GoHP.

The DPOs will also have the capability of generating expenditure reports on a quarterly basis for their own monitoring needs. The financial reporting will be from DPOs to PMU Office of the project. These reports will be management oriented (i.e., summaries rather than transactional details). The report will include (i) a comparison of budgeted and actual expenditure and analysis of major variances, including in sources and application of funds (by components and summarized expenditure categories), and in key physical parameters; and (ii) forecast for the next two quarters. APO will submit monthly returns of GP activities to the DPOs to be scrutinized and compiled at DPOs level.

The detailed formats for the reports at all levels are to be adapted. The summary details of various reports to be generated at the different levels is presented in the table given below:-

**Table. 9.1 Reporting and Monitoring Schedule**

| # | Indicators/Reports | Frequency | Verified by | Analysed by |
|---|---|---|---|---|
| 1. | Annual Work Plan Compliance Report | Monthly | DPO | PMU |
| 2. | Total procurement done (Commodity-wise) | Monthly | DPO | PMU |
| 3. | Total value of procurement (Commodity-wise) | Monthly | DPO | PMU |
| 4. | Gross demand generated (Commodity/Input-wise) | Monthly | DPO | PMU |
| 5. | Budget Requirement (DPO-Wise) | Quarterly | DPO | PMU |
| 6. | SOE-Wise expenditure | Monthly | DPO | PMU |
| 7. | Physical and Financial Progress Report (DPO-wise) | Monthly | DPO | PMU |
| 8. | Regular Internal Controls | Quarterly | DPO | PMU |

### 9.6.1. Disbursement Arrangement

Under the retroactive financing provision, project related expenditure incurred up to one year before the expected date of signing of the loan Agreement, subject to US$16 million can be claimed.

- Eligible expenditures will comprise: works, consulting and non-consulting services, goods, and workshops and training.
- Ineligible expenditure will include: cost of land acquisition, expenditure on rehabilitation and reconstruction, retention money unless actually paid, and expenditure considered ineligible by the auditors/Bank.

Disbursement schedule: Loan funds will be disbursed under different category/s subject to the allocated amount and the disbursement percentage as indicated in the following table.

| **Table 9.2** | **Disbursement Schedule** | |
|---|---|---|
| **Category** | **Amount of the Loan Allocated (Expressed in US$)** | **Percentage of Expenditures to be Financed (Inclusive of Taxes)** |
| 1.Goods, Works, non consulting services ,consulting services, Training and Workshops and operating costs for the project | 73.372,000 | 80% |
| 2. Matching Grants for Individual and groups under Component -2 of the project and for the OMIF under Component 1.B (C) of the project | 6,428,000 | 100% |
| 3. Front-end Fee | 200,000 | Amount payable pursuant to the section 2.03 of the agreement in accordance with the section 2.07 (b) of the General Conditions. |
| 4.Interest Rate Cap or Interest Rate Collar Premium | 0 | Amount due pursuant to the Section 4.05 of the General Conditions. |
| **Total Amount** | | |

### 9.7. Auditing Arrangements

Comptroller & Auditor General of India or its authorized representative will be the statutory auditor of the Project and they will audit accounts of the Project. An audited consolidated annual project financial statement will be submitted to the Bank within six months of the close of financial year.

### 9.8 Disclosure of Financial/Audit Reports

The project will disclose its financial information/reports with stakeholders. This will include dissemination of information to the public through disclosure of audit reports, periodic District wise expenditure reports and annual budget allocations both to the project and the district through the project website and in District project offices. This information will also be shared in the DLCC meeting.

### 9.9. Retroactive financing

GoHP will seek retroactive financing, not exceeding 20 percent of the World Bank financing (i.e. US$16 million), for project-related work undertaken by the borrower during project preparation, in advance of effectiveness. This will be eligible for financing subject to compliance with the World Bank's procurement procedures. For retroactive financing, the PMU will submit a separate stand-alone unaudited IFR certifying the actual expenditure incurred.

# 10. Procurement Arrangements

This section focuses on procurement arrangements and is intended to guide the procurement officials directly involved in the procurement activities in carrying out procurements under the Project. It also intends to help in understanding the procurement processes and to achieve uniformity in procurement processes followed under the project. The rights and obligations of the purchaser and the supplier/contractor/consultant/service provider of goods, works consulting and non-consulting services will be governed by the tender documents and by the contracts signed by the purchaser with the supplier/contractor/consultant/service provider and not by the Procurement Regulations stated in this section.

## 10.1 Applicable Procurement Rules

The procurement of goods, works, consulting and non-consulting services to be financed by the Integrated Project for Source Sustainability and Climate Resilient Rain-Fed Agriculture in Himachal Pradesh [IDP] will be carried out in accordance with the World Bank's Procurement Regulations for IPF Borrowers [dated July 2016, revised November 2017 and August 2018] – "Procurement Regulations", and the provisions of the Loan Agreement. If there is a conflict between government decrees, rules, and regulations and the World Bank's Procurement Regulations, then the World Bank's Procurement Regulations shall prevail. Unless otherwise agreed with the World Bank, the World Bank's Standard Procurement Documents, Requests for Proposals, and Forms of Consultant Contract will be used.

In event of any discrepancies between the PIP and the World Bank's Procurement Regulations, the latter will supersede the PIP.

## 10.2. Specific Procurement Objectives

The procurement officers and entities under the Project will endeavour to conduct their procurement and monitor procurement progress through the below objectives.

1. To achieve the Project Development Objective [PDO] together with Value for Money, Transparency and Integrity;
2. Ensure economy by maximizing the participation of bidders and timely operationalization of the assets created;
3. Efficient selection of the suppliers/contractors, resulting in fair sharing of risks and thereby enhancing quality of deliverables;
4. To achieve effective time adherence and minimizing price variations through efficient and effective contract management;
5. Ensuring timely and efficient availability of material/goods/works/non-consulting services and consultants, and training, in line with the Procurement Plan within budget and on time, and in compliance with the Procurement Regulation for IPF Borrowers of the World Bank; and
6. Effective and efficient handling of procurement-related complaints and disclosure of procurement information.

### 10.3 Procurement Results Indicators

The indicators proposed to be used to measure the above objectives are as below:

- Percentage of PMU and DPO procurements that adhere to estimated costs with less than + 10 % variance.
- Percentage adherence to procurement cycle time [procurement cycle time is time taken from the date of invitation of bids to the date of contract award].
- Percentage purchase orders/ contracts with adherence to stipulated payment terms.
- Disclosure of procurement information including but not limited to opportunities/ formats and checklists/contract award notices/ procurement post review reports, complaint handling mechanism, etc., on project website.
- Procuring entities have received at least one training in procurement as the first step to build procurement capacity.

### 10.4. Procurement Entities and their Roles and Responsibilities

The project envisages both centralized and decentralized procurement which will primarily be carried out at 3 levels; the Project Management Unit [PMU] under HP Forest Department [HPFD] at State, District Project Offices [DPOs] at each district and sub-district level and individual beneficiaries and user groups at Gram Panchayat [GP] level.

- At State Level, PMU, HPFD, headed by a Chief Project Director will be fully responsible for project implementation and project monitoring and oversight at all levels. The PMU procurement staff will be responsible for: (i) carrying out all procurement activities at PMU level and (ii) monitoring of procurement activities at district and sub-district level in the project.

- At District Level, DPOs [one DPO per District] will be the procuring entities implementing the project procurement activities. The DPO with the support of an Accounts Assistant will be responsible to: (i) carry out district-level procurement activities envisaged under the project and (ii) support GPs at sub-district level in carrying out their procurements. The APOs at sub-district level will be responsible to monitor and implement the project in 428 GPs. The APO's with the assistance of two Social Extension and two Forest Extension officers will be mainly responsible for contract monitoring and supervision of procurement transactions at GP level.

- At GP level, procurement will be carried out at village/community level by individual beneficiaries/GP/user groups, supported by their respective DPOs/APOs.

### 10.5. Procurement Capacity

The PMU with Bank support will ensure that all staff handling procurement at all levels are adequately trained in Bank Procurement Regulations prior to initiation of procurement activities in the project. The PMU will also conduct contract management training for district and sub-district level with Bank support, upon project implementation.

The PMU staff and DPO officials [responsible to manage procurement in the project] have already undergone training in Bank's Procurement Regulations applicable to the project. The PMU staffs have also received trained in STEP by the Bank.

### 10.6. Community Operations Manual [COM]

The project includes several features of a decentralized, demand-driven project. Community-level procurement shall follow Community-Driven Development [CDD] arrangements as per the World Bank's Procurement Regulations and as outlined in Procurement Section of the Community Operations Manual. Given other on-going government programs, the activities to be funded following the PIP shall be identified upfront to avoid double-dipping and will require close monitoring and oversight.

### 10.7. Matching Grants [MG]/Grants Manual [GM]

As per the Legal Agreement for the Project, "Matching Grant" means a grant awarded by the PMU/DPO to an eligible Grant Recipient, out of the proceeds of the Loan. It has been mentioned in the Project agreement at the time of negotiations. The selection criteria and procedures set forth in the Grants Manual.

As per the Legal Agreement, "OMIF Agreement" means the agreement to be entered into between the DPO and a Gram Panchayat [Grant Recipient under Component 1.B(c) of the Project], pursuant to the provisions of the Grants Manual and Section I.D. of the Schedule to the Project Agreement.

As per the Legal Agreement, "Grants Manual" means the manual, satisfactory to the Bank, to be adopted by HPFD, setting forth, *inter alia*, the criteria for the selection of the Grant Recipients, the terms and conditions for said selection, as well as the necessary formats for application for Matching Grants under Component 1.B(c) and Component 2 of the Project, environmental/social requirements, and other necessary guidelines for implementation of all modalities of Matching Grants, which manual may be amended from time to time with the prior written concurrence of the Bank.

The "Procurement Section" of the Grants Manual which will be updated from time to time describes procurement arrangements for implementation of Matching Grants related to OMIF under Component l.B (c) of the project and Matching Grants to individuals or groups under Component 2 of the project.

### 10.8. E-procurement

The project will use Government of India's National Informatics Centre [NIC] platform www.hptenders.gov.into carry out bidding in the project for procurement of goods and works only. The procurement estimated per contract of INR 5 Lakhs and above will be procured by PMU and DPOs using the e-procurement systems. The project may undertake procurement of consultancy services using e-procurement.

### 10.9. STEP [Systematic Tracking of Exchanges in Procurement]

The Project [PMU/DPOs] will use the online STEP [Systematic Tracking of Exchanges in Procurement] tool to prepare, clear, and update its procurement plan; for monitoring procurement activities. The project will disclose procurement plan and its updates on the project websites after Bank's clearance in STEP.

### 10.10. Project Procurement Strategy for Development [PPSD] Procurement Plan

A Project Procurement Strategy for Development [PPSD] [available at **Annex.2**] has been prepared by the Project to determine the optimum procurement approach to be adopted to deliver the right procurement result. The PPSD has taken into consideration *inter alia* the market situation, the operational context, previous experience and the risks present. The PPSD *inter alia* describes the procurement approach in sufficient detail for all the procurement to be undertaken during the first 18 months of the Project.

As per its PPSD, the project's total value is US$100 million of which procurement spend is approximately US$80 million [as per table **10.1below**].

| | Description of Spend | PMU Level Spend [INR Lakhs] | DPO Level Spend [INR Lakhs] | Beneficiary Level [GP + Individual] Level Spend [INR Lakhs] | Total Spend [INR Lakhs] | Spend as a percentage of Total Project Cost [Percent] |
|---|---|---|---|---|---|---|
| 1 | Goods | 1,396.65 | 4,960.90 | 14,725.00 | 2,1082.55 | 30.12 |
| 2 | Minor Civil Works | 730.00 | 32,986.91 | - | 33,716.91 | 48.17 |
| 3 | Consultancy Services | 1,402.83 | 0.00 | - | 1,402.83 | 2.00 |
| 4 | Non-Consultancy Services | 306.54 | 43.71 | 775.00 | 1,125.25 | 1.61 |
| 5 | Capacity Building initiative/Trainings | 1,092.02 | 0.00 | - | 1,092.02 | 1.56 |
| 6 | Operational Costs like Salaries, AMCs, etc. | 8,715.92 | 0.00 | - | 8,715.92 | 12.45 |
| 7 | Miscellaneous | 1,237.68 | 1,626.86 | - | 2,864.54 | 4.09 |
| | Total Spend | **14,881.64** | **39,618.38** | **15,500.00** | **70,000.02** | **100** |
| **Total project cost [INR Lakhs] : 70,000.00 approximately**<br><br>**Procurement as a Value and percent of Total Project Cost [sum of S. Nos. 1, 2, 3 and 4]** | | | | | **57,327.54 Equivalent to US$[41] 81.89 Million** | **81.90** |

Based on the need assessment, the project has decided to use the Government e-Marketplace [GeM][42] for procurement of Goods and Non-Consulting Services up to US $100,000.

Based on its PPSD and Annual Work Plan [AWP], a Procurement Plan [(available at **Annex 3**] has been prepared for the first 18 months of the Project and has been agreed with the World Bank. It reflects the different procurement methods or consultant selection methods to be used, the need for pre-qualification, estimated costs, prior review requirements, and time frame. It is reflected in Bank's online Procurement Planning tool titled Systematic Tracking of Exchanges in Procurement [STEP].

[41] 1 US$ = INR 70.00 approximately
[42] https://gem.gov.in/

The Procurement Plan will be updated every 12 months or earlier to reflect the actual project implementation needs and improvements in institutional capacity. To the extent practicable, contracts for goods shall be grouped in packages wherever seems appropriate to avoid slitting of contracts. The community contracts will be detailed out in the Grants Manual. All procurement in the Project shall be undertaken in accordance with the Procurement Plan cleared by the Bank. Items to be procured under the Project shall be as per the Procurement Plan agreed with the World Bank through the Bank's online STEP.

As far as thresholds for procurement and procurement methods are concerned, the provisions as laid down in this Procurement Plan, including its amendments as agreed with the World Bank, shall prevail.

### 10.11. Procurement Complaint Handling Mechanism

A complaint handling mechanism to address procurement-related complaints under the Project will be developed and implemented to the satisfaction of the Bank. Upon receipt of complaints, immediate action will be initiated to acknowledge the complaint and to redress it within a reasonable timeframe. All complaints will be addressed at levels higher than the level at which the procurement process was undertaken, or the decision was taken. Any complaint received will also be forwarded to the Bank for information, and the Bank will be kept informed after the complaint is redressed.

### 10.12. Procurement Thresholds and Prior Review Thresholds

The project is to be implemented by PMU at state level, DPOs at district level, APOs at sub-district level, and Individual beneficiaries/User Groups at community/GP level. The procurement thresholds and review arrangements will be followed as below:

| Procurement approach and method | Thresholds [US$ equivalent] |
|---|---|
| Open International [Goods, IT, and Non-consulting services] – Request for Bids [RFB] | >10 million |
| Open National [Goods, IT, and Non-consulting services] – Request for Bids [RFB] | >100,000 and up to 10 million |
| National Request for Quotation [RFQ] – [Goods/Works] | Up to 100,000 |
| Open International [Works] – Request for Bids [RFB] | >40 million |
| Open National [Works] - Request for Bids (RFB) | >100,000 and up to 40 million |
| Direct Selection | With prior agreement, based on justification |
| Framework Agreement | For Goods/Works/Non-consulting services: According to paragraphs 6.57-6.59 of Section VI of the Regulations<br><br>For Consulting services: According to paragraph 7.33 of Section VII of the Regulations |
| Force Account | In accordance with paragraphs 6.54 and 6.55 of Section VI of the Procurement Regulations, and with prior agreement in Procurement plan with the Bank |
| Consulting Services [Firms] | CQS: As per requirements of paragraphs 7.11 and 7.12 of Section VII of the Regulations<br><br>LCS, FBS: in justified cases |

| | |
|---|---|
| | QCBS, QBS: in all other packages |
| Shortlist of National Consultants | Up to 800,000 |

### 10.13. Procurement Prior Review Thresholds

Based on the current procurement risk rating of 'Moderate', the IBRD will prior review the following contracts:

(a) Works [including turnkey, supply, and installation of plant and equipment and PPP]: All contracts more than US$15 million equivalent
(b) Goods and Information Technology: All contracts > US$4 million equivalent
(c) Non-consulting Services: All contracts > US$4 million equivalent
(d) Consulting Services: Firms: All contracts >US$2 million equivalent
(e) Consulting Services: Individuals: All contracts > US$400,000 equivalent
(f) Direct Selection: The justification of Direct Selection for all contracts

### 10.14. Prior Review Contracts

In the case of contracts subject to prior review, PMU and DPOs will seek Bank's no objection before granting/ agreeing to: [a] an extension of the stipulated time for performance of a contract that either increases the contract price or has an impact on the planned completion of the project; [b] any substantial modification of the scope of works, goods, IT system; non-consulting services; or consulting services and other significant changes to the terms and conditions of the contract; [c] any variation order or amendment [except in cases of extreme urgency] that, singly or combined with all variation orders or amendments previously issued, increases the original contract amount by more than 15 percent; and [d] the proposed termination of the contract. Complaints received in all prior review cases shall be sent to Bank for review, and the response to the complaint in such cases shall be cleared with the Bank. Complaints with allegations of fraud and corruption shall be shared with the Bank, irrespective of the thresholds.

### 10.15. Post Review Contracts

All other contracts which are not covered under prior review by the Bank will be subject to post review during implementation support missions and/or special post review missions, including missions by consultants hired by the Bank. For post review cases, the Project shall submit Technical Specifications/TORs to the Bank for review and clearance.

### 10.16. Procurement Review by the PMU, HPFD

Third party Procurement Post Review [PPR] will be undertaken for the project as part of PMU's own internal due diligence. To carry out the PPR, the PMU, HPFD will hire PPR consultants as per Terms of Reference and reporting requirements agreed with the Bank. The PPRs will be conducted semi-annually.

### 10.17. Disclosure of procurement information

The Project will disclose following documents on the project websites: [a] Procurement Plan and its updates; [b] an invitation for bids for procurement of Works, Goods, IT

system procurement, and non-consulting services; [c] request for expression of interest for selection/ hiring of consulting services; [d] contract awards of Works, Goods, IT system procurement, and non-consulting services procured following international and national procedures; [e] a list of contracts/purchase orders placed following RFQ procedures on a quarterly basis; [f] a list of contracts following direct contracting on a quarterly basis; [g] an annual financial and physical progress report of all contracts; and [h] an action taken report on the complaints received on a quarterly basis.

In addition to above, the project will provide following details to the Bank for publishing on the United Nations Development Business and the Bank external website:[a] Specific Procurement Notice [i.e., invitation for bids] for procurement of Works, Goods, IT system procurement, and non-consulting services using open international procedures; [b] Requests for Expression of Interests above US$800,000; [c] contract award details of all procurement of Works, Goods, IT system procurement, and non-consulting services using open international procedure; and [d] a list of contracts/ purchase orders placed following direct contracting procedures on a quarterly basis. Further, the implementing agency will also publish on their websites any information required under the provisions of '*suo moto*' disclosure as specified by the Right to Information Act.

### 10.18. National Procurement Procedure Conditions

The Project Procurement will follow National Procurement Procedures [NPP] conditions agreed with the Government of India under national procedures. National competition for the procurement of Works, Goods, IT system procurement, and non-consulting services according to the established thresholds will be conducted in accordance with paragraphs 5.3–5.5 of Section V of the Regulations and the following provisions:

(i) Only the model bidding documents for National Competitive Procurement [NCP] agreed with the Government of India Task Force (and as amended for time to time), shall be used for bidding.
(ii) Invitations to bid shall be advertised on a widely used website or electronic portal with free open access at least 30 days prior to the deadline for the submission of bids, unless otherwise agreed in the approved procurement plan.
(iii) No special preference will be accorded to any bidder either for price or for other terms and conditions when competing with foreign bidders, state-owned enterprises, small-scale enterprises, or enterprises from any given state.
(iv) Except with the prior concurrence of the IBRD, there shall be no negotiation of price with the bidders, even with the lowest evaluated bidder.
(v) The Government e-Marketplace [GeM] set-up by Ministry of Commerce, Government of India will be acceptable for procurement under RFQ method.
(vi) At the Borrower's request, the IBRD may agree to the Borrower's use, in whole or in part, of its electronic procurement system, provided that the IBRD is satisfied with the adequacy of such system.
(vii) Procurement will be open to eligible firms from any country. This eligibility shall be as defined under Section III of the Procurement Regulations. Accordingly, no bidder or potential bidder shall be declared ineligible for contracts financed by the IBRD for reasons other than those provided in Section III of the Procurement Regulations.
(viii) The request for bids/ request for proposals document shall require that Bidders/ Proposers submitting Bids/ Proposals include a signed acceptance in the bid, to be

incorporated in any resulting contracts, confirming application of, and compliance with, the World Bank's Anti-Corruption Guidelines, including without limitation the IBRD's right to sanction and the IBRD's inspection and audit rights.

(ix) The Borrower shall use an effective complaints mechanism for handling procurement-related complaints in a timely manner.

(x) Procurement Documents will include provisions, as agreed with the IBRD, intended to adequately mitigate against environmental, social [including sexual exploitation and abuse and gender-based violence], health, and safety ["ESHS"] risks and impacts.

### 10.19. Record Keeping

All procurement records pertaining to award of tenders/selection of consultants, including tender notification/advertisement, registers pertaining to sale and receipt of bids, bid/proposal opening minutes, bid/technical and financial evaluation reports and all correspondence pertaining to bid evaluation, communication sent to/ shared with the Bank in the process, bid securities, and approval of invitation/ evaluation of bids/proposals will be maintained by the PMU/DPOs/APOs/GP level institutions, and will be provided to the Bank during mission, PPRs and wherever required.

### 10.20. Contract Management

The procurement officials in the PMU and district offices aided by identified thematic area experts will be responsible to monitor and supervise overall procurement implementation at state/ district/ sub-district level to ensure that the intended benefits and outcomes of contracts are achieved under the Project. At state level, PMU procurement staff will be responsible for contract monitoring and supervision of contracts awarded by PMU. At DPO level, contract supervision and monitoring will be done by technical staff at DPOs/APOs level [Agriculture, Animal Husbandry/Engineering staff of technical wing of DPO level and Forest Extension and Social Extension staff at APO level] of contracts awarded by DPOs/GPs in the project areas.

### 10.21. Transparency and Social Audit

Social audit is a tool for social accountability mechanism that empowers the people in communities to be able to participate in planning, decision making, implementation, monitoring and evaluation of projects. It is the medium through which information is disseminated to the community and citizens, in general, and they get the opportunity of evaluating the works implemented and judge their procurement, quality, effectiveness and conformity to accepted norms.The details of Social Audit have been described in the COM.

# 11. Environmental and Social Framework:

## 11.1. Project Background:

The Government of Himachal Pradesh (GoHP) is preparing the Integrated Project for Source Sustainability and Climate Resilient Rain-fed Agriculture with financing from the World Bank. The project will be implemented in 10 of 12 districts of Himachal Pradesh (except Kinnaur and Lahaul and Spiti) covering 428 selected Gram Panchayats (GP) of 32 Development Blocks The project development objective is 'to improve upstream watershed management and increase agricultural water productivity in selected Gram Panchayats in Himachal Pradesh'. Under the project, investments will be made in measures to improve sustainable land and watershed management, to promote the sustainability of perennial water sources and to support diversification and commercialization of agricultural value chains. A new institutional arrangement for addressing complex multi-sectoral concepts such as sustainable landscape management, involving multiple sectors and line departments will be piloted. Lessons from the HP Mid Himalayan Watershed Development Project (HPMHWDP) that was completed 2017, have been incorporated into the project design.

## 11.2. Applicability of World Banks Environmental and Social Framework:

The World Banks Environmental and Social Framework has been applied to the project to assess, manage and mitigate any risks or direct, indirect and cumulative impacts that may arise because of project activities. This report contains the findings and instruments prepared to address the environmental and social risks, comprising of Environmental and Social Assessment and Environmental and Social Management Framework and Plans

## 11.3. Environmental and Social Assessment:

The project involves specific investments and interventions on i) sustainable land and water management measures like check dams and bio-engineering structures ii) forestry plantations, nursery development and seed management, weed management, spring development, forest and pasture management, forest fire prevention and piloting of silviculture systems; iii) water distribution systems with drip and sprinkler irrigation technology; iv) adoption of Climate Smart Agriculture practices for existing cropping patterns and facilitate diversification into high value crops; rural infrastructure (foot bridges, ropeways); v) promote agribusiness clusters including technical assistance to farmers groups and infrastructure provision to facilitate storage, packaging, waste management as well as last-mile linkages in agriculture and livestock; and vii) undertake institutional capacity building for integrated watershed management and making policy trade-offs focusing on the Himachal Pradesh Forest Department (HPFD).

The environmental and social assessment (ESA) comprised of a review of a) secondary research including information from government documents and studies, academic journals, findings from other projects safeguards implementation and b) primary research conducted through site visits, and stakeholder consultations in 20 GPs in 8 project districts. The Assessment details the Legal and Policy Framework in the State, the findings of of the Stakehlder Analysis and Engagement exercise, the Environmental and Socio-Economic Baseline in the State, and based on these identifies the Environmental and Social Risks and Impacts of the project.

### 11.4. Environmental Assessment Summary:

The project acitivities are assesed to pose a moderate degree of risk. Risks and impacts of project activities on biodiversity and the provision of ecosystem services as well as key sources of Green House Gas (GHG) emissions and potential sources of pollution have been evaluated. Potential risks to biodiversity and ecosystem services and from pollution could arise from i) unmanaged chemical pesticide and fertilizer use and agricultural run-off, ii) use of non-native varieties, iii) habitat and land-use conversion and un-sustainable harvesting of NTFPs iv) construction and repair of erosion control and water storage and distribution structures; temporary and small scale impacts relating to civil works, including on air, water, debris, soil, noise, drainage and aesthetics; v) improper disposal of agricultural waste and construction waste. The main sources of pollution under the project are from the application of chemical pesticides, fertilizer and unmanaged manure and Green House Gas (GHG) emission under the project may arise from the application of fertilizers, pesticides and compost. The Ex Ante Carbon Balance Tool (ExACT) tool has been applied to the project and the findings suggest, that due to extensive plantation and soil and water conservation measures, the interventions lead to no net emissions and overall, contribute positively to carbon sequestration. No adverse or irreversible impacts to critical habitats or cultural heritage are expected.

### 11.5. Social Assessment Summary:

The SA covers the potential for small scale, manageable social risks and impacts that come from (i) small scale infrastructure related to soil and water conservation; water harvesting, storage and distribution; ii) delineation of grazing, pasture and nursery areas; and (iii) requirements for voluntary land donation. Other potential social risk is exclusion of disadvantaged and vulnerable groups such as small and marginal farmers, nomadic tribes & transhumant, scheduled castes and scheduled tribes from project institutions and project benefits such as farm irrigation inputs, seeds and other improved farming inputs and training. Conflicts could also arise from sharing and management of water systems, fodder lands/pastures and forests as community regulated common resources. While most interventions are likely to be small scale, and the impacts are not expected to be significant, the capacity of the borrower to implement and manage the above social risks as well as those related to community and contract labor, community health and safety and sustained stakeholder engagement raises the social risk profile to moderate.

### 11.6. Findings of Stakeholder Consultations:

The key stakeholders of the Project include Gram Panchayats, farmers groups/cooperatives, Village Forest Development Committees (VFDCs), pastoralists and transhumant, as well as women's groups. HPFD through its field staff and consultants engaged with rural communities and potential project participants in 20 GPs of 8 districts. This included consultations and engagement with tribal communities and their community leaders, largely in Chamba and Mandi districts. In addition, more focused consultations were also held the with the nomadic, transhumant tribes, mainly *Gaddis* and *Gujjars*. The main feedback from consultations with the tribal communities has been around the need for more information on Project activities, specially opportunities and benefits for the tribal communities around irrigation, horticulture, fodder development and livestock production and health services. The key concern voiced by women was the drop in

opprtunities accesible on livelihood skills for destitute and women above the age of 45. Other issues, concerns and needs raised during the village consultations were related to: protective fencing from wild animals, access pathways and bridges over the drains and streams(nullahs), check dams and ponds for irrigation, plantations for stabilizing mountain slopes and preventing landslides, preventive measures for forest fires, more planting of medicinal fruit and fodder rich plants, development of pastures for providing fodder to livestock, opportunities for local employment in project activities, village camps on horticulture and veterinary services as well as on forest rights.

### 11.7. Capacity of Himachal Pradesh Forest Deparment to Implement the ESF:

The Government of HP is familiar with the World Banks environmental and social safeguard policies as well as the new ESF, having implemented Bank supported projects in roads, watersheds, horticulture and hydropower projects. The HPFD has good experience of implementing the Bank's environment and social safeguards under the recently completed Mid Himalayan Watershed Development Project. The environmental management and social safeguard practices and guidelines were well mainstreamed in the Mid Himalayan Watershed Project, through the society and thus has a good track on environmental and social safeguards. HPFD is also implemeting projects supported by JICA and KFW on the themes of forestry and ecosytem management. The project will leverage the State's broad-based experience and expand it to the relatively newer areas of labor and working conditions, stakeholder engagement and community health and safety. The ESA has noted the presence of basic safeguard capacity with the HPFD, and has recommended institutional capacity building measures for HPFD and other line departments such as animal husbandry, agriculture, horticultre and rural development

### 11.8. Legal and Policy Framework:

The Assssement has identified the Legal and Policy Framework at the National and State level that will apply to the project. The key environmental laws and policy at the national and state level on forests, biodviersity, pollution, waste management and agriculture and social laws and policy on constitutional safeguards, land acqusition and transfer, Panchayati Raj Institutions, Scheduled Tribes and labour and their applicability to the project have are covered by the assessment.

### 11.9. Environmental and Social Framework:

The Environmental and Social Framework addresses the applicable Environmental and Social Standards (ESS) in lieu of the risks and impacts identified by the assessment and have prepared specific tools and guidance to address these risks. A summary of these is outlined below:

### ESS2 Labour and Working Conditions:

The project will utilize largely contract workers who will be employed through small, local contractors. Less than 10% of the contract labour is anticipated from other parts of the state, as well as from Bihar and Nepal. To address any labour related risks and to promote health and safety, Labour Management Procedures (LMP) proportional to the project risks has been prepared, with specific provisions for working conditions, occupational health and safety, child and forced labour, gender-based violence, management of labour influx, as well as labour focused grievance redress mechanism. The

LMP also includes requirements on Environmental, Health and Safety Guidelines (EHSGs) that are included in the standard bidding documents. These works are likely to engage very small share of community labour as well. The scale of construction contracts is envisaged to be small-scale, which will not require labour camps and most of the labour is expected to come from nearby areas. The Gender Based Violence risk of the project is assessed as low.

**ESS3 Resource Efficiency and Pollution Prevention and Management:**

The project has integrated resource efficiency through its design and interventions by focusing on water source sustainability and increased water efficiency in agricultural decision making. Green House Gas (GHG) emissions are anticipated from the application of fertilizers, pesticides and compost in agriculture. The carbon emissions anticipated from annual cropping (agriculture) is 34,517 tCO2eq/year and from fertilizer use is 95,028 tCO2eq/year, however this is less than the emissions without the project scenario as the project will demonstrate and promote climate smart practices that reduce GHGs through reduced chemical fertilizer use. The overall GHG balance of the project is negative overall, with an estimated -87,294 tCO2eq/year sequestered because of afforestation and degraded forest restoration activities being undertaken under the project. The net GHG benefit on a per hectare basis for the project area is estimated to be 0.6 tCO2/ha/year.

Risks from pollution are anticipated from the application of chemical pesticides, fertilizer and unmanaged manure. The project will also involve pest management in livestock to reduce worm and pest load in livestock. Environmental impacts could result from runoff of pesticides and nutrients, leading to water, soil and air pollution, eutrophication, a loss of biodiversity and increased pest resistance.

To address these, an **Integrated Pest and Nutrient Management Plan (IPNMP)** has been prepared to promote safe, effective and environmentally sound pest and nutrient management in plantation, agricultural, horticultural and animal husbandry interventions. The aim is to promote the use of biological control methods and reduce synthetic chemical pesticides with a provision to increase capacity on addressing the same. The IPNMP contains the list of pesticides prohibited and restricted under the project (attached as **Annex.4**) and also provides guidance on the proper storage, handling and disposal of pesticides. The IPNMP will apply to forestry operations including nursery development, development of high-quality seed stands, plantation activities and eradication of invasive species and climate smart agricultural (CSA) practices including high-value fruit and vegetable production, diversification of agricultural and promotion of techniques such as organic farming, zero-budget natural farming, and promotion of water-efficient and drought resistant varieties of crops. The project IPNMP covers the generic approach, tools and mitigation measures; however, crop specific Package of Practices by subject matter specialists will be prepared for all crops taken up and promoted under the project.

**ESS4 Community Health and Safety:**

The main risks and potential impacts to community health and safety would arise from small scale constriction work resulting in accidental trespassing and personal injury for humans, including children and livestock, from the use of chemical pesticides and fertilizers in agricultural land. Risks from stagnant water and associated vector borne

diseases and safety of water harvesting structures are a possibility. Public health risks from increased labour influx and mobility are low given that most of the construction labour will be locals, and a very small share of construction labour will be from outside the state. The risk of traffic-related accidents and injuries to workers and local communities is also very low.

HPFD will implement specific risk mitigation measures to protect the project affected communities form potential risks and hazards that impact the community health and safety. The specific mitigation measures related to community health and safety especially for i) water quality and availability, disease prevention and communicable diseases; ii) general work site related hazards on dust, sound and debris; iii) fencing of water impounding structures and other construction areas, especially those closer to habitations. These mitigation measures are included in Labour Management Procedure, IPNMP and Community Health and Safety Guidelines.

**ESS5 Land Acquisition, Restrictions on Land Use and Involuntary Resettlement:**

HPFD will not be acquiring any private land or cause any involuntary physical resettlement or relocation. Any intervention or construction activity requiring acquisition of private land and/or physical relocation will fall under the 'negative' list. Project investments on water harvesting, storage and distribution systems will be made on government as well as private land that will be donated voluntarily to the GP, following the due diligence provided under ESS5. A Resettlement Policy Framework (RPF) has been prepared to address and mitigate any adverse social and economic impacts arising from voluntary land donation, and includes specific screening, documentation and mitigation measures to ensure voluntariness and non-coerciveness of the land donation process.

Investments in new grazing pastures, fodder plots in forest areas and new plantations may involve temporary restrictions that have been agreed and imposed by the communities. Community-imposed use restrictions that may restrict traditional usage, and adversely affect the most vulnerable households. Such investment interventions will be screened for adverse impacts on traditional use and customary rights, and when needed suitable mitigation action plans will be prepared and implemented by the beneficiary groups, GPs and HPFD.

**ESS6 Biodiversity Conservation and Sustainable Management of Living Natural Resources:**

Under the project, potential risks to biodiversity and ecosystem services could arise from unmanaged chemical pesticide and fertilizer use and agricultural run-off, use of non-native varieties and replacement of local varieties with hybrid or exotic trees, plants, and animal species, habitat and land-use conversion, un-sustainable and un-scientific harvesting of NTFPs and unmanaged grazing.

A **Biodiversity Management Plan (BMP)** has been prepared with key strategies for biodiversity conservation that include: i) site screening for avoiding critical natural habitats; ii) promotion of indigenous species in plantations, fodder plots and nurseries and avoidance of exotic, invasive species; iii) adoption of sustainable harvesting and production of NTFP; iv) updating of peoples biodiversity registers in recently de-notified

wildlife panchayats and community capacity building; v) negative list to ensure biodiversity conservation, prevent forest fires, habitat fragmentation, land use modifications, and prevent felling of trees. The ESMF contains the screening and eligibility checklists to ensure activities that would adversely affect biodiversity such as felling of trees, activities causing irreversible impacts to critical and natural habitats, activities causing forest fires, felling of trees without a permit. Such activities are not financed under the project.

**ESS7 Indigenous Peoples/Sub-Saharan African Historically Underserved Traditional Local Communities:**

Indigenous Peoples (scheduled tribes) are dispersed in varying numbers across the ten project districts and the identified Gram Panchayats. Their share in the project areas ranges from 1-25%, however they are largely concentrated around the project districts of Chamba and Kangra. Project interventions will not involve any land acquisition, involuntary resettlement, physical relocation, or economic displacement that will affect either tribal households or non-tribal households. Project interventions related to plantations, nurseries, fodder plots/pasture lands, community tanks are likely to involve voluntary, community adopted restrictions of access and usage (such as rotational or seasonal grazing or social fencing) in some cases. This may adversely affect some tribal groups. To mitigate any potential adverse impacts, such interventions will be screened for any potential 'restriction impacts' on the lives and livelihoods of potentially affected peoples, especially tribal groups, and these interventions will have to follow the principles, guidelines and mitigation measures provided in the resettlement policy framework and the Indigenous Peoples Planning Framework/ Tribal Development Framework (TDF).

**Tribal Development Frameowrk (TDF):**

TDFprovides specific measures to ensure socially and culturally compatible consultations with, and participation of the tribal communities in project implementation processes and project benefits. The risk of tribal exclusion from project interventions, investments and institutions is mitigated through: i) screening and documentation of tribal households in GPRMP; ii) prioritised targeting and inclusion in beneficiary lists; iii) consultations with tribal leaders in local laungage; iv) disaggregated beneficiary tracking v) FPIC (only when applicable); vi) support for caapcity building and convergence, including indigenous knowledge and biodiversity registers. The livestock interventions will be providing targeted project benefits to the transhumant nomadic tribes that are traditionally dependent on grazing and common pastures. The TDF also supports community-identified additional interventions that would be needed to ensure the access of tribal communities to project benefits and preparation of selected TDPs.

**ESS8 Cultural Heritage:**

The state has rich cultural heritage such as several pilgrimage sites and places of religious prominence, sacred groves and sacred water sources that could be present in the project areas. Tangible cultural heritage, or Physical Cultural Resources (PCR) in Himachal include 2 UNESCO recognized World Heritage Sites, several temples and sites of religious and spiritual significance (estimated at over 10,000) and Sacred groves, of which 350 are well documented by several more exist. The state also has a rich tradition of water harvesting and water conveyance structures. These include 'Khatris' rectangular deep pits

that are dug into the hard rock on hill slopes to collect rainwater which are present in Hamirpur, Kangra and Mandi districts and 'Kuhls' which are surface water channels found in the mountainous regions; The project may undertake activities that are located in the vicinity of a cultural heritage site and cause damage and/or disturbance to such sites; There is a possibility of archaeological finds during minor excavation during construction of tanks and other water harvesting/ conveyance structures. No negative irreversible impacts on intangible cultural heritage are envisaged; The project will attempt to build on traditional knowledge and practices on NTFPs and institutional mechanisms for the repair and maintenance of water harvesting and water conveyance structures.

Management and mitigation measures for cultural heritage will include i) Screening to ascertain the presence of any known cultural heritage sites ii) Consultation during preparation of GPRMP for identification of community acknowledged Cultural Heritage ensuring the participation of women, traditional knowledge holders and marginalized or backward groups such as tribals since such communities may not have adequate representation in the institutional structure of local governance institutions such as Gram Panchayats; iii) The project will seek to avoid disturbance to cultural heritage sites during construction and ensure that no damage through debris disposal or noise pollution is caused at any sites of cultural significance including, rocks, sacred groves or wetlands. iv) Conservation and Enhancement of Cultural Heritage, where applicable v) Application of a Chance Finds Procedure_when artefacts or sites of cultural heritage are encountered by chance while undertaking excavation during construction activities v) Further Actions to avoid any environmental or social impacts on Physical Cultural Resources (PCRs) are incorporated in the Framework and Management Plan

**ESS10 Stakeholder Engagement and Information Disclosure:**

A **Stakeholder Engagement Plan**(SEP) has been prepared under the project with the aim to adopt a systematic, transparent and participatory approach to stakeholder engagement and information disclosure, and maintenance of positive stakeholder relationships, monitoring of stakeholder feedback and implementation of an accessible and responsive grievance redressal mechanism. The SEP identifies the main stakeholders of the projects as: i) *Positively affected Project Beneficiaries*, mainly relevant community organizations, GP user groups, Gram Panchayats, farmers groups/cooperatives, joint forest management committees (JFMCs), and women's groups; ii) *Disadvantaged and Vulnerable Households*, such as landless and marginal farmers, transhumant nomadic groups (Gaddis and Gujjars), scheduled castes households, scheduled tribes, women headed households, disabled households as well as households designated below the poverty line; iii) *Potentially negatively affected groups*, such as vulnerable households donating land for community infrastructure or households facing temporary access/use restrictions from new grazing pastures, fodder plots and plantations; and iv) *Other Interested stakeholders* such as HPFD as well as line departments of Agriculture, Animal Husbandry, Horticulture, Rural Development and Panchayati Raj, and Science and Technology. Private partners involved in agribusiness and value chain development as well as NGOs associated with forestry, agriculture, horticulture, animal husbandry, natural resource management and rural development are also important stakeholders of the project.

The project has also prepared a **Gender Action Plan**, identifying and acknowledging women, including active women farmers, women livestock rearers, women headed households and women leaders of self-help groups and PRIs, as key stakeholders and

beneficiaries of the project. This will include women from vulnerable/ disadvantaged sections of the local communities, including from scheduled caste, scheduled tribe and transhumant households. Through the Gender Action Plan, Women farmers/land owners, workers, women headed households and community leaders will be supported by range of actions, especially systematic identification and participation in village plans, beneficiary group leadership, training programs, and investment planning and in targeted beneficiary lists.

**Table No. 11.1 : Key Gender Actions under IDP**

| Project Component | Gender Actions |
|---|---|
| Component 1: Sustainable Land and Water Resource Management | • The main implementers and beneficiaries will be HPFD staff and relevant community organizations, including women's groups.<br>• Agriculture extension officers and social extension officers will undergo training to effectively understand and adapt the specific needs of women cultivators in GP-RMPs.<br>• As a part of the participatory rural appraisal (PRA) exercise, the preparation of GP-RMPs will take active steps to include interventions suggested by women's federations and community-based organizations with active participation from women. |
| Component 2: Improved Agricultural Productivity and Value Addition | • The list of sub-project investments will include a subset of activities which are predominantly carried out by women. These include diversification of crops to high-value vegetables, livestock-based activities for small and large ruminants, livestock mangers and post-harvest interventions such as maize chaffing.<br>• To incentivize uptake of technologies/innovations under these activities among women cultivators, the project will subsidize the beneficiary contribution for individual women cultivators and women's groups.<br>• User groups formed to manage resources under agriculture extension services will have active participation from women including appointing women in decision-making roles such as treasurers.<br>• The matching grant instrument will subsidize essential productive assets (in addition to the on-farm irrigation equipment) to individual farmers, specifically active women farmers and women-headed households. |

The Project has established a **Grievance Redress Mechanism (GRM)** with the aim to respond to queries or clarifications or complaints about the project and address complaints/concerns and grievances of the stakeholders. The GRM will focus on corrective actions that can be implemented quickly and at a relatively low cost to resolve identified implementation concerns, GRM will also serve as a channel for early warning, helping to target supervision to where it is most needed and identify systemic issues. The institutional arrangement, channels, and processes for a successful GRM are part of the SEP as well as the COM.

### 11.10. Environmental and Social Management Framework:

Apart from the plans to ensure compliance with Standards mentioned in the section above including the Labour Management Procedure, Community Health and Safety Guidelines, Integrated Pest and Nutrient Management Plan Resettlement Policy Framework, Biodiversity Management Plan, Tribal Development Framework, Gender Action Plan and Stakeholder Engagement Plan (SEP), the Framework also consists of screening tools, checklists, and guidelines. These include; i) Guidelines on Participatory Planning for GPRMPs ii) the Negative List of Activities iii) Screening Procedures and Checklists (attached as Annexure-5) iv) Activity wise Environmental and Social Management Plans (to be updated as sample GPRMPs are available) for Forestry Operations, Soil and Water Conservation, Agriculture and Allied Activities and Construction of minor Infrastructure (attached as Annexure-6). The ESMF also includes suitable arrangements for implementation, supervision, and monitoring of the various mitigation measures on environmental and social aspects.

### 11.11. Implementation Arrangements:

The project will have specific arrangements made at state, district and block level. This includes appointment of a SMS (Social) and SMS (Environment) at PMU and Experts at DPO and APO levels. Further the PMU, IDP will guide the Field level agencies on implementation of ESMF and build their capacity through capacity building and IEC strategy. The project would ensure targeting and inclusion of the key vulnerable groups especially the landless, agriculture labor, nomadic tribes, and women headed households from SC/ST households within the planning and implementation processes and community institutions. Such vulnerable households will be identified and targeted in the village planning exercise as well as in beneficiary selection for individual and group assets, formation of beneficiary groups, livelihood support interventions, dedicated consultations and identification of special measures for such vulnerable households. Environmental and Social action to be taken up during various stages of projects from pre-planning till operation and maintenance by various ESS Plans and Frameworks are attached as Annexure-7. Through the Gender Action Plan, Women farmers/land owners, workers, women headed households and community leaders will be supported by range of actions, especially systematic identification and participation in village plans, beneficiary group leadership, training programs, interventions and investment planning and in targeted beneficiary lists. The existing cadre of largely women social mobiles will be provided training support to implement dedicated interventions for women and special vulnerable groups. Convergence with existing state level schemes for skill and enterprise development and financial inclusion will be supported. Special pilot interventions in partnership with resource agencies will be explored.

### 11.12. Monitoring, Auditing and Reporting:

In order to carry out monitoring, evaluation and reporting, project will have specific arrangements made at PMU, DPO and APO level as mentioned above. This includes continuation of appointed Environmental and Social Subject Matter Specialists for the project period at PMU level. Further the project will have one District Project Officer in each District to guide the APOs on environmental and social matters related to project components, DPO will guide the APOs on how to implement the ESMF and ESMP. At the

APO level there will be two Forest Extension Officers and two Social Extension Officers. They will oversee the implementation of the provisions of ESMF and ESMP. The PMU level SMS-E and SMS-S will train the FEOs and SEOs in the ESMF and ESMP implementation. In addition several orientations and trainings are proposed as a part of this ESMF to build their capacity. The PMU will be in charge of implementing the ESMF. All the GPRMPs will be visited at regular intervals by SMS-E and SMS-S to check if all environmental and social safeguard requirements are met and to identify any issues that need to be addressed. PMU would submit quarterly progress reports to The World Bank on environmental and social safeguards implementation. The concurrent internal social monitoring will be done as part of the regular monitoring by the PMU and DPO and APO level implementing agencies. However, , project will appoint Independent Environmental and Social Monitoring and Evaluation Consultants to do the environmental and social monitoring and evaluation at the beginning of 3rd and 5th year of project implementation. Half yearly, by 15th July and 15th January, the PMU will prepare a report, to be submitted to The World Bank, of the environmental and social safeguards status in the project districts including data and analysis of relevant parameters such as Environmental (Changes in Groundwater Table, Surface Water Quality, Soil Quality, Survival of plantations, Instances of archaeological chance finds, Instances of Pest and Disease attacks, Reduction in pest and disease attacks, Number of Farmers using bio-pesticides, Reduction in water usage for Agriculture and Horticulture, Produce per unit of water used, Number of climate resilient varieties used, Number of communities taking up conservation and source sustainability activities, Any induced impacts/activities arising from undertaking the project financed investments such as demand for (a) rural/feeder roads, (b) change in agriculture crops, due to increase availability of water and support services, Number of trainings organized and type of trainings, etc.) and Social (Number of grievances registered and resolved, Number of court cases, Number of women members in UGs/CAGs/ Federations, Number of trainings held, Number of women trained, Income restoration of communities, Livelihood Enhancement, Land holding status, Literacy, Housing, Ownership of household assets, etc.) indicators. The ESMF will be suitably revised as and when required by the PMU.

### 11.13. Capacity Building Strategy:

The Project will give its staff and the participating communities some exposure to the Environmental and social safeguards issues. For seamless adaption of the environmental and social principles and safeguards by all the implementing partners, awareness creation and capacity building becomes necessary. The capacity building activities may be taken up by State Forest Training Institute at Chail & Sundernagar, other specialist institutions, consultants, etc. to deliver trainings to project stakeholders on environmental and social safeguards and their management. This capacity building and IEC strategy has been outlined as part of this ESMF developed for the project aims at building environmental and social awareness and management capacity in the project administration structure as well as in the intended target communities. The objectives of the capacity building initiatives are a) To build and strengthen the capability of Project PMU, DPOs and APOs staff, participating implementing agencies, to integrate sound environmental and social management into GPRMPs implementation and b) To orient the project staff, participating implementing agencies and communities to the requirements of the project's ESMF. Systematic capacity building initiatives need to be introduced only after completion of Training Needs Assessment. All the trained staff and master trainers developed for different training components will in turn conduct onsite or offsite trainings (at district,

block or GP levels) depending on training requirement. The training program consists of Orientation/ Learning Training Programs, Training on the ESMF and ESMP and Training on Environmental and Social Management. The total estimated cost of training on Environmental and Social Management for members of project, Participating Agencies' Staff, NGOs, etc. is Rs. 1 Crore.

### 11.14. Environmental and Social Management Budget:

The total administrative budget for environmental and social management activities under the proposed project has been worked out as Rs. 15.48 Crore. The cost of implementing the proposed mitigation measures is not included in this costing.

### 11.15. Means of Disclosure:

This Final ESA, ESMF, ESMP along with RPF and the TDF are disclosed on the project website along with the Hindi translation of the executive summaries. The documents along with the executive summaries in Hindi, will be kept at the PMU, DPOs and APOs Offices and District Collector's Office, for interested persons to read and copy. This will be made available at the Gram Panchayat Offices of the concerned villages.

An Environmental and Social Management Framework (ESMF) have the following sections.

1. Participatory Planning for GPRMP
2. Negative List of Activities
3. Screening of GPRMP–
4. Analysis of Alternatives
5. Climate Change Considerations
6. Gender Strategy and Action Plan
7. Grievance Redressal Mechanism
8. Implementation Arrangements
9. Monitoring and Evaluation
10. Capacity Building
11. Budget
12. Environmental and Social Management Plan

**Environment and Social Standards (ESS) Plans**

ESS2 Labour Management Procedures
ESS3 Resource Efficiency and Pollution Prevention and Management-IPNMP
ESS4 Community Health and Safety Guidelines
ESS5 Land Acquisition, Restrictions on Land Use and Involuntary Resettlement-Resettlement Policy Framework (RPF)
ESS6 Biodiversity Conservation and Sustainable Management of Living Natural Resources (Biodiversity Management Plan)
ESS7 Tribal Development Framework (Indigenous Peoples Planning Framework)
ESS8 Cultural Heritage
ESS 10 Stakeholder Engagement Plan

These all are included in the ESA/ESMF and ESS Reports available on the project website www.hpidp.org

# 12. Monitoring, Evaluation and Learning (MEL)

## 12.1. Background

Monitoring and evaluation (M&E) are two complementary but distinct processes. Monitoring consists of tracking inputs, activities, outputs and other aspects of the project on an ongoing basis during the implementation period as an integral part of the project management function. Evaluation, on the other hand is a process by which the project's intermediate and final outcomes, impacts, and implementation performance are assessed. Projects are evaluated at discrete points in time along some key dimensions i.e. relevance, efficiency, efficacy, impact and sustainability. Monitoring and evaluation both assess achievements, but their emphases differ. Monitoring generally refers to an ongoing process of information collection primarily for program management, its focus on activities. Evaluation takes a wider and longer-term view of the entire program and involves less frequent programmatic reviews, its focus on outcomes. The M&E is expected to play the role of a social observatory, using different methods and tools to provide continuous feedback to the project management and other stakeholders on the progress and quality of implementation of Mission activities and facilitate strategic and operational decisions, mid-course corrections and adaptations. Integrated Development Project is based on the CDD approach i.e. partnering with communities and local units of government, leading to the efficient delivery of basic services and when sustained over time measurable reductions in poverty particularly among the poorest populations and communities. All the Stakeholders and beneficiaries will be involved in the process. This implies that the project has to adopt a flexible strategy to be able to be responsive to the change. It is therefore crucial for the project to develop a reliable information system which is timely and accessible, and which is also reflective about the project's processes.

## 12.2. Objectives:

The main objectives of MEL are to:

- Have accurate and timely information on the project's progress and performance particularly the Results Framework indicators, for project management and for reporting progress.
- Provide insights for implementation improvements during the course of the project.
- Support a comprehensive mid-term and end-of-project assessment of the outcomes and impact of the project vis-à-vis the project development objectives and the sustainability of project interventions.
- Include the beneficiary community in monitoring of works and transparently communicate the project and the costs with them.

The MEL system of IDP shall be guided by the principles that:

- The MEL system generates only relevant information that are required and used at the appropriate level and frequency for the decision-making process,
- The system should help in assessing the outcomes and impact of the project vis-à-vis the project development objectives, and
- The system should contribute to improve the capacity of the poor and other stakeholders involved in the process of planning and implementation of the project.

### 12.3. Components of MEL:

The MEL system shall have seven distinct components with different objectives, periodicity, and various internal and external stakeholders responsible, as shown below:

| | MEL Component Description | Periodicity | Responsible |
|---|---|---|---|
| 1 | **Theory of Change:** Diagram depicting how the project inputs will lead to outputs and project development outcomes | Review every 6 months | Project's committee with WB support |
| 2 | **Project Management Information System (PMIS):** Web-enabled platform for data collection and report generation | Continuous | External agency to design and implement PMIS and project staff to input data, review reports & take action. |
| 3 | **Results Framework including Key Performance Indicators**: Outcome-level indicators linked to the Theory of Change that will be used to monitoring project progress and evaluate the project impact in the performance | Continuous or twice a year as documented | Project staff to collect selected data on outputs continuously and external process monitoring agency to measure certain RF and KPI indicators twice a year; selected indicators measured by independent agency at midterm and end line surveys. |
| 4 | **Community Monitoring (Social Audit):** Citizen feedback mechanism to review beneficiary selection and enable beneficiaries to review the progress , quality and usefulness of the project investments to intended beneficiaries . | Aligned with key construction works and at least every 6 months | Gram Panchayat and Gram Sabha with support from project-trained community resource persons |
| 5 | **Process Monitoring:** Independent review of project processes and measure selected KPIs to identify ways to improve project implementation | Quarterly | External agency to conduct surveys, analyze data, and draft recommendations |
| 6 | **Performance Evaluation:** Independent assessment of the project's relevance, effectiveness (achievements of RF targets) sustainability, efficiency, and learning's | Mid-term (2022) and End-of-project (2024) | External agency to conduct independent survey, analyze data, and draft conclusions and recommendations |
| 7 | **Project Completion Report:** PMU's self-assessment of the project's relevance, effectiveness , | End-of-project (2024) | PMU |

| | | | |
|---|---|---|---|
| | sustainability, efficiency, and learnings | | |
| 8 | **Remote Sensing intelligence software** | Continuous using free or low cost satellite data | External agency to prepare a user interface and develop intelligence and forecasts using satellite data to serve two purposes: (a) as an input to PMU for remotely validating design and DPR and ongoing monitoring of irrigation and watershed and (b) as an input into project-end impact assessment on conservation and selected farmer outcomes |

## 12.4. Theory of Change

A theory of change (sometimes depicted in a results chain diagram) is a detailed description of the mechanisms through which a change is expected to occur in a project. A theory of change identifies the goals, preconditions, requirements, assumptions, interventions, and indicators of a program, providing important insight into and guidance on intervention and evaluation design. A theory of change also often identifies any underlying critical assumptions that must be in place for the intervention to be successful, that is, to lead to achieving the targeted outcomes and impacts. Figure 12.1 (Project theory of change) below depicts the project's initial theory of change as a results chain. This diagram can be further detailed and used by the PMU and external M&E agency to identify additional key performance indicators (KPIs). This diagram should be a part of all staff training and should be reviewed every 6 months and updated if needed.

**Figure 12.1 : Project Theory of Change**

Problems: Limited capacity for integrated eco-system management leading to forest degradation, soil erosion, low aquifer recharge; low agricultural productivity

| Activities | Outputs | Lower outcomes | Medium outcomes | Higher outcomes |
|---|---|---|---|---|
| TA to foster stakeholder participation | Stakeholders consultations held to ensure buy-in (A1) | Water, soil, forests, pastures resources managed according to GP-RMPs | PDO 1: Upstream watershed management improved (A6) | Improved watershed management and improved ag. water productivity lead to more sustainable use of natural resources in HP and improved farm incomes |
| TA and investments to develop and implement GP Resource Management Plans (GP-RMP) | GP-RMPs developed and implemented, providing specifications for soil, forest, pasture mgmt (A2) | | | |
| TAs and investments for hydrological monitoring network & Catchment Area Treatment (CAT) Plan preparation | Hydrological monitoring stations built & functioning | | | |
| | CAT Plans prepared & implemented (A3) | | | |
| TA to improve integrated watershed management | IWM institutional assessment conducted; time-bound action plan and implementation road map prepared and implemented | Institutions responsible for IWM are strengthened (A4) | | |
| TA for forest institutions | Functional review of forest institutions produced; action plan implemented | | | |
| | Training modules developed and delivered to HPFD staff | | | |
| Installation of public irrigation water harvesting, storage, and distribution systems | Public irrigation systems installed | Area under higher efficiency irrigation increased (A5) | PDO 2: Agricultural water productivity (value per drop) increased | |
| Cost-sharing for HH-level equipment purchase (necessary to use irrigation systems) | HH-level irrigation systems installed | | | |
| Extension services to support climate-smart ag. (CSA) technology adoption & crop diversification (necessary to increase value of goods produced with irrigation) | Training modules developed and delivered to farmers | CSA and high-value crops adopted by farmers accessing new irrigation with project support (A7) | | |
| Cost sharing for HH- and group-level equipment purchase (necessary to adopt CSA/high-value crops) | Agricultural inputs and technology procured and delivered to farmers/groups | | | |

Notes/ Assumptions
1. Stakeholders are willing to participate in project; 2. Holistic GP-RMPs can be drawn up in a timely manner and employed effectively; 3. CAT Plans used effectively; 4. Strengthened institutions use GP-RMPs to improve watershed management; 5. Water productivity increase will be assured by limiting investments to those stipulated in GP-RMPs; 6. Watershed management improvements are sustained; 7. Agriculture research/ extension and cost-sharing for inputs/ equipment is sufficient to assist farmers to adopt CSA and high-value crops.

## 12.5. Project Management Information System (PMIS)

A qualified external agency will be procured to design and implement a PMIS. The indicators to be measured will be identified by the agency building on the RF and KPIs, through inputs from a working group including the project's M&E team, component leads at the PMU, senior PMU management and selected district staff. The reports to be generated will be designed based on consultation with all the users at state, district and APO levels. The data will be collected by project district teams largely with inputs from community resource persons and selected PMU staff. Adequate time should be allotted for data collection, and this should be monitored and managed to ensure timely and accurate data entry. The PMIS should be the basis for measuring the project's progress indicators, avoiding separate data stores to the extent possible. This is a challenging task that requires careful planning and resource allocation and will be driven by the project's senior management. The RF indicators where the means of verification is the PMIS should come from the PMIS through automatically generated reports at the block, district, and project

levels. The RF and target values for indicators should be divided into district-specific targets.

This system will be the MEL data collection and reporting platform of the project through dynamic capturing of data and robust reporting at the state, district, and block level. The main objective of this system is to provide information for monitoring the physical progress, procurement and contract progress by project components, sub-components, and main activity and can also be used for budgeting (both for Govt. of H.P. and the World Bank) and consolidated accounting of expenditures (the State Treasure system will be used as the primary system for detailed expenditure tracking). Systematic Tracking of Exchanges in Procurement (STEP) will be used to track procurements, and the PMIS will therefore be used only to track project implementation progress i.e. inputs, activities/outputs, and outcomes.

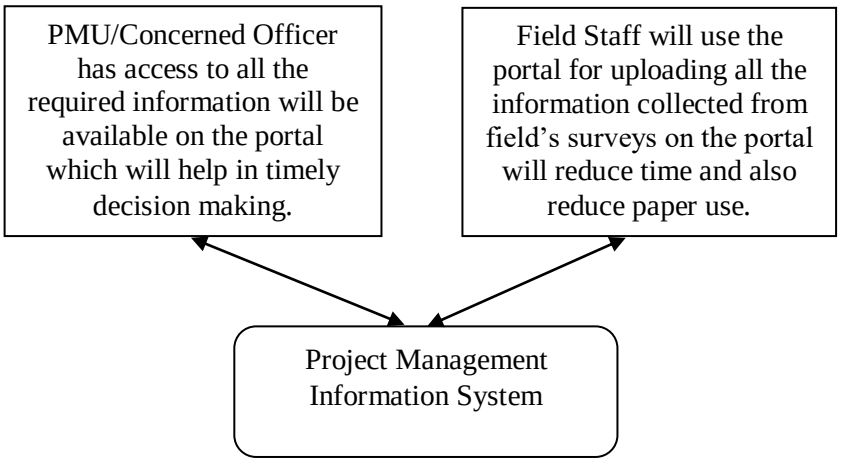
The PMIS will be linked to a public website, including a separate portal accessible only to project staff, to disseminate M&E information, and all the reporting will be done through the PMIS. The project inputs and related outputs shall be monitored. Relevant dash boards, MIS analytics, and alerts systems would be integral parts of PMIS. Thus, the PMIS will primarily include a smart phone and a desktop/laptop browser application to:

(1) Gather and input the project interventions and village-level aggregated outreach numbers by intervention type, selected farmer-level data (collected by project staff or in some cases through community monitoring), process monitoring data, any other M&E data, and other relevant secondary data;

(2) Visualize the data, including using GIS; and

(3) Produce standard and customized reports to inform the PMU and other stakeholders on the project's implementation progress.

The monitoring data and reports produced by the PMIS will be used by the PMU to track project implementation and performance and to inform the performance evaluation.



## 12.6. Results Framework

A results framework (RF) is an explicit articulation of the different levels of results expected from a particular intervention in a project. The results specified typically comprise the longer-term objectives (project development objectives, PDOs) and the intermediate outcomes and outputs that precede and lead to those desired longer-term objectives. Outcomes and impacts are the main focus of a results framework. The following table depicts the project's results framework. The RF is not typically updated unless there are large changes to the project's objectives. However, additional supporting KPIs may be defined and added to the project monitoring.

## Table 12.1: Project Development Objective (PDO) Indicators

| Indicator Name | DLI | Baseline | Intermediate Targets | | | | End Target |
|---|---|---|---|---|---|---|---|
| | | | 1 | 2 | 3 | 4 | |
| **To improve upstream watershed management in selected Gram Panchayats (GPs) in Himachal Pradesh.** | | | | | | | |
| Land area under sustainable landscape management practices (CRI, Hectare(Ha)) | | 0.00 | 5,000.00 | 10,000.00 | 10,000.00 | 11,000.00 | 12,000.00 |
| **Description**: The indicator measures, in hectares, the land area for which new and/or improved sustainable landscape management practices have been introduced. Land is the terrestrial biologically productive system comprising soil, vegetation, and the associated ecological and hydrological processes; Adoption refers to change of practice or change in the use of a technology promoted or introduced by the project; Sustainable landscape management (SLM) practices refers to a combination of at least two technologies and approaches to increase land quality and restore degraded lands for example, agronomic, vegetative, structural, and management measures that, applied as a combination, increase the connectivity between protected areas, forest land, rangeland, and agriculture land.<br><br>**Frequency/Data Source/Methodology/Responsibility for Data Collection:** Continuous. PMIS. Land survey using GPS geo-fencing (Linked to GIS files). DPO and aggregated at PMU. Additionally ground-truthing in midterm and endterm evaluation by M&E Agency. | | | | | | | |
| Area managed for improved soil (Hectare(Ha)) | | 0.00 | 0.00 | 200.00 | 500.00 | 1,000.00 | 1,200.00 |
| **Description**: This is a supplemental indicator that will measure the area under all soil conservation investments, including physical investments (check dams, contour bunds, etc.) and improved farming practices that increase soil quality and/or reduce erosion.<br><br>**Frequency/Data Source/Methodology/Responsibility for Data Collection:** Continuous. PMIS. Land survey using GPS geo-fencing (Linked to GIS files). DPO and aggregated at PMU. Additionally ground-truthing in midterm and endterm evaluation by M&E Agency. | | | | | | | |
| Number of reforms recommended by the institutional assessments that are implemented (Number) | | 0.00 | 0.00 | 0.00 | 1.00 | 3.00 | 5.00 |
| **Description:** This indicator will measure progress towards institutional and policy reform based on the completion of reforms identified in the Forest Department Functional Review and the Integrated Watershed Management Institutional Review. These reforms may include inter alia the (a) development and implementation of a comprehensive HPFD IT and knowledge strategy that integrates all relevant applications on a common geospatial platform and allows for watershed-level planning; (b) development and implementation of a comprehensive HPFD M&E system; (c) establishment of a centralized staff performance monitoring system; and (d) development of regulatory and management standards for pastures.<br><br>**Frequency/Data Source/Methodology/Responsibility for Data Collection:** Continuous. PMIS. As reported by PMU/HPFD. | | | | | | | |

| Indicator Name | DLI | Baseline | Intermediate Targets | | | | End Target |
|---|---|---|---|---|---|---|---|
| | | | 1 | 2 | 3 | 4 | |
| **To increase agricultural water productivity in selected Gram Panchayats (GPs) in Himachal Pradesh.** | | | | | | | |
| New farm area brought under higher efficiency irrigation through project support in targeted GPs (Hectare(Ha)) | | 0.00 | 0.00 | 50.00 | 100.00 | 150.00 | 200.00 |
| **Description:** This is an outcome-level PDO indicator that will measure the new farm area brought under higher efficiency irrigation systems in the GPs targeted by the project. Higher efficiency irrigation systems include drip, sprinkler, and other water storage, distribution, and delivery systems with efficiencies higher than traditional flood irrigation. This indicator measures the short-term (2 years) behavior-change outcome of greater adoption of higher efficiency irrigation systems, which will be influenced by project investments in improved extension and partial funding for group and household-level water infrastructure. In the medium term (by end of project, EOP), the combined adoption of these improved irrigation systems and higher-value crops is expected to lead to improved agricultural water productivity, and in the longer-term (beyond EOP) these outcomes are expected to lead to improved farmer incomes and greater climate resilience.<br><br>**Frequency/Data Source/Methodology/Responsibility for Data Collection:** Continuous. PMIS. Self-reported farm land data by farmers. APO and AEO will collect data; DPO monitors. Groundtruthed in mid-term and endline evaluation by M&E Agency. | | | | | | | |
| Share of participating farmers adopting climate smart agriculture practices (Percentage) | | 0.00 | 0.00 | 15.00 | 30.00 | 40.00 | 50.00 |
| **Description**: This is a medium-term outcome-level indicator that will measure behavior change by farmers project participants in terms of sufficient adoption of recommended CSA practices. This is driven by project investments in improved extension and access to finance for inputs required to adopt CSA technologies. "Project participants" is defined as all farmers that are provided with any Component 2 activity, including trainings, demonstrations, inputs, marketing, and grants. In the longer-term, it is expected that adoption of CSA practices will lead to increased agricultural water productivity, increased carbon sequestration, and increased climate resilience.<br><br>**Frequency/Data Source/Methodology/Responsibility for Data Collection:** 1 per rabi and 1 kharif in each year. PMIS. Mid-term and endline and possibly process monitoring. Sample basis. APO staff. Process monitoring agency is preferable. Midterm and endline evaluation by M&E Agency. | | | | | | | |
| Share of participating farmers adopting climate smart practices that are female (Percentage) | | 0.00 | 0.00 | 10.00 | 15.00 | 20.00 | 30.00 |
| **Frequency/Data Source/Methodology/Responsibility for Data Collection:** 1 per rabi and 1 kharif in each year. PMIS. Mid-term and endline and possibly process monitoring. Sample basis. APO staff. Process monitoring agency is preferable. Midterm and endline evaluation by M&E Agency. | | | | | | | |
| Share of participating farmers | | 0.00 | 0.00 | 30.00 | 50.00 | 70.00 | 75.00 |

| Indicator Name | DLI | Baseline | Intermediate Targets | | | | End Target |
|---|---|---|---|---|---|---|---|
| | | | 1 | 2 | 3 | 4 | |
| who give a rating of "Satisfied" or above on process and realized benefits of project interventions (Percentage) | | | | | | | |
| **Description**: This is a citizen engagement indicator to measure beneficiaries' satisfaction with the project's interventions. This may be composite indicator derived from several ratings of inclusiveness and participation.<br><br>**Frequency/Data Source/Methodology/Responsibility for Data Collection:** Mid-term and endline. Mid-term and endline surveys. Sample survey. M&E Agency. | | | | | | | |
| Share of participating female farmers who give a rating of "Satisfied" or above on process and realized benefits of project interventions (Percentage) | | 0.00 | 0.00 | 30.00 | 50.00 | 70.00 | 75.00 |
| **Description:** This indicator will measure the level of satisfaction with the project of female beneficiaries. This may be composite indicator derived from several ratings of inclusiveness and participation<br><br>**Frequency/Data Source/Methodology/Responsibility for Data Collection:** Mid-term and endline. Mid-term and endline surveys. Sample survey. M&E Agency. | | | | | | | |

## Intermediate Results Indicators by Components

| Indicator Name | DLI | Baseline | Intermediate Targets | | | | End Target |
|---|---|---|---|---|---|---|---|
| | | | 1 | 2 | 3 | 4 | |
| **Component 1. Sustainable Land and Water Resource Management** | | | | | | | |
| Survival rate of seedlings planted with project support (Percentage) | | 0.00 | 60.00 | 65.00 | 70.00 | 80.00 | 80.00 |
| **Description**: Survival rate of seedlings relates to the PDO objective to improve management of upstream forests and pasture areas in accordance with resource management plans because good seedling survival is a prerequisite for successful plantations. This is an outcome-level indicator that stems from project investments in improved nursery development, training, and grazing/fire | | | | | | | |

| Indicator Name | DLI | Baseline | Intermediate Targets | | | | End Target |
|---|---|---|---|---|---|---|---|
| | | | 1 | 2 | 3 | 4 | |
| management in plantations under Component 1 and capacity building for the HPFD and communities under Component 3. This indicator measures a short-term outcome directly attributable to the project that will lead to longer-term project impacts, including improved forest cover and carbon sequestration.<br>**Frequency/Data Source/Methodology/Responsibility for Data Collection:** Annually in March. PMIS. Census in each round; denominator is the number of plants planted in that scheme and will get replanted. APO. | | | | | | | |
| Percentage of women signatories engaged in approving GP-RMPs (Percentage) | | 0.00 | 20.00 | 30.00 | 30.00 | 30.00 | 30.00 |
| **Description**: This indicator will measure the closure of a gender gap related to women's roles as planners and decision-makers related to natural resources in their communities. Percentage of women signatories will be monitored for every targeted GP."GP-RMP" refers to the Gram Panchayat Resource Management Plan, which will be the primary planning process used to inform project investments.<br>**Frequency/Data Source/Methodology/Responsibility for Data Collection:** Ongoing for GPRMPs (year 1). PMIS. Extension officers record from GPRMP Gram Sabha minutes. APO/DPO with PMU aggregating. | | | | | | | |
| **Component 2. Improved Agricultural Productivity and Value Addition** | | | | | | | |
| Farmers reached with agricultural assets or services (CRI, Number) | | 0.00 | 0.00 | 8,000.00 | 12,000.00 | 18,000.00 | 20,000.00 |
| **Description**: This indicator measures the number of farmers who were provided with agricultural assets or services as a result of World Bank project support. "Agriculture" or "Agricultural" includes: crops, livestock, capture fisheries, aquaculture, agroforestry, timber, and non-timber forest products. Assets include property, biological assets, and farm and processing equipment. Biological assets may include animal agriculture breeds (e.g., livestock, fisheries) and genetic material of livestock, crops, trees, and shrubs (including fiber and fuel crops). Services include research, extension, training, education, ICTs, inputs (e.g., fertilizers, pesticides, labor), production-related services (e.g., soil testing, animal health/veterinary services), phyto-sanitary and food safety services, agricultural marketing support services (e.g., price monitoring, export promotion), access to farm and post-harvest machinery and storage facilities, employment, irrigation and drainage, and finance. Farmers are people engaged in agricultural activities or members of an agriculture-related business (disaggregated by men and women) targeted by the project.<br>**Frequency/Data Source/Methodology/Responsibility for Data Collection:** Continuous. PMIS. Outreach by intervention of aggregated numbers per village per output will be recorded at individual level by gender, aggregated number of households. Extension officers of APO, aggregated at DPO and PMU. May be verified by mid-term and end-term evaluation. | | | | | | | |
| Farmers reached with agricultural assets or services - Female (CRI, Number) | | 0.00 | 0.00 | 1,000.00 | 3,000.00 | 4,280.00 | 4,280.00 |
| **Frequency/Data Source/Methodology/Responsibility for Data Collection:** Continuous. PMIS. Outreach by intervention of aggregated numbers per village per output will be recorded at individual level by gender, aggregated number of households. Extension officers of APO, aggregated at DPO and PMU. May be verified by mid-term and end-term evaluation. | | | | | | | |
| Farmers reached with agricultural extension or | | 0.00 | 0.00 | 0.00 | 2,000.00 | 5,000.00 | 10,000.00 |

| Indicator Name | DLI | Baseline | Intermediate Targets | | | | End Target |
|---|---|---|---|---|---|---|---|
| | | | 1 | 2 | 3 | 4 | |
| training – Male (Number) | | | | | | | |
| **Frequency/Data Source/Methodology/Responsibility for Data Collection:** Continuous. PMIS. Outreach by intervention of aggregated numbers per village per output will be recorded at individual level by gender, aggregated number of households. Extension officers of APO, aggregated at DPO and PMU. May be verified by mid-term and end-term evaluation. | | | | | | | |
| Farmers reached with agricultural extension or training – Female (Number) | | 0.00 | 0.00 | 0.00 | 1,000.00 | 2,000.00 | 3,000.00 |
| **Frequency/Data Source/Methodology/Responsibility for Data Collection:** Continuous. PMIS. Outreach by intervention of aggregated numbers per village per output will be recorded at individual level by gender, aggregated number of households. Extension officers of APO, aggregated at DPO and PMU. May be verified by mid-term and end-term evaluation. | | | | | | | |
| Farmers adopting improved agricultural technology (CRI, Number) | | 0.00 | 0.00 | 1,000.00 | 3,000.00 | 5,000.00 | 10,000.00 |
| **Description**: This indicator measures the number of farmers (of agricultural products) who have adopted an improved agricultural technology promoted by operations supported by the World Bank. NB: "Agriculture" or "Agricultural" includes: crops, livestock, capture fisheries, aquaculture, agroforestry, timber and non-timber forest products.<br>Adoption refers to a change of practice or change in use of a technology that was introduced or promoted by the project.<br>Technology includes a change in practices compared to currently used practices or technologies (seed preparation, planting time, feeding schedule, feeding ingredients, postharvest storage/ processing, etc.). If the project introduces or promotes a technology package in which the benefit depends on the application of the entire package (e.g., a combination of inputs such as a new variety and advice on agronomic practices such as soil preparation, changes in seeding time, fertilizer schedule, plant protection, etc.), this counts as one technology.<br>Farmers are people engaged in farming of agricultural products or members of an agriculture related business (disaggregated by men and women) targeted by the project.<br>**Frequency/Data Source/Methodology/Responsibility for Data Collection:** 1 per rabi and 1 per kharif. PMIS and mid-term and endline evaluation survey. Possibly also process monitoring. Sample basis. APO staff. Process monitoring agency preferable. Also mid-term and end-term evaluation M&E Agency. | | | | | | | |
| Farmers adopting improved agricultural technology - Female (CRI, Number) | | 0.00 | 0.00 | 300.00 | 1,000.00 | 2,000.00 | 3,000.00 |
| **Frequency/Data Source/Methodology/Responsibility for Data Collection:** 1 per rabi and 1 per kharif. PMIS and mid-term and endline evaluation survey. Possibly also process monitoring. Sample basis. APO staff. Process monitoring agency preferable. Also mid-term and end-term evaluation M&E Agency. | | | | | | | |
| Farmers adopting improved agricultural technology - male (CRI, Number) | | 0.00 | 0.00 | 700.00 | 2,000.00 | 5,000.00 | 7,000.00 |
| **Frequency/Data Source/Methodology/Responsibility for Data Collection:** 1 per rabi and 1 per kharif. PMIS and mid-term and endline evaluation survey. Possibly also process monitoring. Sample basis. APO staff. Process monitoring agency preferable. Also mid-term and end-term evaluation M&E Agency. | | | | | | | |
| Area provided with new/improved irrigation or drainage services | | 0.00 | 0.00 | 500.00 | 1,000.00 | 1,500.00 | 1,500.00 |

| Indicator Name | DLI | Baseline | Intermediate Targets | | | | End Target |
|---|---|---|---|---|---|---|---|
| | | | 1 | 2 | 3 | 4 | |
| (CRI, Hectare(Ha)) | | | | | | | |
| **Description**:This indicator measures the total area of land provided with irrigation and drainage services under the project, including in (i) the area provided with new irrigation and drainage services,and (ii) the area provided with improved irrigation and drainage services, expressed in hectare (ha).<br>**Frequency/Data Source/Methodology/Responsibility for Data Collection:** Continuous. Self reported farm land data by farmers (census). APO and AEO will collect data; and aggregated DPO and PMU. Groundtruthed in mid-term and endline evaluation. | | | | | | | |
| Area provided with new irrigation or drainage services (CRI, Hectare(Ha)) | | 0.00 | 0.00 | 500.00 | 1,000.00 | 1,300.00 | 1,300.00 |
| **Frequency/Data Source/Methodology/Responsibility for Data Collection:** Continuous. Self reported farm land data by farmers (census). APO and AEO will collect data; and aggregated DPO and PMU. Groundtruthed in mid-term and endline evaluation. | | | | | | | |
| Area provided with improved irrigation or drainage services (CRI, Hectare(Ha)) | | 0.00 | 0.00 | 50.00 | 100.00 | 150.00 | 200.00 |
| **Frequency/Data Source/Methodology/Responsibility for Data Collection:** Continuous. Self reported farm land data by farmers (census). APO and AEO will collect data; and aggregated DPO and PMU. Groundtruthed in mid-term and endline evaluation. | | | | | | | |
| Share of user groups for agriculture extension services with female treasurers (Percentage) | | 0.00 | 0.00 | 0.00 | 10.00 | 20.00 | 30.00 |
| **Description**: This is a gender indicator to track the closure of a key gender gap related to women's leadership.<br>**Frequency/Data Source/Methodology/Responsibility for Data Collection:** Continuous. PMIS. Inspection of registers (census). APO and AEO will collect data; and aggregated by DPO and PMU. Groundtruthed in mid-term and endline evaluation. | | | | | | | |
| **Component 3. Institutional capacity building for integrated watershed management** | | | | | | | |
| Technical staff of participating line departments trained on integrated watershed management (Number) | | 0.00 | 50.00 | 100.00 | 150.00 | 300.00 | 400.00 |
| **Description**: This is an output-level indicator measuring the number of technical staff of line departments participating in the project (including project staff) that have been trained by the project. Each person that has participated in any training supported by the project will be counted only once.<br>**Frequency/Data Source/Methodology/Responsibility for Data Collection:** Collected at each training. PMIS. Actual count in training (census). APO and AEO will collect data; and aggregated by DPO and PMU. Groundtruthed in mid-term and endline evaluation. | | | | | | | |

## 12.7. Community Monitoring

Community monitoring engages the community in monitoring project activities in their villages, such as watershed-related activity construction, including through the Gram Sabha, and requires that the project's objectives, village-wise activities, and detailed financials be transparently disclosed to the community. It aims to increase the project's accountability to its beneficiaries and to build the capacity of beneficiaries to assess project interventions through regular reviews of project implementation progress and outcomes by the Social Audit Committee of the Gram Sabha.

The monitoring feedback should be collected and discussed in the Gram Sabha and also compiled into one report in a given Gram Panchayat. The district teams are responsible for spreading awareness of this process and may identify and train community members for the activity.

Community monitoring via community resource persons may also be used to collect regular monitoring data on individual farmers and producer groups to measure relevant RF indicators (e.g., share of participating farmers adopting climate smart agriculture practices). An external agency will develop a mobile-based software application to enable easy and quick data collection and transfer to the PMIS.

## 12.8. Process Monitoring:

Process monitoring is a type of concurrent evaluation implemented by an external agency to provide independent objective feedback on the quality of implementation, selected intermediate outcomes, lessons learned and challenges and recommendations for improvement. It typically is done during the course of the project, through regularly timed rounds of field research. The intention is to provide insights and recommendations for the PMU and the district teams to improve strategic and operational decisions, mid-course corrections and adaptations to improve overall project effectiveness.

An external agency or team of consultants will be contracted to produce quarterly/ biannual reports on the implementation that has occurred in the preceding quarter/ semester by conducting field-level qualitative interviews of key stakeholders and short farmer surveys. The intention is to measure indicators in the RF where the source of verification is process monitoring and to unearth insights and recommendations for action. This agency would report on all matters related to the process monitoring to the PMU. The PMU will decide the scope and specific questions to be answered in surveys, what recommendations to accept and to assess the value of the process monitoring efforts. A record of the recommendations made and whether they are accepted or not will be kept by the PMU as part of the PMIS. The Key Performance Indicators (KPI) of process monitoring will be the number of recommendations or insights on which action was taken on in each quarter/semester.

**Table 12.2: The following is the list of KPIs included in the Project:**

| | RF Indicator | Additional KPIs related to the RF Indicator | Frequency |
|---|---|---|---|
| **PDO Indicators** | | | |
| | Land area under sustainable landscape management practices | Number of GPRMPs prepared<br>Number of GPRMPs approved by GS<br><br>Number of sub-watersheds (roughly 5,000 ha) with soil and water conservation investments under-construction<br>Number of sub-watersheds with soil and water conservation investments completed and handed over to community<br><br>Land area under watershed area<br>Land area under forestry/government land<br>Land area under lantana eradication<br>Land area under plantation in SWS<br>Land area by type of plantation by SWS<br>Land area under contour trenching<br><br>Land area by type of improved management practices<br>Land area by type of watershed structure<br>Land area by primary storage structures | Project data: Continuous/ongoing |
| | Area managed for improved soil (conservation?) | Number of farmers (or if feasible farm area) by type of improved farming practices that improve soil quality/reduce erosion | Project data: Continuous/ongoing |
| | Number of reforms recommended by the institutional assessments that are implemented | | Project data: Continuous/ongoing |
| | New farm area brought under higher efficiency irrigation through project support in targeted GPs | Number of female farmers using higher efficiency irrigation<br>Number of male farmers using higher efficiency irrigation | Biannual by Process Monitoring |
| | Share of participating farmers adopting climate smart agriculture practices | Practices include 1) irrigation 2) use of fodder including curtailing grazing and using manger 3) soil nutrient mgmt. (IPM and INM) 4) other no-regret interventions may be considered by WB<br>% of farmers adopting specific practices<br>% adopting at least one<br>% adopting non negotiable set of practices<br>Area brought under high value crops (HVC) (ha)<br>Change in cropping pattern | Project data: Continuous/ongoing<br><br>Biannual by Process Monitoring |
| | Share of participating farmers adopting climate smart agriculture | % of female farmers adopting specific practices<br>% of female farmers adopting at least one | Biannual by Process Monitoring |

| | | | |
|---|---|---|---|
| | practices that are female | % of female farmers adopting non negotiable set of practices | |
| | Share of participating farmers who give a rating of "Satisfied" or above on process and realized benefits of project interventions | | Biannual by Process Monitoring |
| | Share of participating female farmers who give a rating of "Satisfied" or above on process and realized benefits of project interventions | | Biannual by Process Monitoring |
| **Intermediate Results Indicators** | | | |
| **Component 1** | | | |
| | Survival rate of seedlings planted with project support | Survival rate by plantation type<br>Total number of surviving plants by type | Annual Project data |
| | Percentage of women signatories engaged in approving GP-RMPs | Number of men and women who attend the GS meeting<br>Number of men and women who approved the GPRMP | Project data- continuous |
| **Component 2** | | | |
| | Farmers reached with agricultural assets or services | Number of farmers reached by type of asset or service | Project data- continuous |
| | Farmers reached with agricultural assets or services – Female | Number of female farmers reached by type of asset or service | Project data- continuous |
| | Farmers reached with agricultural extension or training – Male | Disaggregated by type of training (crop wise, production technology wise)<br>Post training test of knowledge<br>Post training intention to adopt practices | Project data- continuous after each training. |
| | Farmers reached with agricultural extension or training – Female | | Project data- continuous after each training. |
| | Farmers adopting improved agricultural technology | Number or % of male farmers adopting interventions by type<br>Number or % of male farmers adopting core set of interventions<br>Number or % of female farmers adopting interventions by type<br>Number or % of female farmers adopting core set of interventions | Biannual by Process Monitoring |
| | Farmers adopting improved agricultural technology - Female | | Biannual by Process Monitoring |
| | Farmers adopting improved agricultural technology - Male | | Biannual by Process Monitoring |
| | Area provided with new/improved irrigation or drainage services | Pondage capacity (hectare-meters)<br>Pondage developed (hectare-meters)<br>Annual water harvested<br>Number of irrigation schemes<br>Midterm and end-term Evaluation should measure agricultural water productivity<br>Irrigation potential utilized/Gross irrigated area (ha) | Project data- continuous |
| | Area provided with new irrigation or drainage services | | Biannual by Process Monitoring |
| | Area provided with improved irrigation or | | Biannual by APO & DPO offices |

| | | | |
|---|---|---|---|
| | drainage services | Total Cultivable command Area (CCA) developed (in ha) | |
| | Share of user groups for agriculture extension services with female treasurers | Number of user groups for agriculture extension services with female treasurers<br>Total number of user groups for agriculture extension services | Project data- continuous |
| | Knowledge of trainers and farmers | Percentage of farmers with adequate learning at the end of training programs<br>Percentage of farmers who intend to apply training on the farm<br>Percentage of trainers with adequate knowledge before starting training programs | Project – After trainers and farmers are trained |
| **Component 3** | | | |
| | Technical staff of participating line departments trained on integrated watershed management | Post-training test scores<br>% attendees who get minimum score | Project data- continuous |
| **Component 4** | | | |
| | | No. of Work Shop/ Meetings conducted (For Personals) | Biannual by APO, DPO & PMU offices |
| | | No. of Work Shop/ Meetings conducted (For Communities) | Biannual by APO, DPO & PMU offices |
| | | No. of training programs conducted (For Personals) | Biannual by APO, DPO & PMU offices |
| | | No. of training programs conducted (For Communities) | Biannual by APO, DPO & PMU offices |
| | | No. of Exposure Visits conducted (For Personals) | Biannual by DPO & PMU offices |
| | | No. of Exposure Visits conducted (For Communities ) | Biannual by APO & DPO offices |
| | | No. of International trainings conducted | Biannual by PMU office |
| | | Number of Women personnel/ beneficiaries trained | Biannual by APO, DPO & PMU offices |
| | | Achievement of learning objectives by short test | Biannual by Process Monitoring |
| | | No. of Work Shop/ Meetings conducted (For Personals) | Biannual by APO, DPO & PMU offices |
| | | Adherence to training guidelines (adequate resource materials, duration, training conditions, program coordination) | Process Monitoring |
| **Procurement Indicators** | | | |
| | | Percentage of PMU and DPO procurements that adhere to estimated costs with less than + 10 percent variance | Project data- continuous |
| | | Percentage adherence to procurement cycle time (procurement cycle time is time taken from the date of invitation of bids/Requests for Expression of Interest RFQ to the date of contract award) | Project data- continuous |

| | | | |
|---|---|---|---|
| | | Percentage purchase orders/contracts with adherence to stipulated payment terms | Project data- continuous |
| | | Disclosure of procurement information, including but not limited to opportunities/formats and checklists/contract award notices/procurement post review reports, Complaint handling mechanism, etc., on the project website | Project data- continuous |
| | | Procuring entities have received at least one training in procurement as the first step to build procurement capacity | Project data- continuous |
| | | % physical progress for each contract | Project data- continuous |
| | | % financial progress for each contract | Project data- continuous |
| **ESMF Indicators (May be revised as per the PMIS TOR)** | | | |
| **A. Environmental** | | | |
| | | Change in water discharge in selected springs | Biannual by APO & DPO offices |
| | | Instances of Pest and Disease attacks | Annually by APO & DPO offices |
| | | Number of Farmers using bio-pesticides | Biannual by APO & DPO offices |
| | | Number of communities taking up conservation and source sustainability activities | Biannual by Process Monitoring |
| **B. Social** | | | |
| | | Number of grievances registered and resolved | Biannual by APO & DPO offices |
| | | Number of court case | Biannual by APO & DPO offices |
| | | Number of UGs/ PGs/ Federations formed | Biannual by APO & DPO offices |
| | | Number of women members in UGs/ PGs/ Federations | Biannual by APO & DPO offices |

## 12.9. Performance Evaluation:

The PMU will procure a qualified external agency to design and implement an independent performance evaluation of the project to inform the project's Implementation Completion Report for the World Bank. The performance evaluation will measure the RF indicators where the source of verification is the evaluation. This is an important activity. The logic for calculating each indicator should be defined by the project's M&E team and senior management to ensure complete clarity. For this project, there will be no baseline survey, since by design the RF indicator baseline values are zero. The baseline values may nonetheless be verified by the project teams and additionally will be verified by the midline evaluation survey using recall. A qualified external agency will conduct midterm and end-of-project beneficiary surveys to validate the project's measurement of the RF indicators and to answer other evaluation questions.

### 12.10. Project Completion Report:

This documents the PMU's self-assessment on the project's relevance, effectiveness, impact, sustainability, efficiency and learning's to inform the project's Implementation Completion Report. The PCR will be prepared using relevant World Bank guidelines.

### 12.11 Remote Sensing intelligence software:

In recent years, there is increasing use of free or low-cost satellite data for the following:

a. Provide inputs or validate design and Detailed Project Reports of watershed and irrigation schemes. This enables the state team to for instance visualize the locations and size of the water sources used in a lift irrigation scheme geo-tagged in a browser to help validate the district's DPR design and cost assumptions. Especially given restricted mobility due to COVID-19, remote monitoring is preferable to in-person field visits.

b. Soil moisture, and biomass cover in watershed command areas and other farmer level outcomes such as cropping intensity, sown area, and yields are outcomes expected to improve due to the project. Accurate impact assessment of these outcomes though desirable has not been planned for given the technical complexity including the need for a suitable control group, paucity of qualified evaluation agencies and high costs. However, a large number of public and private agencies are now capable of using satellite data to generate the above data with improved accuracy rates at competitive costs.

Hence, the project will conduct a feasibility assessment of the benefits of such an approach. The World Bank will facilitate in terms of exposure to other projects, access to evidence of the benefits and case studies and showcasing the sector's capabilities. After this feasibility assessment, a suitable agency may be contracted to implement these two requirements to support the PMU in remote monitoring of watershed and irrigation works and in the impact assessment of the project.

### 12.12. Institutional arrangements:

The institutional arrangements for implementing the M&E system are as follows:

**a. CPD Office Level:** CPD Office will be responsible for all the M&E activities in the project. There is a separate unit for Planning, Monitoring Evaluation & Learning. This unit will be headed by Chief Project Director with the assistance of Executive Director and Deputy Director Planning. This unit will coordinate with all the SMS in the PMU for M&E purposes. This unit will also review internal learning processes. ED will be operational head of monitoring evaluation and learning cell. This unit will overall be responsible for development of MEL system, prioritization of activities and ensuring their right conduct, process monitoring and evaluation, monitoring of physical and financial achievements, monitoring performance on RF indicators and KPIs, overseeing external quarterly/biannual process monitoring, etc.

**b. DPO Level:** At the DPOs, Team Leader, i.e. District Project Officer with the assistance of APOs and monitoring assistant is responsible for implementation and monitoring of the project activities at field level. Monitoring Assistant is deployed in each DPO office to precisely look after the designed M&E Plan and work accordingly. S/he will support the community monitoring, process monitoring and impact evaluation studies and will be responsible for entering semi-annual (twice annually) indicator values for all Results Framework indicators and KPIs into the Project MIS.

**c. APO Level:** The APO will be the base level of project management to provide timely and accurate MEL information using prescribed formats and other related activities for his/her area. The APO, with the support of her/his team will be responsible for all MEL information and activities. The APO will also be responsible for entering monitoring data into PMIS.

**d. Community Level:** The Gram Panchayat will be responsible to carry out community monitoring and to undertake social audit. The Gram Panchayat will report on the community monitoring results to the Gram Sabha.

### 12.13. M&E Work Plan and Budget:

The below table depicts the key M&E work plan activities for the first year of implementation. A more detailed work plan and budget will be developed by the external agency hired to support the project's M&E system and will constitute part of the M&E manual.

| S. No. | Process flow steps | Responsibility | Details |
|---|---|---|---|
| 1 | Procure qualified M&E TSA to design the PMIS and MIS support system, including the M&E indicators, targets, questionnaires, and protocols at all levels of the project | PMU | Following World Bank procurement procedure. |
| 2 | Finalize the expanded list of M&E indicators and targets (KPIs) | M&E TSA with PMU, DPO inputs | Input, output, outcome indicators at project and sub-project level. Set targets for the said indicators through iterative interactions with PMU/DPOs |
| 3 | Design the MIS System | M&E TSA with PMU, DPO inputs | 1. Visit the field and speak to PMU and 2 district units to understand the project.<br>2. Conduct detailed requirements gathering workshop with IDP to document a refined set of specific requirements.<br>3. Prepare an inception plan with a detailed workplan.<br>4. Present a requirements document and a functional specification document along with mock user interfaces and reports and obtain sign-off from the project.<br>5. Design and develop the software.<br>6. Conduct user testing for interface refinements. |

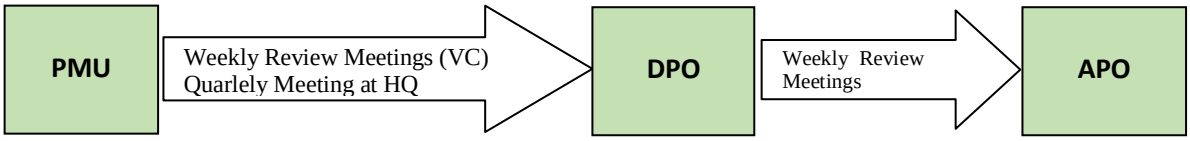
| | | | |
|---|---|---|---|
| | | | 7. Deploy the back-end software at a hosting facility and install on smartphones.<br>8. Migration of existing data that may be in hard copies into the software.<br>9. Prepare user manuals and train users.<br>10. Conduct periodic bug fixes and functionality enhancements as may be requested from time to time. Prepare a service level agreement for turnaround times for bug fixes and functionality enhancements. |
| 4 | Design monitoring questionnaires | M&E TSA | Leads to capturing the values of the Results Framework indicators and all other indicators developed under#2. |
| 5 | Design MIS support system manual, including questionnaires and protocols at all levels of the project | M&E TSA | Detailed manual specifying the roles and responsibilities of project staff and community resource persons in collecting project monitoring data, entering these data into the PMIS, verifying these data, and reporting the project monitoring data at all levels of the project (e.g., PMU, DPO, APO, community/farmer level). The manual should include a work plan and budget. |
| 6 | Trainproject staff at all levels | M&E TSA | Includes training of trainers for APO officers that will train community resource persons to do community monitoring |
| 7 | Hire/appoint M&E Officers (monitoring assistants) at DPO level | PMU/DPO | Each DPO shall hire/appoint an M&E Officer (monitoring assistant), who will validate the data submitted by the APOs and community resource persons. Fully validated and coded data will be submitted to the PMU via the PMIS. |
| 8 | Appoint M&E Specialist at PMU | PMU | PMU shall appoint a full time M&E Specialist for carrying out following activities:<br>1. Receive the fully validated and coded data from the DPO M&E Officers and offer data-generation queries from APOs, DPOs or PMU. |
| | | | 2. Re-validate 10 per cent of the data at the PMU level. |
| | | | 3. Generate reminders if data is not generated/ submitted on time. |
| | | | 4. Liaise with M&E TSA to resolve issues, if any, with the PMIS design/implementation. |
| | | | 5. Submit the fully validated data to external agencies hired to conduct the process monitoringand performance evaluation and liaise with them to |

| | | | |
|---|---|---|---|
| | | | resolve issues, if any, with the data |
| | | | 6. Support PMU for any additional data required for generating six-monthly Monitoring Reports |
| | | | 7. Handle any query from PMU and external M&E agencies on any data generated from the field |
| | | | 2. It shall design questionnaires that necessarily lead to capturing values of the relevant variables at the six-monthly monitoring intervals through the MIS. |
| 9 | Training of the Community Resource Persons (CRPs)for generation of data | APOs | To generate the community and farmer level data |
| 10 | Generation of six-monthly monitoring reports | M&E Specialist, PMU | PMIS will be used to generate six-monthly monitoring reports that will be submitted to project steering committee, IBRD, and external agencies (e.g. for process monitoring, evaluation, etc.) |
| 11 | Procure qualified evaluation design firm | PMU | A qualified M&E TSA shall be procured using World Bank guidelines to design the sampling frame, sample sizes and the questionnaires for the Midterm and Endline Surveys and to oversee survey implementation by a separate enumeration firm, analyse the data, and prepare the midline and endline project evaluation reports to capture project impact. |
| 12 | Design Midterm and Endline Evaluations | External M&E agencTSAy | Design the sampling frame, sample sizes and the questionnaires for the Midterm and Endline Surveys and oversee survey implementation by a separate enumeration firm, analyse the data, and prepare the midline and endline project evaluation reports to capture project impact. Specific tasks pertaining to Midterm and Endline Evaluations are given below. |
| 13 | Procure qualified enumeration firm | PMU | PMU will procure an enumeration firm using World Bank guidelines to carry out the surveys as per the sampling considerations and questionnaires designed by the external M&E Agency. |
| 14 | Implementation of Midterm and Endline Surveys | Enumeration firm | Carry out the surveys as per the sampling considerations and questionnaires designed by the external M&E TSA and submit the data to the PMIS. Quality checks of the data will be carried out by the external M&E Agency. |
| 15 | Generation of Midterm and Endline reports | External M&E agency | External M&E TSA ywill generate the Midterm and Endline reports based on the survey conducted by the |

| | | | |
|---|---|---|---|
| | | | enumeration firm |
| 16 | Project completion report | PMU | PMU to complete self-assessment of project performance |
| 17 | Presentation of the data analysis and learnings to the World Bank | External M&E TSA/PMU | External M&E TSA and PMU shall present the data analysis and the learnings from the Midterm and Endline surveys to the World Bank. |

## 12.14 Evaluation Plan

The DPOs will conduct the weekly review meeting with their supporting staff to evaluate the progress and find out the reasons, if targeted targets are not achieved with in stipulated period. They will initiate the actions to improve the shortcomings. Simultaneously the PMU will also conduct weekly Video Conference (VC) with all DPO's to know the progress of the project as well as quarterly review meeting at PMU HQ.



## 13. Project Risk Analysis:

The project risks have been rated as Low (Lo), Medium (Me) and High (Hi) based on the possibility of its occurrence / scale.

### 13.1 Process related risks

| S. No. | Risk | Rating | Risk Mitigation Measure |
|---|---|---|---|
| 1 | Poor and vulnerable households are not able to access benefits under the project. | Low | Project processes of ranking and preference will ensure that poor and vulnerable are given priority. Regular monitoring of project data at the PMU will highlight any discrepancy in this regard. |
| 2 | Poor and vulnerable do not access benefits due to low awareness and confidence about the project. | Medium | The project will focus on increasing the engagement with these poor and vulnerable households. Also, phasing of the interventions will ensure that households see the benefits accruing to the participating families. |
| 3 | Poor and vulnerable do not access benefits due to inability to contribute in the cost sharing mechanism. | Medium | Based on the expectations of the poor and vulnerable households, the modalities of cost sharing may be revised or the proportion itself may be revised, if the situation requires. |

### 13.2.Institution related risks

| S. No. | Risk | Rating | Risk Mitigation Measure |
|---|---|---|---|
| 1 | Quality of human resource for implementation of the project | Low | Project will adhere to clear educational qualification and experience for human resource at all the levels. The focus will also be on building capacities of the project staff based on a detailed Training Needs Assessment. |
| 2 | Turnover of project staff may slow down the project processes. | Low | Build strong training agencies, create ToTs and develop training modules at state, district and block level to train large number of project staff, as and when required. |
| 3 | Adequate funds are made available in time by GoHP | Medium | Adequate budgetary support to GoHP needs to be ensured. High-level GoHP commitment to the project should also help facilitate funds. |

### 13.3. Risks relating to policy environment

| S. No. | Risk | Rating | Risk Mitigation Measure |
|---|---|---|---|
| 1 | Frequent change in leadership at state level may lead to lack of continuity in policy and hamper implementation. | Low | Strengthening the capacity of village and cluster level institutions will help ensure that Project Management remains responsive and accountable to the needs of the poor. Moreover, the constitution of Governing Body and Executive Committee will ensure that there is continuity in policy and clear guidelines for the field level staff. |

### 13.4. Risk relating to Implementation

| S. No. | Risk | Rating | Risk Mitigation Measure |
|---|---|---|---|
| 1 | Increased production does not translate into higher incomes for farm households | Medium | The Project will proactively foster linkages between producer groups/ clusters and marketing agents. |
| 2 | Communities may not view investment in NRM as a priority | Low | The participatory planning process is aimed at raising awareness of the need for soil conservation, water resource management, and other NRM interventions, while demonstrating the link with poverty. |
| 3 | Vulnerable people's opinions are not heard, and their interests are side-lined in the micro-planning process. | Medium | Participatory identification of the poor will be undertaken to target the eligible beneficiaries. The Project will include the list of vulnerable in the GPRMP. |

| | | | | |
|---|---|---|---|---|
| **Annexure -1** | | | | |
| **Interim Unaudited Financial Report** | | | | |
| **Integrated Project for Source Sustainability and Climate Resilient Rain-Fed Agriculture in Himachal Pradesh** | | | | |
| **Implementing Agency: Forest Department, Government of Himachal Pradesh** | | | | |
| **Cover Page** | | | | |
| **For the period:** | | | | |
| **IUFR - 1** | | | | |
| **(in INR lakh)** | | | | |
| **Categories** | **Category Description** | **Total Expenditure during the period** | **% of Expenditure Eligible for Reimbursement** | **Reimbursible Amount for the period** |
| 1 | Goods, works, non-consulting services, consulting services, Training, and Operating Costs for the Project | | 80% | |
| 2 | Matching Grants under Component 2 of the Project | | 100% | |

**Annexure -1**

**Interim Unaudited Financial Report**
**Integrated Project for Source Sustainability and Climate Resilient Rain-Fed Agriculture in Himachal Pradesh**
**Nodal Implementing Agency : Forest Department, Government of Himachal Pradesh**
**Consolidated Statement of Sources and Uses of Funds**
**For the period:**
**IUFR - 2**
**In INR lakh**

| | Particulars | For the period | Year till Date | Cummulative Till Date |
|---|---|---|---|---|
| **A** | **Sources of funds** | | | |
| | Government of HP funds | | | |
| | **Total Sources of funds** | | | |
| | | | | |
| **B** | **Uses of funds** | | | |
| B.1 | ***Component 1: Sustainable Land and Water Resource Management*** | | | |
| B.1.1 | ***Sub-Component 1A: Improved Planning for Participatory and Sustainable Land and Water Management*** | | | |
| | Consultancies and Studies for Improved Planning | | | |
| | Gram Panchayat Resource Management Plan Development | | | |
| | Infrastructure Investment (Works) for Hydrological Monitoring Network | | | |
| B.1.2 | ***Sub-Component 1B: Implementation of Participatory and SLWM Investments*** | | | |
| | Infrastructure Investment (Works) for SLWM | | | |
| | Fire Management and Awareness | | | |
| | Consultancies and Studies for Implementation of SLWM Investments | | | |
| | Operations, Maintenance and Investment Fund (OMIF) | | | |
| B.2 | ***Component 2 - Improved Agricultural Productivity and Value Addition*** | | | |
| B.2.1 | ***Sub-Component 2A: Improved Water Productivity*** | | | |
| | Infrastructure Investment (Works) for Primary Water Distribution | | | |
| | Matching Grants for Secondary Water Distribution and Water Use Efficiency | | | |
| | Individuals | | | |
| | Producer Groups | | | |
| B.2.2 | ***Sub-Component 2B: Adoption of Climate Smart Technologies and Diversification into High-Value Crops*** | | | |
| | Matching Grants for Productive Assets | | | |

| | | | | |
|---|---|---|---|---|
| | Individuals | | | |
| | Producer Groups | | | |
| | Technical Agreements for Convergence with Other Government Programs/Institutions | | | |
| | Consultancies and Studies for Climate Smart Agriculture and Diversifification | | | |
| | Infrastructure Investment (Works) for Small-Scale Market Access Infrastructure | | | |
| | Goods for Promoting Climate Smart Agriculture and Diversification | | | |
| B.3 | ***Component 3 -Institutional capacity building for integrated watershed management*** | | | |
| B.3.1 | ***Sub-Component 3A: Improving the Governance Structure for Integrated Watershed Management*** | | | |
| | Consultancy Study on Integrated Watershed Management | | | |
| B.3.2 | ***Sub-Component 3B: Institutional Reform and Strengthening of the Himachal Pradesh Forest Department*** | | | |
| | Consultancies and Studies for HPFD Capacity Building | | | |
| | Training and Capacity Building | | | |
| B.4 | ***Component 4: Project Management*** | | | |
| | Salaries and wages | | | |
| | Knowledge Management and Communication | | | |
| | Seminar and Conference Participation and Organization | | | |
| | Implementation of Environment and Social Framework | | | |
| | M&E Related Expenses | | | |
| | Community Incentives | | | |
| | Works for Project Management | | | |
| | Other Goods for Project Management | | | |
| | Other Consulting Services for Project Management | | | |
| | Other Operational Expenses | | | |
| | **Total Uses of Funds** | | | |

**Certified that the above expenditure is drawn from the treasury accounts of the State Government of Himachal Pradesh**

**Authorized Signatory**

**Annexure -1**

**Interim Unaudited Financial Report**

**Integrated Project for Source Sustainability and Climate Resilient Rain-Fed Agriculture in Himachal Pradesh**

**Consolidated Procurement/ Contract Progress Monitoring Report for World Bank Financed Contracts**

**For the period:**

**IUFR - 3**

**In INR lakh**

| S.No. | Procurement Plan/STEP Ref. No. | WB No C no, & Date | Supplier/ Contractor/ Consultant Name | Brief Description of Work | Project Component/ Sub Component | Original Contract | | | | | Revision | | Payments INR | | | Physical Progress |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | Contract No. | Contract Date | Start Date | Close Date | Contract Amount | Contract Amount | Close date | During the quarter | Cumulative till date | % Financial Progress | % Physical Progress |
| | | | | | | | | | | | | | | | | |
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| **Total** | | | | | | | | | | | | | | | | |

**Authorized Signatory**

**Annexure -1**

**Interim Unaudited Financial Report**
**Integrated Project for Source Sustainability and Climate Resilient Rain-Fed Agriculture in Himachal Pradesh**
**Nodal Implementing Agency : Forest Department, Government of Himachal Pradesh**
**Expenditure Tracker (Standard Object of Expenditure Wise)**
**IUFR - 4**
**in INR lakh**

| Particulars | | 2020-21 | | | | | 2021-22 | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Q1 | Q2 | Q3 | Q4 | **Total** | Q1 | Q2 | Q3 | Q4 | **Total** |
| **Component 1: Sustainable Land and Water Resource Management** | | | | | | | | | | | |
| 12 | Professional and Special Service | | | | | | | | | | |
| 15 | Training | | | | | | | | | | |
| 65 | Remuneration to outsource employees | | | | | | | | | | |
| 20 | Other charges | | | | | | | | | | |
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| | | | | | | | | | | | |
| | | | | | | | | | | | |
| **Component 2 - Improved Agricultural Productivity and Value Addition** | | | | | | | | | | | |
| 12 | Professional and Special Service | | | | | | | | | | |
| 15 | Training | | | | | | | | | | |
| 65 | Renumeration to outsource employees | | | | | | | | | | |
| 20 | Other charges | | | | | | | | | | |
| | | | | | | | | | | | |

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|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | | |
| **Component 3 -Institutional capacity building for integrated watershed management** | | | | | | | | | | | |
| 12 | Professional and Special Service | | | | | | | | | | |
| 15 | Training | | | | | | | | | | |
| 65 | Renumeration to outsource employees | | | | | | | | | | |
| 20 | Other charges | | | | | | | | | | |
| | | | | | | | | | | | |
| | | | | | | | | | | | |
| **Component 4: Project Management** | | | | | | | | | | | |
| 01 | Salaries | | | | | | | | | | |
| 03 | Travel Expenses | | | | | | | | | | |
| 05 | Office Expenses | | | | | | | | | | |
| 07 | Rent, Rates and Taxes | | | | | | | | | | |
| 12 | Professional and Special Service | | | | | | | | | | |
| | | | | | | | | | | | |

**Certified that the above expenditure is drawn from the treasury accounts of the State Government of Himachal Pradesh**

**Authorized Signatory**

**Annexure -2**

# Project Procurement Strategy for Development [PPSD]

## 1. Introduction

The Project Procurement Strategy for Development [PPSD] document is prepared based on the World Bank's 'New Procurement Framework and Regulations for Projects after July 1, 2016' to determine the optimum procurement approach to be adopted for Integrated Development Project for Source Sustainability and Climate Resilient Rain-fed Agriculture, Himachal Pradesh [IDP] to deliver the right procurement results. The PPSD has taken into consideration *inter alia* the market situation, the operational context, previous experience and the risks present in the current project.

The PPSD *inter alia* describes the procurement approach for all the procurement to be undertaken during the first 18 months of the Project. Based on this PPSD, a Procurement Plan has been prepared for the first 18 months of the Project and this will be agreed with the World Bank prior to negotiations. The Procurement Plan will be updated every 12 months or earlier, as needed.

## 2. Project Overview

| | |
|---|---|
| **Country** | India |
| **Borrower** | Government of India [GOI] and Government of Himachal Pradesh [GOHP] |
| **Full Project Name** | Integrated Development for Source Sustainability and Climate Resilient Rain–fed Agriculture Project |
| **Total Finance [US$]** | US$100 million [IBRD Share: US$80 million and GOHP Share: US$20 million] |
| **Project Number** | P165129 |
| **Summary of Project Development Objectives** | To improve upstream watershed management and increase agricultural water productivity in selected Gram Panchayats in Himachal Pradesh. |
| **Key Implementing Agency** | Project Management Unit [PMU] under Himachal Pradesh Forest Department [HPFD] |

### Project Description

Himachal Pradesh Integrated Development for Source Sustainability and Climate Resilient Rain-Fed Agriculture Project aims to improve upstream ecosystem management and increase agricultural and water productivity in selected Gram Panchayats of the State of Himachal Pradesh. The duration of the project is for 5 [five] years.

### Project Development Objectives

To improve upstream watershed management and increase agricultural water productivity in selected Gram Panchayats in Himachal Pradesh.

### PDO Level Indicators

The project will have the following PDO indicators:

a) Survival rate of seedlings planted with project support [Percentage]

b) Share of participating farmers adopting climate smart agriculture practices [Percentage, gender disaggregated]

c) Increase in farm area under higher efficiency irrigation in targeted GPs [Percentage]

d) Share of target beneficiaries with rating "Satisfied" or above on process and impact of project interventions [Percentage, gender disaggregated] [Citizen Engagement Indicator]

**Project Components and Funds Sharing**

| Project Component | IBRD Share [US$ Million] | GOHP Share [US$ Million] | Total Project Funding [US$ Million] | Total Project Funding [%] |
|---|---|---|---|---|
| **Component 1:** Sustainable Land and Water Resource Management | 44.04 | 11.01 | 55.05 | 55.05 |
| **Component 2:** Improved Agricultural Productivity and Value Addition | 25.10 | 6.28 | 31.38 | 31.38 |
| **Component 3:** Institutional Capacity Buildingfor integrated watershed management | 2.94 | 0.73 | 3.67 | 3.67 |
| **Component 4:** Project Management | 7.92 | 1.98 | 9.90 | 9.90 |
| **Total** | **80.00** | **20.00** | **100.00** | **100%** |

**Project Components**

- **Project Component 1: Sustainable Land and Water Resource Management**

The component promotes participatory and sustainable land and water management through financing the planning and implementation of investments in selected micro-catchments. The component has following subcomponents:

- ***Subcomponent 1A: Improved planning for participatory and sustainable land and water management; and***
- ***Subcomponent 1B: Implementation of participatory and sustainable land and water management investments as identified by the Gram Panchayat Resource Management Plans [GP-RMPs].***

- **Project Component 2: Improved Agricultural Productivity and Value Addition**

This component would support interventions in downstream areas where the primary [existing or potential] water use is for irrigation in agriculture. The component has following subcomponents:

- ***Subcomponent 2A: Improved water productivity; and***
- ***Subcomponent 2B: Adoption of Climate Smart Technologies and Diversification into High-Value Crops.***

- **Project Component 3: Institutional Capacity Building for integrated watershed management**

The objective of this component is two-fold: firstly, to support a more comprehensive and holistic approach to managing the state's water resources while recognizing competing uses both within Himachal Pradesh [HP] and downstream in other states, in particular Punjab;

secondly to facilitate better alignment of institutional mandates for Integrated Water Management [IWM] and strengthen the HPFD's institutional structure and capacity for improved service delivery. The component has following subcomponents:

- ***Subcomponent 3A: Improving the governance structure for integrated watershed management; and***
- ***Subcomponent 3B: Institutional reform and strengthening of the Himachal Pradesh Forest Department.***

- **Project Component 4: Project Management**

This component will support the project management function, including key staff and operational costs.

**Project Procurement Profile**

Procurement profile under the project is likely to include, but not limited to the following:

| Procurement Level | Category | Description | Approximate Estimated Cost/Duration of contract/ Section Methods and Market Approach Options |
|---|---|---|---|
| PMU *[Approximately 6.68 % of value of procurement]* | Minor Civil Works | Extension, refurbishment and repair of office buildings, etc. | US $ Million:1.04<br>Duration: 6-9 months<br>RFB/ RFQ |
| | Goods and Non-Consulting Services | Purchase of IT Equipment such laptops, computers, printer, etc. Printing services for IEC, office vehicles, office furniture, etc. | US $ Million: 2.43<br>Duration: 6-9months<br>RFB/RFQ/GeM |
| | Consultancy Services | Consultancy services to support need based studies and technical assistance, baseline survey, IFMS, Water Monitoring and Modelling, Value Chain Scoping Studies, Technical Support Study for addressing the needs of Transhumant, M and E, MIS, Baseline Survey, External and Internal Audit ,etc. | US $ Million: 2.0<br>Duration: 4-9months<br>RFP |
| DPO *[Approximately 66.26 % of value of procurement]* DPO | Goods and Non-Consulting Services | Procurement of Barbed Wire, U/Staple, Tools, Gunny Bags, Vermicompost/ Farmyard Manure, Sand, Seeds, Wooden posts/ poles, Seedlings, Grass tufts, Sign boards/ handprints, seed testing instrument, Medicines, supplements, , seedlings, seed and fertilizer, Improved Livestocks etc. | US $ Million: 7.15<br>Duration: 3-6 months<br>RFB/RFQ/GeM |
| | Minor Civil Works | Procurement of works for construction of Water storage tanks, water channels, vermicompost pits, livestock Mangers, foot bridges,water lifting | USD Million: 47.12<br>Duration: 3-6 months<br>RFB/ RFQ |

| | | | |
|---|---|---|---|
| | | pumps, GI pipes, accessories, installation of ropeways, Ponds, Check Dams, Subsurface Dykes, Sump Wells etc. and labor contracts for preparing land for nursery, preparing nursery beds, water tank, works of filling gunny bags, sowing of seeds, preparing temporary nursery sheds, watering, hoeing, weeding, , fencing, bush cutting, pit digging, planting seedlings, preparing contour trenches, planting grass tufts, drainage line treatment works, fire management works, allowances and incentives for fire management, Spring development, eradication of exotic weed- lantana, etc. | |
| GP Level User Groups *[Approximately 21.82 % of value of procurement]* | Goods and Non-Consulting Services and minor works | Procurement of Agri. Tools and implements, equipment, farm machinery e.g. power tiller, chaff cutters, pipes, tarpaulins, etc. | US $ Million: 17.86<br>Duration: 2-3 months<br>RFQ |
| Individual Beneficiary *[Approximately 5.24 % of value of procurement]* | Goods and Non-Consulting Services | Fodder manger, individual Roof Rain Water Tank, etc. | US $ Million: 4.28<br>Duration: 1-2 months<br>RFQ |

## Legal/Policy Requirements

The Procurement of Goods, Works, Non-consulting Services and Consulting Services for the project will be carried out in accordance with the World Bank's Procurement Regulations for IPF Borrowers, July 2016, Revised November 2017 and August 2018 and applicable to Investment Project Financing [IPF]. The project will be subject to the World Bank's Anticorruption Guidelines, dated October 15, 2006, as revised in January 2011 and July 2016.

The retroactive financing up to 20% [of IBRD Share] of the project will be provided for such eligible expenditures incurred within one year prior to the expected loan signing date or a given date specified in the legal agreements. The retroactive financing will broadly cover advance contracting for selection of consultancy services for preparing Environment and Social Framework [ESF] and Project Implementation Plan [PIP], procurement of IT equipment for office use, procurement of goods such as Barbed Wire, U/Staple, Tools, Gunny Bags, Sand, Seeds, Wooden posts/poles, Seedlings, Grass tufts, sign boards/handprints, etc. and procurement of works [very small value labor contracts] for preparing land for nursery, preparing nursery beds, water tank, works of filling gunny bags, sowing of seeds, preparing temporary nursery sheds, watering, hoeing, weeding, , fencing, bush cutting for Nursery establishment and raising [52 nos.] in 26 clusters covering 428 GPs.

## 3. Overview of Country, Borrower and Marketplace

### A. Operational Context

- Governance aspects:

The State of Himachal Pradesh has twelve districts with an area of 55,673 square kilometres. The total population of Himachal Pradesh as per 2011 census is 68.65 lakhs and the total forest area [in Kilometre] is 37,033. The latest elections were held in November 2017. The elected Government is stable and there exists no conflict or threat to peace. The, Government of Himachal Pradesh [GOHP] in recent years has implemented many innovative policies for green growth and sustainable development.

The World Bank funded Development Policy Loans [DPLs] to HP in the past have helped in supporting climate change adaptation and mitigation at the state level; to promote the environmental and social sustainability of hydropower development; to adopt a state-wide integrated approach to watershed management as an instrument for rural poverty reduction; to promote environmentally sustainable industrial development by promoting cleaner sources of economic growth and by reducing the pollution of existing industrial plants; to promote environmentally sound tourism and to support the establishment of an institutional mechanism for the integration of geographic information systems in informed decision making. Further funding from Clean Technology Fund [CTF], as an integrated part of the second DPL, is to help GOHP in designing framework which shall ensure greener energy generation by reducing the dependency on fossil fuels. Thus, GOHP is guided towards transformative actions in sectors that are key engines of growth [i.e., energy, industry and tourism].

The Project Management Unit under Himachal Pradesh Forest Department [HPFD]is the key implementing agency for Himachal Pradesh Integrated Development for Source Sustainability and Climate Resilient Rain-fed Agriculture Project. It is headed by Chief Project Director [CPD]and reports to Principal Chief Conservator of Forest [PCCF], HPFD. The project area covers 428 selected GPs in32 Blocks in 10 Districts of Himachal Pradesh, viz., Shimla, Solan, Sirmour, Bilaspur, Hamirpur, Mandi, Kullu, Chamba, Kangra and Una. Each District has one District Project Office [DPOs], i.e., there are 10 DPOs. Further there are 26 Assistant Project Offices [APOs] comprising of front-line field staff that have been identified on the basis of geographic spread of the GPs. Each APO would cover a cluster of 15-18 Gram Panchayats [GPs]. The project area covers three out of the four major agro-climatic zones of the State, i.e., Shivalik hills, Mid-hills and the High hills.The workable weather conditions are varied across this landscape there by making it difficult to implement a uniform procurement strategy. The procurement is to be carried out across 10district and each DPO will be responsible for carrying the procurement at district level.

The State follows the Himachal Pradesh Financial Rules [HPFRs]2009 and Chapters 5 and 6 of HPFRs 2009 governs procurement of goods, works and services. These Rules are applicable and consistently followed across all Government Departments in the State.The Procurement for State funded projects are strictly done according to the HPFRs, 2009.

For the proposed project, Project Management Unit [PMU]at Centre and 10 District Project Offices [DPOs]at district level, will be the main procuring agencies to carry out procurement of goods, works, consultancy and non-consultancy services envisaged in the project. Additionally, procurement of goods, works will also be carried out at GP level [User Groups/ Individual Beneficiaries] with the support of DPOs/APOs in the project.

There will be four State level and District level committees to oversee smooth functioning of the proposed Integrated Development for Source Sustainability and Climate Resilient Rain-fed

Agriculture Project in the State as follows:[i]***Governing Body at State level*** will provide support for policy and institution development to harmonize watershed development and natural resource management policy in the state of Himachal Pradesh with the best practices and ensure effective coordination between different departments and other Government/ Government aided institutions for the benefit of achievements of the objectives project. The Chief Minister of the GOHP will be President and Additional Chief Secretary [Forest] will be the member Secretary of the body with representation from various line departments; [ii] ***Executive Committee at State level*** will be fully responsible to oversee project implementation and timely achievement of Project Development Objectives [PDOs] in the project. The Additional Chief Secretary [Forest] will be the Chairperson of the committee; [iii]***Finance Committee*** will be responsible to accord full financial sanctions for procurement of goods, works and services to be procured under the project; and [iv] ***District Level Coordination Committee [DLCC] in each district*** will be responsible to review the progress of implementation of project and to facilitate and provide platforms for convergence, coordination and experience sharing for other natural resource management projects and line departments in the district. The Deputy Commissioner will be the chairperson and District Project Officer will be the member Secretary of the committee.

**Financial Management [FM] Manual** prepared for the project shall have a separate chapter on Procurement which will provide clear guidance on applicable procurement arrangement and shall be made available on the project website.

**Community Operations Manual** [COM] will be prepared for the project will have clear directives for the community [User group/individual beneficiaries] of eligible procurement expenditures and agreed procurement arrangements and shall be made available on the project website. This will serve as a guidebook for procurement, with a view to providing operating instructions and bring in greater transparency and predictability in procurement procedures under the Project.

- **Economic Aspect:**

For Himachal Pradesh, with two-third of the area classified as forest land and more than one-fourth under forest cover, forests are an important natural asset for Himachal Pradesh. The rural population of the State depends on forests for a variety of products, especially fuel wood and fodder. Non-timber forest produce [NTFP] like medicinal plants support rural livelihoods at higher altitudes, resin extracted from chir pine trees supplement household incomes in the Mid-Himalayan zone. Forests are rich in biodiversity and also support the springs and water sources which are mainly confined to these areas. These water sources further support the arable land for the agricultural production system. Forests also help to determine central government revenue allocations to the State. As per the 14$^{th}$ Finance Commission, 7.5% of the share of tax revenues will be allocated on the basis of a State's forest cover. The State of Himachal Pradesh got allocated only 2.43% of the 7.5% allocation on the basis of forest cover evaluated between 2002 to 2012. Although there has been an increase of 393sqkm forest cover in Indian State of Forest Report [ISFR], 2017 leading to total area under forest cover to be 27.12%, the area under very dense forest is still 5.59% [per capita forest and tree cover 0.23 hectare as compared to world average of 0.64 hectare] that requires further improvement for sustaining the natural resources. With the project's aimto improve upstream ecosystem management and increase agricultural and water productivity, enhancing the forest cover would play a vital role by building upon site specific management plan with community participation. The other major challenge is to increase the water availability to support agriculture productivity as well their income by adoption of climate smart technologies among participating farmers.

- **Technological Aspects**

Use of technology such as below by the Project is expected to facilitate delivery of its PPSD.

The project will customize the Integrated Financial Management Information System [IFMIS] of HPFD which was initially developed by HP Mid Himalayan Watershed Development Project [HPMHWDP] and will use in the project.The IFMIS should produce timely, relevant and reliable financial information that would allow IDP to plan and implement the scheme, monitor compliance with agreed procedures and guidelines of World Bank, and appraise progress toward its objectives, i.e., budgeting, accounting, planning, reporting and auditing, etc.

Currently, the Himachal Pradesh Forestry Department is using e-procurement system for its procurement. However, PMU/ DPO's will be carrying out procurement using e-procurement for the first time in the project, therefore, their capacity building needs to be done for e-Procurement. The project will make use of Government of India's National Informatics Centre [NIC] platform assessed by the Bank to carry out bidding in the project for procurement of goods, works, consultancy and non-consultancy services for estimated value equivalent to INR 5 lacs and above.

Government e-Marketplace [GeM] set-up by Ministry of Commerce, Government of India will be used in the project for procurement under Request for Quotations [RFQ] method for procurement of Goods and Non-consulting Services up to a threshold of US $100,000.

The project will implement STEP, a World Bank procurement planning and tracking system, which would provide data on procurement activities, establish meaningful and measurable benchmarks. The system enables auto publication of approved procurement plan, publication notices and contract award information in the Bank's external website, UNDB online, World Bank Finances App, and World Bank Procurement App. This will be very helpful to monitor/track the procurement processing schedule and take appropriate corrective actions in time. Training on STEP has already been provided to PMU staff nominated in the past. The Bank will also arrange STEP training for DPO officials who will be involved in the procurement transaction prior to the implementation of the procurement activities in the project.

A. Procurement Implementation Arrangements, Client Capability and PMU Assessment

**Procurement Implementation Arrangements**: Procurement will be carried out at 3 levels as follows: Centralized procurement by the PMU; and decentralized procurement at the DPO and Beneficiary levels. The Himachal Pradesh Forestry Department [HPFD] will be the key implementing agency for the project. The Project Management Unit [PMU] headed by the Chief Project Director will be responsible for overall management of day to day activities of the project. The PMU is fully functional with core staff in place deputed from various line departments including procurement. The procurement staff [one] is from Treasury and Accounts Office, Finance Division of GOHP with10-12 years of past experience of dealing with Government sector procurement.

**Prior experience of implementing similar projects and implementing World Bank Projects:** The project staff have prior experience of implementing the World Bank financed HP Mid-Himalayan Watershed Development Project [HPMHWDP] that had a project life of 9 years and ended in March 2017 with procurement performance rated as Satisfactory.

**Contract management capability and capacity:** At the Centre, procurement staff will be responsible for contract monitoring and supervision of contracts awarded by PMU. At DPO level, contract monitoring and supervision will be done by technical staff at DPOs/APOs level [Agriculture, Animal Husbandry/Engineering staff of technical wing of DPO level and Forest Extension and Social Extension staff at APO level] to ensure timely delivery of quality outputs from the procurement contracts in the project areas. At the GP level all payments will be made by DPOs for district level procurement who have the necessary delegation of financial powers to incur expenditure. For sub-district level procurements [i.e., GP level], payments will be made

directly by User Groups/Individual Beneficiaries in accordance with procedures laid down in COM being prepared under the Project. IFMIS system will facilitate monitoring of various procurement activities in terms of physical and financial achievements on a monthly basis, and geo-tagging of sub-investments will bring in transparency in the process. The day to day monitoring of procurement activities will be done by APOs/DPOs at field level which will be updated in the online web-based system at district level and will be reviewed by PMU at the Centre.

**The functions and delegation of powers to PMU/DPOs in areas of Procurement and Contract Management are as follows:**

| Levels | Functional Area | Functions | Delegation of Powers |
|---|---|---|---|
| PMU/ DPOs | Procurement and Contract Management | Entering into procurement contracts with eligible and selected firms/agencies for delivery of goods, works and services and ensuring contracts enforced as per contractual obligations [i.e., completed on time and cost and obtained desired outputs] | CPD at PMU level and DPOs at district level have full financial powers delegated vide HP Govt. Finance Department Notification No. Fin-F-[A]-[11] dated 29-06-2015 for selection and award of contracts to qualified contractors/suppliers/ consultants, making payments under the contract, etc. |

**Capacity Building:** Though project staff has past experience of implementing World Bank financed HP Mid-Himalayan Watershed Development Project governed by the Bank's Procurement Guidelines, however, they need to be exposed to the Procurement Regulations applicable to the Project. To develop this capacity, project staff from PMU and two DPOs will be attending the two-week residential training program on World Bank Procurement Regulations conducted at ASCI, Hyderabad in February 2020. These officials will subsequently provide training to other project staffs prior to implementation of the procurement activities in the project. The project officials can also avail of the free Massive Open Online Course on public procurement www.procurementlearning.org offered by the Bank to build their capacity. The Bank had already conducted one training on STEP for PMU officials and will organize STEP training again on need basis for the concerned DPOs staff in near future. All participating GPs will be capacitated and provided basic procurement training on applicable procurement procedures and procurement documentation requirements outlined in COM by DPOs/APOs, before initiating their procurements.

**A SWOT analysis to assess the capabilities of the Project Management Unit [PMU] for the Project is summarized below:**

| STRENGTHS | WEAKNESS |
|---|---|
| - It has experience of implementing World Bank financed project HPMHWDP of similar scope and magnitude.<br>- PMU staff is familiar with the World Bank's Procurement Guidelines.<br>- PMU is fully established and procurement staff in place.<br>- PMU staff has undergone training on STEP. | - Staff do not have exposure to World Bank Procurement Regulations which may result in procedural lapses.<br>- Staff have no prior experience of carrying out bidding through e-procurement on NIC portal and will need to be trained in using the portal.<br>- Lack of expertise in the area of contract |

| | |
|---|---|
| - E-procurement System of NIC will be adopted which will enable efficient and transparent procurement process and thereby attracts potential bidders. | management.<br>- No procurement and contract management training provided to staff in past 2-3 years.<br>- Coordination risks associated with implementing a project in co-ordination with other line departments. |
| **OPPORTUNITIES**<br>- Opportunity for emulating the best global practices through the project in the State;<br>- Implementation of latest IT initiative to enhance efficiency, transparency and dissemination of information in the sector.<br>- National and international best practices exposure to state government officials through regular interactions with World Bank.<br>- Support from the Bank's project task team and continuous advice and capacity development of state government officials.<br>- The use of STEP portal for procurement would make the procurement process more systematic, transparent, planning and tracking will be easier.<br>- World Bank will provide training to the procurement and contract management staff of PMU to enhance their capability in World Bank Procurement Regulations and Contract Management aspects, and STEP. | **THREATS**<br>- High unpredictability of weather and geographically tough, hilly and snow bound terrain impacting construction activities.<br>- Challenges in procurement and contract management due to remote locations in tough and hilly terrain. |

**Key Conclusions:**

1. The project will carry out procurement activities of Goods, Works, Non-consulting Services and Consulting Services in accordance with the Bank's Procurement Regulations.

2. GeM portal will be used in lieu of RFQ for commonly used goods and services required in the project to streamline procurement process.

3. The Government of India's National Informatics Centre [NIC] platform www.hptenders.gov.in will be used to carry out bidding in the project for procurement of goods, works, consultancy and non-consultancy services for estimated value per contract equivalent to INR 5 lakhs and above to bring in transparency in procurement.

4. Training will need to be provided by NIC to designated officers of the PMU/DPO to carry out e-Procurement under the Project.

5. PMU staff do not have expertise in World Bank Bank's Procurement Regulations applicable to the Project. Therefore, procurement staffs at PMU and DPOs/APOs level shall be provided training on Bank's Procurement Regulations applicable to the project.

6. The Model Bidding Document agreed with the Bank under National Procurement Procedures/ Standard Request for Quotation [RFQ] format of the Bank shall be used in the project for procurement of goods and works. For consultancy services, Bank's Standard Request for Proposal [SRFP] shall be used.

7. The Financial Management [FM] Manual and Community Operations Manual [COM] shall have clear directives of eligible procurement expenditures and procurement arrangements agreed in the project and shall be made available on the project website.

8. The complaint handling mechanism shall be strengthened and made consistent with requirements as per Bank's Procurement Regulations.

9. Coordination risks of implementing a project in co-ordination with other line departments will need to be managed through up-front involvement of identified counterparts in providing technical inputs as well as in contract management.

## B. Market Analysis

The total value of the project is US$ 100 million[World Bank funding of US$ 80 million and government counterpart funding of US$ 20 million];out of which the value of procurement of works, goods and consulting and non-consultancy services amounts to US$ 81.89 million which is 81.90% of the total project cost as shown in the table below.

| S. No. | Description of Activities | PMU Level Procurement Spend [in INR Lakhs] | DPO Level Procurement Spend [in INR Lakhs] | Beneficiary Level [GP+Individual] Level Procurement Spend [INR Lakhs] | Total Procurement Spend [in INR Lakhs] | Procurement Spend [in %] |
|---|---|---|---|---|---|---|
| 1 | Goods | 1,396.65 | 4,960.90 | 14,725.00 | 2,1082.55 | 30.12 |
| 2 | Minor Civil Works | 730.00 | 32,986.91 | - | 33,716.91 | 48.17 |
| 3 | Consultancy Services | 1,402.83 | 0.00 | - | 1,402.83 | 2.00 |
| 4 | Non-Consultancy Services | 306.54 | 43.71 | 775.00 | 1,125.25 | 1.61 |
| 5 | Capacity Building initiative/Trainings | 1,092.02 | 0.00 | - | 1,092.02 | 1.56 |
| 6 | Operational Costs like Salaries, AMCs, etc. | 8,715.92 | 0.00 | - | 8,715.92 | 12.45 |
| 7 | Miscellaneous | 1,237.68 | 1,626.86 | - | 2,864.54 | 4.09 |
| | | **14,881.64** | **39,618.38** | **15,500.00** | **70,000.02** | **100** |
| **Total project cost [INR Lakhs]: 70,000.00** | | | | | **Procurement as Value of Total Project Cost [INR Lakhs]: 57,327.54 Equivalent to US$[43]81.89 Million** | **Procurement as a % of total Project Cost: 81.90 %** |

[43] 1 US$ = INR 70.00

**Segmentation of the market by geography [local and national], specialization or differentiation**

| Specialization | Geography | Market |
|---|---|---|
| Procurement of goods such as Barbed Wire, U/Staple, Tools, Gunny Bags, Vermicompost/ Farm yard Manure, Sand, Seeds, Wooden posts/ poles, Seedlings, Grass tufts, Sign boards/ hand prints, seed testing instrument, Seed, Fertilizer, Pesticide, Livestock - Small and Large Ruminants, Agri. Tools and implements, equipment, farm machinery e.g. power tiller, chaff cutters, pipes, tarpaulins, Medicines, supplements, sprinklers, seedlings, etc. | Bidders participated in bidding of procurement of goods in Forest Department and in previous Bank's project HPMHWDP. | Large number of local firms are available in State, District and local market who will be interested to participate in the bidding.<br><br>List of potential bidders who have participated in previous Bank-financed HPMHWDP is attached as Annex 1. |
| Procurement of minor civil works such as construction of Water storage tanks, water channels, vermicompost pits, livestock Mangers, foot bridges, water lifting pumps, GI pipes, accessories, installation of ropeways, Ponds, Check Dams, Subsurface Dykes, Sump Wells etc. and labor contracts for preparing land for nursery, preparing nursery beds, water tank, works of filling gunny bags, sowing of seeds, preparing temporary nursery sheds, watering, hoeing, weeding, , fencing, bush cutting, pit digging, planting seedlings, preparing contour trenches, planting grass tufts, drainage line treatment works, fire management works, allowances and incentives for fire management, Spring development, eradication of exotic weed- lantana, etc. | Contractors participated in bidding of procurement of works in Forest Department and in previous Bank's project HPMHWDP. | Large number of local contractors registered with various Govt. departments such as PWD, IPH, etc. under Class C and D at State and District level are available who will be interested to participate in the bidding.<br><br>List of potential contractors who have participated in previous Bank-financed HPMHWDP is attached as Annex 2. |
| Procurement of consultancy services to support need based studies and technical assistance such as baseline survey, IFMS, Water Monitoring and Modelling, Value Chain Scoping Studies, Technical Support Study for addressing the needs of Transhumant, M and E, MIS, Baseline Survey, External and Internal Audit, etc. | Qualified Consultants will participate in the bidding. | Consultants are available in national market who will be interested to participate in the bidding |

## Supply Position Matrix

Based on the list of major procurement activities envisaged in the project, a supply position matrix has been prepared.

<table>
<tr><td>High</td><td colspan="2"></td><td>High</td></tr>
<tr><td rowspan="2">Risk or Vulnerability</td><td>Strategic Security<br>- None</td><td>Strategic Critical<br>- None</td><td rowspan="2"></td></tr>
<tr><td>Tactical Acquisition<br><br>- Procurement of office equipment, furniture, etc.<br><br>- Procurement of minor civil works such as extension, refurbishment and repair of office buildings, etc.<br><br>- Procurement of Equipment under Components 1 and 2 [includes Matching Grant under Component 2]<br><br>- Procurement of Goods, Works and Services Component 1 [includes Operations and Maintenance Investment Fund to be established for O & M of existing and new community assets of GPs under the Project]</td><td>Tactical Advantage<br>- Procurement of consultancy services such as Study of Water Monitoring and Modelling for project area, Value Chain Scoping Studies for potential of clusters, Technical Support Study for addressing the needs of Transhumant of the project area, Hydrological Studies for Future SOPs, Baseline Survey, etc.<br>- MIS Consultancy<br>- M & E Consultancy<br>- External Audit<br>- Internal Audit<br>- Procurement of goods and minor civil works under project components 1 and 2.</td></tr>
<tr><td>Low</td><td colspan="2">Estimated to Cost / Value [US $ Million]</td><td>High</td></tr>
</table>

### Competitiveness of the Market

As per the cost tables under preparation, approximately 48.17% of the project financing will be applied for procurement of minor civil works contracts, 31.73% for procurement of goods and non-consultancy services contracts, and 2.0% procurement of consultancy services, etc. as listed above. The market analysis is therefore, focused mainly on market for goods and minor civil works which fall in the Tactical Acquisition category in the supply positioning matrix.

Based on procurement of goods and minor civil works contracts under previous World Bank financed HP Mid-Himalayan Watershed Development Project [HPMHWDP], the competition level has been analyzed. It is evident from the below analysis that competition levels in under Bank financed project has been good. On an average, 3 to 5 bidders have participated in most of the cases. In all cases, State and District bidders have participated in the bidding process.

**Table 1: Procurement Trends for Procurement of Goods in World Bank financed HPMHWDP**

| Package | Estimation INR Lakhs | Estimation US$ M | No. of Bidders participated | Contract Value INR Lakhs | Cost Overrun in % | Time Overrun | Proc. Method |
|---|---|---|---|---|---|---|---|
| G.I. Wire4.5 mm & Barbed Wire | 6.00 | 0.009 | 4 | 5.92 | No | No | RFQ |
| Cotton Tarpaulins | 10.00 | 0.014 | 6 | 9.62 | No | No | RFQ |
| Knitting Machine | 10.00 | 0.014 | 3 | 9.51 | No | No | RFQ |
| G.I. Wire | 4.50 | 0.006 | 4 | 3.94 | No | No | RFQ |
| Beetle Bucks/Goats | 10.50 | 0.015 | 5 | 9.81 | No | No | RFQ |
| Oat seed | 7.00 | 0.010 | 3 | 6.12 | No | No | RFQ |
| Goats (Local Breed/Beetle) | 20.00 | 0.029 | 5 | 18.60 | No | No | RFQ |
| Power Tiller | 8.50 | 0.012 | 4 | 7.00 | No | No | RFQ |
| Vegetable seeds | 8.00 | 0.011 | 4 | 7.28 | No | No | RFQ |
| Battery Operated Knap Sack Pumps | 7.50 | 0.011 | 5 | 6.96 | No | No | RFQ |

**Table 2: Procurement Trends for Procurement of Minor Works in HPMHWDP**

| Package | Estimation INR Lakhs | Estimation US$ M | No. of Bidders participated | Contract Value INR Lakhs | Cost Overrun in % | Time Overrun | Proc. Method |
|---|---|---|---|---|---|---|---|
| C/o o Community Centre Building at Rehan Teh. Fatehpur, Distt. Kangra | 12.98 | 0.19 | 5 | 8.67 | No | No | RFQ |
| C/o M/I/S Lift(WHS) at Bagh nallah near Vill.Baghu Ward no-4 in G.P.Bhagulehar under W.D.C. Nagrota-Bagwan | 3.92 | 0.06 | 5 | 3.60 | No | No | RFQ |
| C/o dry stone structure across the Jonku & Shuka Nalla in KK-III Forest GP Parli | 1.46 | 0.02 | 3 | 1.45 | No | No | RFQ |
| Planting work for conservation for KalonPadhar area 7ha for the 2016-17 in GP Talpini | 1.30 | 0.02 | 4 | 1.27 | No | No | RFQ |
| C/o Minor Irrigation Scheme with Makhowal Structure at Villlage Khajeta, GP Nadholi, Teh. Jawali , Distt.Kangra | 4.97 | 0.07 | 3 | 4.95 | No | No | RFQ |
| For the C/o Foot Bridge over Kamnala GP Lech WDC Bakani | 2.67 | 0.04 | 5 | 2.64 | No | No | RFQ |
| C/o Village Pond at Jagnaji Ki Dhar GP SirmoriMadir | 11.00 | 0.16 | 5 | 10.98 | No | No | RFQ |
| Square RCC Water Storage Tank | 1.11 | 0.02 | 4 | 1.10 | No | No | RFQ |
| C/O C.W.S. in various Nalas in G.P. Paroian, Arloo, Budhan, Hatli, Thanakalan &Chaproo WDC unit Bangana | 3.62 | 0.05 | 4 | 3.58 | No | No | RFQ |
| Rehabilitation of invasive alien species (Lantana) with local grasses 2/3rd to 1/3rd medium in G.P. Chaproo WDC unit Bangana | 2.83 | 0.04 | 3 | 2.79 | No | No | RFQ |

## 4. Stakeholders Analysis

| Stakeholder Management Plan | | | |
|---|---|---|---|
| **Stakeholder [Name and Role]** | **Interest [Responsible, Accountable, Consulted, Informed]** | **Stakeholder Objectives from the Procurement** | **Stakeholder Management Approach [where applicable]** |
| DEA, GOI | Consulted and Informed | Quick and timely disbursement<br><br>Smooth Project Implementation | Keep informed and satisfied |
| PMU, and DPOs, HP Forestry Department | Responsible and Accountable | Timely completion of project<br><br>Preparing, updating, implementing and monitoring procurement plans<br><br>Strengthening procurement complaint management system | |
| Project Beneficiaries | Responsible and Accountable | Preparation of GP-RMP and early access to Project benefits due to selection of right suppliers/contractors/service providers, who are able to deliver early with minimum cost and acceptable quality | Keep informed and consulted. |
| World Bank | Consulted and Informed | As Co-financier, timely project procurement implementation and management to achieve PDO and disbursement, as planned | Keep informed and satisfied. |
| Bidders/Contractors/Consultants | Accountable | Win potential business opportunity, complete the contract, timely payment, enhance the experience and earn profit. | Keep informed |
| Civil Societies and Media | Informed | Upholding public interest [transparency/disclosure, fairness, VfM] and help curb corruption | Keep informed |

## 5. Procurement Risk Analysis

| Risk Description | Mitigation | Risk Owner |
|---|---|---|
| Lack of capacity of PMU/DPOs/APOs in applicable procurement rulesand in contract management | HPFD will depute officials of PMU/DPOs/APOs who will be responsible for procurement and contract management, for trainings conducted by World Bank or ASCI, Hyderabad from time to time on Bank's Procurement Regulations and Contract Management<br><br>Use of IFMIS under the Project to track physical and financial progress of sub-district investments | PMU/DPO |
| Lack of capacity to carry out e-Procurement resulting in procurement delays | Training to be conducted by NIC<br><br>Valid Digital Signature Certificate [DSC] to be available for carrying out e-Procurement | PMU/DPO |
| Major procurement and contract management activities will be carried out by the DPOs/APOs thereby making process decentralized and flow of project information becomes a challenge | Financial Management Manual/Community Operational Manual will be prepared by PMU which will have clear guidance on eligible procurement expenditure, applicable procurement rules, and procurement arrangement in the project<br><br>Use of IFMIS under the Project to track physical and financial progress | PMU/DPO |
| Due to scattered area [428 GPs], procurement requirements will vary depending on the need of GP | Procurement plan will be prepared and implemented based on Gram Panchayat Resource Management Plan [GP-RMP] with support from PMU/DPOs/APOs | PMU/DPOs/APOs/GPs |
| Weak capacity of GPs/Beneficiaries to carry out procurement as per applicable rules | GPs/Beneficiaries to be provided basic procurement training once the GP-RMP is approved by DPO/PMU, and before commencing implementation of GP-RMP | PMU/DPOs/APOs/GPs |
| Price variation for the same item procured by different GPs in different locations attracting audit observations | Preparation of Rate Bank of commonly procured items for GPs in common geographical location. The rate bank will be vetted by PMU. | APOs/DPOs/PMU |
| Transfers and turnaround of the Government officials | GOHP will ensure adequate staff strength for the implementation of the project | PMU/DPO |
| Discretion in selection of labor/manpower | Labourers for project work will be hired from local market through a bidding process as per Bank's Procurement Regulations and GOHP/HPFD rules and guidelines | PMU/DPOs/APOs |
| Lack of qualified manpower at DPOs | The project will build the capacity of procurement staff through capacity building workshops conducted by Bank from time to time on Bank's Procurement Regulations and Contract Management | PMU/DPO |

| Risk Description | Mitigation | Risk Owner |
|---|---|---|
| Geographically tough and hilly terrain for construction of minor civil works and consultancies, and monitoring contracts | Financial Management Manual/Community Operational Manual will be prepared by PMU which will have clear guidance on eligible procurement expenditure, applicable procurement rules and procedures, and procurement arrangement in the project<br><br>For consultancies to be procured by the PMU, efforts to develop market-responsive TORS will be made | PMU |
| Delay in release of payments to contractors under the contract | Regular monitoring and supervision of procurement activities will be carried out using online IFMIS system in terms of physical progress and financial achievements on monthly basis | PMU/DPOs |

## 6. Procurement Objectives

The procuring entities under the Project will endeavour to conduct their procurement and monitor procurement progress through the below objectives.

7. To achieve the PDO together with Value for Money, Transparency and Integrity;
8. Ensuring economy by maximizing the participation of bidders and timely operationalization of the assets created;
9. Efficient selection of the suppliers/contractors, resulting in fair sharing of risks and thereby enhancing quality of deliverables;
10. To achieve effective time adherence and minimizing cost variations through efficient and effective contract management;
11. Ensuring timely and efficient availability of material/goods/works/non-consulting services and consultants, and training, in line with the Procurement Plan within budget and on time, and in compliance with the Procurement Regulation for IPF Borrowers of the World Bank; and
12. Effective and efficient handling of procurement-related complaints and disclosure of procurement information.

**Procurement Result Indicators**

The indicators used to measure the above objectives are as below:

- Percentage of PMU and DPO procurements that adhere to estimated costs with less than ± 10 % variance.
- Percentage adherence to procurement cycle time [procurement cycle time is time taken from the date of invitation of bids to the date of contract award].
- Percentage purchase orders/ contracts with adherence to stipulated payment terms.
- Disclosure of procurement information including but not limited to opportunities/ formats and checklists/contract award notices/ procurement post review reports, complaint handling mechanism, etc., on project website.
- Procuring entities have received at least one training in procurement as the first step to build procurement capacity.

## 7. Recommended Procurement Approach for the Project

**Procurement Category and Profile:**

**A. Procurement of Goods/NCS:** Such as Barbed Wire, U/Staple, Tools, Gunny Bags, Vermicompost/ Farm yard Manure, Sand, Seeds, Wooden posts/ poles, Seedlings, Grass tufts, Sign boards/hand prints, seed testing instrument, Seed, Fertilizer, Pesticide, Livestock - Small and Large Ruminants, Agri. Tools and implements, equipment, farm machinery e.g. power tiller, chaff cutters, pipes, tarpaulins, Medicines, supplements, sprinklers, seedlings, etc. will be carried out using RFQ/RFB/GeM. For GP level procurement, a Rate Bank will be prepared by respective DPOs of commonly procured items [for common geographical locations] to be procured by User Groups/ Individual Beneficiaries in the project.

**B. Procurement of Minor Civil Works:** Such as construction of water storage tanks, water channels, vermicompost pits, livestock Mangers, foot bridges, water lifting pumps, GI pipes, accessories, installation of ropeways, Ponds, Check Dams, Subsurface Dykes, Sump Wells etc. and labor contracts for preparing land for nursery, preparing nursery beds, water tank, works of filling gunny bags, sowing of seeds, preparing temporary nursery sheds, watering, hoeing, weeding, , fencing, bush cutting, pit digging, planting seedlings,

preparing contour trenches, planting grass tufts, drainage line treatment works, fire management works, allowances and incentives for fire management, Spring development, eradication of exotic weed- lantana, etc. will be carried out by PMU/ DPOs under RFQ/ RFB.

C. **Procurement of Consultancy Services:** Procurement of consultancy services to support need based studies and technical assistance such as baseline survey, IFMS, Water Monitoring and Modelling, Value Chain Scoping Studies, Technical Support Study for addressing the needs of Transhumant, firm for M & E, and for MIS, External and Internal Audits, etc. will be carried out using RFP.

## Contract approach for Major Contracts

**Procurement and Contract Approaches for Consultancy Services Contracts**

| Attribute | Selected arrangement | Justification Summary/Logic |
|---|---|---|
| **Specifications** | Conformance/Performance | As per Scope of Work mentioned in terms of Reference [TOR] |
| **Sustainability Requirements** | Yes | |
| **Contract Type** | Traditional | |
| **Pricing and costing mechanism** | Lump Sum/Time Based | Based on the requirement of the assignment |
| **Supplier Relationship** | Collaborative | |
| **Price Adjustments** | None | |
| **Form of Contract [Terms and Conditions]** | Standard Forms of Contract | Bank's Standard Forms of Contract will be used |
| **Selection Method** | Request for Proposals [RFP] | |
| **Selection Arrangement** | None | |
| **Market Approach** | Open<br>Two Stage Two Envelopes | No BAFO<br>No Price Negotiations |
| **Pre / Post Qualification** | Initial Selection | |
| **Evaluation Selection Method** | Quality Cost Based Selection [QCBS] | |
| **Evaluation of Costs** | Weightage for<br>Quality: 70-80<br>Cost: 30-20 | |
| **Domestic Preference** | No | |
| **Rated Criteria** | Rated Criteria | |

## 8. Summary of Procurement Activities for First 18 months [Procurement Plan] [Preferred Arrangement for Low Value Low Risk Activities]

| Ref. No. [In STEP] | Contract Description | Category | Estimated cost in INR [In Lakhs] | Estimated cost in US$ Million[1] | Bank Oversight [Prior/Post] | Selection Methods | Market approach option/contract type | Remarks |
|---|---|---|---|---|---|---|---|---|
| 1 | Environment and Social Assessment | CS | 38.94 | 55,620.00 | Post | DC | Open | Contract already awarded on 24 Sept 2019 under retroactive financing |
| 2 | Hiring of Individual Consultant to support drafting the Project Implementation Plan | CS | 9.44 | 13,480.00 | Post | IC | Open | Contract awarded on 8 Oct 2019 under retroactive financing |
| 3 | Technical consultant to design of GPRMP structure and mapping requirements | CS | 10.00 | 14,285.00 | Post | CQS | Open | |
| 4 | Study of Water Monitoring and Modeling for project area | CS | 287.00 | 410,000.00 | Post | QCBS | Open | |
| 5 | Selection of consultancy firm for Value Chain Scoping Studies for potential of clusters or producer goods involved in the same | CS | 60.00 | 85,720.00 | Post | QCBS | Open | |

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|---|---|---|---|---|---|---|---|---|
| | activity in the project area | | | | | | | |
| 6 | Study for Identification of Clusters for Agri./Livestock potential of the selected project area depending on Agro Climate conditions, Socio-economic and Land use of GPs in 10 Districts | CS | 30.00 | 42,860.00 | Post | QCBS | Open | |
| 7 | Technical Support Study for addressing the needs of Transhumant of the project area | CS | 25.00 | 35,715.00 | Post | QCBS | Open | |
| 8 | Training Need Assessment (TNA) of Project staff and stakeholders | CS | 30.00 | 42,860.00 | Post | QCBS | Open | |
| 9 | Project Management & Information System (PMIS) | CS | 150.00 | 214,285.00 | Post | QCBS | Open | |
| 10 | Selection of consultancy firm for Process Monitoring | CS | 100.00 | 142,860.00 | Post | QCBS | Open | |
| 11 | GIS based maps of 344 Gram panchayats | NCS | 51.60 | 73,714.00 | Post | RFQ | Open | |

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|---|---|---|---|---|---|---|---|---|
| 12 | Printing of IEC Materials and Re[porting Formats | NCS | 46.50 | 66,428.00 | Post | RFQ | Open | |
| 13 | Project website development maintenance | NCS | 3.50 | 5,000.00 | Post | RFQ | Open | |
| 14 | Purchase of 7 Office Vehicles through GeM by PMU | Goods | 100.00 | 142,857.00 | Post | RFQ | GeM | |
| 15 | Purchase of IT Equipments such as Laptops, Desktops, GPS, Photocopiers, printers,Video conference Unit and fire extinguishers by PMU for DPOs and PMU through GeM | Goods | 60.00 | 85,714.00 | Post | RFQ | GeM | Cumulative value of the package is provided for procurement of IT equipment for office use; however, based on requirements procurement will be carried out during the first 18 months through GeM |

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|---|---|---|---|---|---|---|---|---|
| 16 | Purchase of Office Furniture by PMU for use of PMU and DPOs-through GeM | Goods | 40.00 | 57,143.00 | Post | RFQ | GeM | Cumulative value of the package is provided for procurement of furniture for office use; however, based on requirements procurement will be carried out during the first 18 months through GeM |
| 17 | Procurement of Gunny Bags/P.bags/B. wire/Wooden poles/U-steples/Plants/Seeds/ Farm yard Manure/Pipes/Medicine/Pesticides/Fertilizer G.I. wire etc. by 10 DPOs for nursery establishment through GeM - [Decentralized Procurement by DPOs] | Goods | 2,842.95 | 4,061,357.00 | Post | RFQ | GeM | Cumulative value of the package involves very small goods contract based on requirements for Nursery Plantation and will be carried out prior to Loan Negotiations |
| 18 | Procurement of Agriculture tools such as chaff cutter/Hand held agriculture tools/ Sprayers/Sprinkalars/ | Goods | 250.00 | 357,143.00 | Post | RFQ | GeM | |

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|---|---|---|---|---|---|---|---|---|
| | Drip irrigation kits/power tillers/ Tarpaulines etc by individual | | | | | | | |
| 19 | Constructions of new building/repaire of old buildings procurement by PMU | Works | 730.00 | 1,042,857.00 | Post | RFQ | Open | |
| 20 | Procurement of labor for preparing land for nursery, preparing nursery bags, work of filling of gunny bags, sowing of seeds,watering,hoeing, weeding, water tanks, fencing, bushcutting,planting, construction of Soil and water conservation structure etc., -DecentralizedProcurement by DPOs | Works [Labor Contracts] | 7,091.29 | 10,130,414.00 | Post | RFQ | Open | Cumulative value of the package involves very small minor labour works contract based on requirements for Nursery Plantation and will be carried out prior to Loan Negotiations and will be claimed under Retroactive Financing |
| 21 | Constructions of Rain water Harvesting structure/Manger/Vermi compost pits etc. Procurement by communities | Works | 250.00 | 357,143.00 | Post | RFQ | Open | |
| | | | **12,206.22** | **17,437,455.00** | | | | |

## Annexure -3

**Procurement Plan**

**Date of the Procurement Plan:** December 2019
**Period covered by this Procurement Plan**: January 2020 to June 2021

**Applicable Procurement Rules.** The Procurement of goods, works, consulting and non-consulting services to be financed by the Loan will be carried out in accordance with the *World Bank's Procurement Regulations for IPF Borrowers [dated July 2016; revised November 2017 and August 2018]*, and the provisions of the *Loan Agreement*. If there is conflict between government decrees, rules, and regulations and the Bank Procurement Regulations, then Bank's Procurement Regulations shall prevail. The project will be subject to *World Bank Guidelines on Preventing and Combating Fraud and Corruption in Projects Financed by IBRD Loans and IDA Credits and Grants ["Anti- Corruption Guidelines"], dated October 15, 2006 and revised in January 2011 and as of July 1, 2016.*

The project will use the online tool *Systematic Tracking of Exchanges in Procurement [STEP]* to prepare, clear, and update its procurement plan, for monitoring procurement activities and for communication between the Borrower and the Bank. This textual part along with the Procurement Plan tables in STEP constitute the Procurement Plan for the Project. The following conditions apply to all procurement activities in the Procurement Plan. The other elements of the Procurement Plan as required under Paragraph 4.4 of the Procurement Regulations are set forth in STEP.

Unless otherwise agreed with the World Bank, the World Bank's Standard Procurement Documents [SPD], Requests for Proposals, and Forms of Consultant Contract will be used. Procurement under national procedures will be carried out based on National Procurement Procedures [NPP] conditions agreed with the Government of India.

Procurement estimated at Indian Rupees [INR] 5 Lakhs and above will be submitted through government e-Procurement systems provided by NIC www.hptender.gov.in which have been assessed and deemed acceptable by the Bank against Multilateral Development Bank [MDB] requirements.

**Financial Management [FM] Manual.** The FM Manual prepared for the project shall have a separate chapter on Procurement which will provide clear guidance on applicable procurement arrangement, procedures and thresholds, and shall be made available on the project website.

**Community Operations Manual [COM]**.The COM prepared for the project will have clear directives for the community [GPs/individual beneficiaries] with regard to eligible procurement expenditures and agreed procurement arrangements, procedures and thresholds, and shall be made available on the project website. This will serve as a guidebook for procurement, with a view to providing operating instructions and bring in greater transparency and predictability in procurement procedures under the Project.

**Procurement Arrangements and Profile.** Procurement under the Project will be carried out at the central level by the Project Management Unit [PMU] headed by the Chief Project Director [CPD] established for the Project, at the District level by the District Project Officers assisted by the Accounts Assistant at the District Level in each of the 10 District Project Offices [DPOs] located in the Districts covered under the Project [Shimla, Solan, Sirmour, Bilaspur, Hamirpur, Mandi, Kullu, Chamba, Kangra and Una], and by beneficiary GPs [supported by DPOs] at the GP level, in accordance with their approved Gram Panchayat Resource Management Plans [GP-RMP]/MG/OMIF. Officials of the PMU have prior experience of implementing a World Bank financed project and have also undergone training in STEP. GPs will need to be capacitated and provided basic procurement training on applicable procurement procedures and procurement documentation requirements outlined in COM, before initiating their procurements. To meet the readiness requirements of the Department of Economic Affairs [DEA] of the Government of India, the Project has already initiated and awarded contract for critical consultancy package for Environmental and Social Assessment to be retroactively financed by the Bank.

The project envisages procurement of low-risk, low-value goods, works and services as below:

a. ***Goods and Non-Consulting Services*** to be procured under the project are likely to include the following. At State/PMU level, purchase of IT Equipment such laptops, computers, printer, etc., procurement of printing services for IEC, office vehicles, office furniture, etc. are envisaged. At District and GP level, procurement activities will include procurement of Barbed Wire, U/Staple, Tools, Gunny Bags, Vermicompost/ Farm yard Manure, Sand, Seeds, Wooden posts/ poles, Seedlings, Grass tufts, Sign boards/hand prints, seed testing instrument, Seed, Fertilizer, Pesticide, Livestock - Small and Large Ruminants, Agricultural Tools and Implements, equipment, Farm machinery, e.g., power tiller, chaff cutters, pipes, tarpaulins, Medicines, supplements, sprinklers, seedlings, etc.

b. ***Procurement of Minor Civil Works*** is likely to include the following. At State/ PMU level, procurement of minor civil works will include extension, refurbishment and repair of office buildings, etc. At District and GP level, procurement activities will include procurement of works for construction of Water storage tanks, water channels, vermicompost pits, livestock Mangers, foot bridges, water lifting pumps, GI pipes, accessories, installation of ropeways, Ponds, Check Dams, Subsurface Dykes, Sump Wells etc. and labor contracts for preparing land for nursery, preparing nursery beds, water tank, works of filling gunny bags, sowing of seeds, preparing temporary nursery sheds, watering, hoeing, weeding, , fencing, bush cutting, pit digging, planting seedlings, preparing contour trenches, planting grass tufts, drainage line treatment works, fire management works, allowances and incentives for fire management, Spring development, eradication of exotic weed-lantana, etc. It may be noted that civil works at GP level are demand driven. There are no major civil works contracts envisaged in the project.

c. ***Consultancy Services*** to be procured under the project are likely to include services for developing a web-based portal for Integrated Financial Management Information System [IFMS], Water Monitoring and Modelling, Value Chain

Scoping Studies, Technical Support Study for addressing the needs of Transhumant, M and E, MIS, Baseline Survey, External and Internal Audit, Third Party Verification agent to verify achievement of Disbursement Related Results [DLR]s, need based assessments and studies, individual experts, etc. No consultancy services contracts envisaged at the District/Sub-district levels.

**The project includes several features of a decentralized, demand-driven project, and activities to be taken up at the community level by selected beneficiaries shall be as per the GP-RMP approved by the PMU of the HP Forestry Department/MG/OMIF**. The threshold of procurement activities at community level is expected not to exceed Request for Quotation [RFQ] threshold. Community-level procurement shall follow Community-Driven Development [CDD] arrangements as per the Bank's Procurement Regulations and as outlined in the Community Operations Manual [COM] currently under preparation. Given other on-going government programs, the activities to be funded following COM shall be identified upfront to avoid double-dipping and will require very close monitoring and oversight.

**Project Procurement Strategy for Development [PPSD] and Procurement Plan.** According to the requirement of the Regulations, a Project Procurement Strategy for Development [PPSD] has been developed, based on which the Procurement Plan for the first 18 months has been prepared. The PPSD describes how procurement in this project will support the Project Development Objective [PDO] and deliver value for money under a risk-based approach. It provides adequate supporting market analysis for the selection methods detailed in the procurement plan. The procurement plan specifies for each contract: [i] a description of the activities/contracts; [ii] selection methods to be applied; [iii] estimated cost; [iv] time schedules; [v] World Bank review requirements; and [vi] any other relevant procurement information. PMU shall submit to the World Bank, for its review and approval, any updates of the procurement plan approved by the World Bank. The project will use Systematic Tracking of Exchanges in Procurement [STEP] system for all its procurement activities carried out at the PMU [Centre] and District levels.

**Summary from PPSD.** The project is preparing its Procurement Strategy document. As per the draft document, the project's total value is US $100 million of which procurement spend is approximately 80 %. Extensive market analysis has been carried out for procurement packages and decisions on packages are made to ensure adequate participation of bidders. Consultancy contracts are framed based on market research and packaging decided in terms of scope of services and period. Based on the need assessment, the project has decided to use Government e Marketplace [GeM][1] for procurement of Goods up to US $100,000 and as mentioned under the paragraph in the Procurement Plan on National Procurement Procedures.

**Procurement Capacity Building.** Though project staff has past experience of implementing World Bank financed HP Mid-Himalayan Watershed Development Project [HPMHWDP] governed by the Bank's Procurement Guidelines, however, they need to be exposed to the Procurement Regulations applicable to the Project. HP Forestry Department will be sending key procurement staff of PMU and DPOs

to the Indian Institute of Management [IIM], Lucknow or the Administrative Staff College of India [ASCI], Hyderabad from time to time to attend procurement training on World Bank Procurement Framework [PF] applicable to the project. Presently, project staff from PMU and two DPOs will be attending the two-week residential training program on World Bank Procurement Regulations conducted at ASCI, Hyderabad in February 2020. These officials will subsequently provide training to other project staffs prior to implementation of the procurement activities in the project. The PMU/DPOs/APOs will also provide basic procurement training to GPs/Beneficiaries once the Gram Panchayat Resource Management Plan [GP-RMP] is approved by DPO/PMU, and before commencing implementation of GP-RMP. The project officials can also avail of the free Massive Open Online Course on public procurement www.procurementlearning.org offered by the Bank to build their capacity. The Bank had already conducted one training on STEP for PMU officials and will organize STEP training again on need basis for the concerned DPOs staff in near future.

**Procurement Planning**. For each contract to be financed by the Loan, the different procurement methods or consultant selection methods to be used, the need for pre-qualification, estimated costs, prior review requirements, and time frame will be reflected in the Procurement Plan to be agreed between the Borrower and the Bank team. The Procurement Plan will be uploaded in STEP by PMU/DPOs and the approved procurement plan will be disclosed on the project website and Bank's external website.

The procurement plan for the first 18 months of project implementation and all its updates will be submitted to the Bank through STEP, and will lay out the appropriate, fit for purpose market approach and selection methods for procurement of goods, works, non-consulting and consulting services financed by the Bank. It will be updated at least annually or as required to reflect the actual project implementation needs and improvements in institutional capacity.

**e-Procurement.** Currently, the Himachal Pradesh Forestry Department of the Government of Himachal Pradesh is using e-procurement system for its procurement. However, PMU housed in the Forestry Department will be carrying out procurement using e-Procurement for the first time in the project, therefore, their capacity building needs to be done for e-Procurement. The project will make use of Government of India's National Informatics Centre [NIC] platform assessed by the Bank against Multilateral Development Bank [MDB] requirements for procurements estimated at INR 5 Lakhs and above.

**Advance Contracting with Retroactive Financing**. For effective project implementation and start-up, the project has initiated advance contracting of critical consultancies for Preparation of Environmental and Social Framework [ESF] and Project Implementation Plan [PIP], and procurement of small value goods such as tools, gunny bags, seeds, IT equipment and accessories, vehicles,

1 https://gem.gov.in/

etc.] and works [very small value labor contracts for Development of Nurseries [52 nos.] in 26 clusters in 10 Districts covering 428 GPs. The total value of this spend is approximately 1.2 % of the Bank loan. Payment made by PMU/HPFD for these contracts following World Bank procurement procedures during the 12 months prior to the tentative Loan signing date shall be eligible for retroactive financing.

**Record Keeping**. All records pertaining to award of tenders/selection of consultants, including tender notification/advertisement, register pertaining to sale and receipt of bids, bid/proposal opening minutes, bid/technical and financial evaluation reports, comparative statements, Goods, Receipt Note [GRN] and all correspondence pertaining to bid evaluation, communication sent to/with the Bank in the process, bid securities, and approval of invitation/evaluation of bids/proposals would be maintained by the PMU and at DPO/GP level.

**Contract Management.** The PMU, HPFD will be responsible for overall procurement and contract management under the project. At the Centre, procurement staff will be responsible for contract monitoring and supervision of contracts awarded by PMU. At DPO level, contract monitoring and supervision will be done by technical staff at DPOs/APOs level [Agriculture, Animal Husbandry/Engineering staff of technical wing of DPO level and Forest Extension and Social Extension staff at APO level] to ensure timely delivery of quality outputs from the procurement contracts in the project areas. All payments will be made by DPOs for district and sub-district level procurements after receipt of Goods receipt Note [GRN]. Work Completion Certificates, etc. The Integrated Financial Management Information System [IFMIS] being developed under the Project will facilitate monitoring of various procurement activities in terms of physical and financial achievements on a monthly basis. The day to day monitoring of procurement activities will be done by APOs/DPOs at field level which will be updated in the online web-based system at district level and will be reviewed by PMU at the Centre.

**Complaint Handling Mechanism.** A complaint handling mechanism to address procurement-related complaints under the Project will be developed and implemented by the PMU/DPOs to the satisfaction of the Bank. Upon receipt of complaints, immediate action would be initiated to acknowledge the complaint and to redress it within a reasonable timeframe. All complaints will be addressed at levels higher than the level at which the procurement process was undertaken, or the decision was taken. Any complaint received will also be forwarded to the Bank for information, and the Bank would be kept informed after the complaint is redressed.

**Leased Assets:** Not Applicable

**Procurement of Second hand Goods:** Not Applicable

**Domestic Preference*:*** The provision of domestic preference will be applied in the evaluation of bids in accordance with Annex VI of the Regulations.

**Procurement Thresholds and Prior Review Thresholds.** The table below describes various procurement methods to be used for activities financed by the Loan.

**Table 1: Procurement Thresholds**

| Procurement approach and method | Thresholds [US$ equivalent] |
|---|---|
| **Open International [Goods, IT, and Non-consulting services] – Request for Bids [RFB]** | >10 million |
| **Open National [Goods, IT, and Non-consulting services] – Request for Bids [RFB]** | >100,000 and up to 10 million |
| **National Request for Quotation [RFQ] – [Goods/Works/Non-consulting Services]** | Up to 100,000 |
| **Open International [Works] – Request for Bids [RFB]** | >40 million |
| **Open National [Works] - Request for Bids [RFB]** | >100,000 and up to 40 million |
| **Direct Selection** | With prior agreement, based on justification |
| **Framework Agreement** | For Goods/Works/Non-consulting services: According to paragraphs 6.57-6.59 of Section VI of the Regulations.<br><br>For Consulting services: According to paragraph 7.33 of Section VII the Regulations. |
| **Force Account** | In accordance with paragraphs 6.54 and 6.55 of Section VI of the Procurement Regulations, and with prior agreement in Procurement plan with the Bank. |
| **Consulting Services [Firms]** | CQS: As per requirements of paragraphs 7.11 and 7.12 of Section VII of the Regulations.<br><br>LCS, FBS: in justified cases<br>QCBS, QBS: in all other packages |
| **Shortlist of National Consultants** | Up to 800,000 |

**Procurement prior-review thresholds[2].** Based on the current procurement risk rating of 'Moderate', the World Bank will prior review the following contracts:

(a) Works [including turnkey, supply and installation of plant and equipment and PPP]: All contracts more than US $15 million equivalent
(b) Goods and Information Technology: All contracts > US $4 million equivalent
(c) Non-consulting Services: All contracts > US $4 million equivalent
(d) Consulting Services: Firms: All contracts >US $2 million equivalent
(e) Consulting Services: Individuals: All contracts > US $400,000 equivalent
(f) Direct Selection: The justification of Direct Selection for all contracts.

The above thresholds are for the initial 18-month implementation period. Based on the procurement performance of the project, these thresholds may be subsequently modified. Even for large-value post review cases, the inputs of the World Bank on technical specifications will be obtained by the project. Irrespective of the thresholds, Terms of Reference shall be prior reviewed by Bank. The prior review thresholds will

also be indicated in the Procurement Plan. The Procurement Plan will be subsequently updated annually [or at any other time if required] and will reflect any change in the prior review thresholds. The details of National Procurement Procedures are outlined in the Procurement Plan.

**Prior review contracts.** In the case of contracts subject to prior review, PMU, HPFD/DPOs will seek the World Bank's no objection before granting/agreeing to: [a] an extension of the stipulated time for performance of a contract that either increases the contract price or has an impact on the planned completion of the project; [b] any substantial modification of the scope of Works, goods, IT system; non-consulting services, or consulting services and other significant changes to the terms and conditions of the contract; [c] any variation order or amendment [except in cases of extreme urgency] that, singly or combined with all variation orders or amendments previously issued, increases the original contract amount by more than 15 percent; and [d] the proposed termination of the contract. Complaints received in all prior review cases shall be sent to Bank for review and the response to the complaint in such cases, shall be cleared with the Bank. Complaints with allegations of fraud and corruption, shall be shared with Bank, irrespective of the thresholds.

**Disclosure of procurement information.** The following documents shall be disclosed on the project/state websites: [a] Procurement Plan and its updates; [b] an invitation for bids for procurement of Works, Goods, IT system procurement and non-consulting services; [c] request for expression of interest for selection/hiring of consulting services; [d] contract awards of Works, Goods, IT system procurement and non-consulting services procured following international and national procedures; [e] a list of contracts/purchase orders placed following RFQ [Request for Quotation] procedures on a quarterly basis; [f] a list of contracts following direct contracting [DC] on a quarterly basis; [g] an annual financial and physical progress report of all contracts; and [h] an action taken report on the complaints received on a quarterly basis.

The following details shall be sent to the World Bank for publishing on the United Nations Development Business and the World Bank external website: [a] Specific Procurement Notice [i.e., invitation for bids] for procurement of Works, Goods, IT system procurement and non-consulting services using open international procedures; [b] Requests for Expression of Interests above US $800,000; [c] contract award details of all procurement of Works, Goods, IT system procurement and non-consulting services using open international procedure; and [d] a list of contracts/purchase orders placed following DC procedures on a quarterly basis. Further, the implementing agency will also publish on their websites any information required under the provisions of '*suo moto*' disclosure as specified by the Right to Information Act.

2 Determination of whether a contract meets the prior review threshold is based on : (i) the total value of the contract, including all taxes and duties payable under the contract; (ii) a contract whose cost estimate was below the Bank's prior review threshold is subject to prior review if the price of the lowest evaluated responsive bid (or, in the case of consulting services, the financial offer of the selected firm) exceeds such threshold at the bid evaluation stage; and (iii) in the case of a slice and package arrangement, the prior review threshold is determined based on the aggregate value of individual contracts to be awarded under such arrangement.

**National Procurement Procedure Conditions.** National competition for the procurement of Works, Goods, IT system procurement and non-consulting services according to the established thresholds will be conducted in accordance with paragraphs 5.3–5.5 of Section V of the Regulations and the following provisions:

I. Only the model bidding documents for National Competitive Procurement [NCP] agreed with the GOI Task Force [and as amended for time to time], shall be used for bidding.

II. Invitations to bid shall be advertised on a widely used website or electronic portal with free open access at least 30 days prior to the deadline for the submission of bids, unless otherwise agreed in the approved procurement plan.

III. No special preference will be accorded to any bidder either for price or for other terms and conditions when competing with foreign bidders, state-owned enterprises, small-scale enterprises or enterprises from any given State.

IV. Except with the prior concurrence of the Bank, there shall be no negotiation of price with the bidders, even with the lowest evaluated bidder.

V. Government e-Marketplace [GeM] set-up by Ministry of Commerce, Government of India will be acceptable for procurement under Request for Quotations [RFQ] method.

VI. At the Borrower's request, the Bank may agree to the Borrower's use, in whole or in part, of its electronic procurement system, provided that the Bank is satisfied with the adequacy of such system.

VII. Procurement will be open to eligible firms from any country. This eligibility shall be as defined under Section III of the Procurement Regulations. Accordingly, no bidder or potential bidder shall be declared ineligible for contracts financed by the Bank for reasons other than those provided in Section III of the Procurement Regulations.

VIII. The request for bids/request for proposals document shall require that Bidders/Proposers submitting Bids/Proposals include a signed acceptance in the bid, to be incorporated in any resulting contracts, confirming application of, and compliance with, the Bank's Anti- Corruption Guidelines, including without limitation the Bank's right to sanction and the Bank's inspection and audit rights.

IX. The Borrower shall use an effective complaints mechanism for handling procurement related complaints in a timely manner.

X. Procurement Documents will include provisions, as agreed with the Bank, intended to adequately mitigate against environmental, social [including sexual exploitation and abuse and gender-based violence], health and safety ["ESHS"] risks and impacts.

**Oversight and Monitoring by the Bank.** All contracts not covered under prior review by the Bank will be subject to post review during implementation support missions and/or special post review missions, including missions by consultants hired by the Bank. The Bank may conduct, at any time, Independent Procurement Reviews [IPRs] of all the contracts financed under the loan. High risk procurements, if any, will be identified for increased procurement and contract management support and indicated in the procurement plan. Bank team will provide

additional due diligence and independent review of the contract performance of such identified procurements.

**Procurement Review by the PMU, HPFD.** Independent procurement post review [PPR] with reporting requirements and agreed with the Bank [As per Para 4 of Annex II of the Procurement Regulations] will be undertaken for the project for PMU's own internal due diligence. PMU will hire PPR consultants as per Terms of Reference and reporting requirements agreed with the Bank to conduct PPR of PMU and DPOs on a half yearly basis.

**Other Special Selection Arrangements/Requirement**

Procurement by communities will be governed by the procedures outlined in the Community Operations Manual [COM] currently under preparation and in accordance with Paras 6.52 and 6.53 of Section VI of the Regulations. COM will be disclosed on the Project website.

## Annexure-4

| | | |
|---|---|---|
| **1. List of pesticides banned by Government of India** | | |
| A. | Pesticides Banned for manufacture, import and use (28Nos.) | |
| | 1. | Aldrin |
| | 2. | BenzeneHexachloride |
| | 3. | CalciumCyanide |
| | 4. | Chlordane |
| | 5. | CopperAcetoarsenite |
| | 6. | CIbromochloropropane |
| | 7. | Endrin |
| | 8. | EthylMercuryChloride |
| | 9. | EthylParathion |
| | 10. | Heptachlor |
| | 11. | Menazone |
| | 12. | Nitrofen |
| | 13. | ParaquatDimethylSulphate |
| | 14. | PentachloroNitrobenzene |
| | 15. | Pentachlorophenol |
| | 16. | PhenylMercuryAcetate |
| | 17. | SodiumMethaneArsonate |
| | 18. | Tetradifon |
| | 19. | Toxafen |
| | 20. | Aldicarb |
| | 21. | Chlorobenzilate |
| | 22. | Dieldrine |
| | 23. | MaleicHydrazide |
| | 24. | EthyleneDibromide |
| | 25. | TCA(Trichloroaceticacid) |
| | 26. | Metoxuron |
| | 27. | Chlorofenvinphos |
| | 28. | Lindane(BannedvideGazetteNotificationNoS.O.637(E)Dated25/03/2011)-Banned forManufacture, ImportorFormulatew.e.f.25th March,2011andbannedforuse w.e.f. |
| B. | Pesticide /Pesticideformulationsbannedforusebuttheirmanufactureisallowedforexport | |
| | 29. | NicotinSulfate |
| | 30. | Captafol80%Powder |
| C. | Pesticideformulationsbannedforimport,manufactureanduse(4Nos) | |
| | 1. | Methomyl24%L |
| | 2. | Methomyl12.5%L |

| | | |
|---|---|---|
| | 3. | Phosphamidon85%SL |
| | 4. | Carbofuron50%SP |
| D. | PesticideWithdrawn(7Nos) | |
| | 1. | Dalapon |
| | 2. | Ferbam |
| | 3. | Formothion |
| | 4. | NickelChloride |
| | 5. | Paradichlorobenzene(PDCB) |
| | 6. | Simazine |
| | 7. | Warfarin |

| **2. List of Pesticides Refused Registration** | |
|---|---|
| S.No. | NameofPesticides |
| 1. | CalciumArsonate |
| 2. | EPM |
| 3. | AzinphosMethyl |
| 4. | LeadArsonate |
| 5. | Mevinphos(Phosdrin) |
| 6. | 2,4,5-T |
| 7. | Carbophenothion |
| 8. | Vamidothion |
| 9. | Mephosfolan |
| 10. | AzinphosEthyl |
| 11. | Binapacryl |
| 12. | Dicrotophos |
| 13. | Thiodemeton/ Disulfoton |
| 14. | FentinAcetate |
| 15. | FentinHydroxide |
| 16. | Chinomethionate(Morestan) |
| 17. | AmmoniumSulphamate |
| 18. | Leptophos(Phosvel) |

| **3. Pesticides Restricted for Use in India** | |
|---|---|
| S.No. | NameofPesticides |
| 1. | AluminiumPhosphide |
| 2. | DDT |
| 3. | Lindane |
| 4. | MethylBromide |
| 5. | MethylParathion |
| 6. | SodiumCyanide |
| 7. | MethoxyEthylMercuricChloride(MEMC) |
| 8. | Monocrotophos |
| 9. | Endosulfan |

| | |
|---|---|
| 10. | Fenitrothion |
| 11. | Diazinon |
| 12. | Fenthion |
| 13. | Dazomet |

## 4. List of pesticides not permissible (WHO classes Ia, Ib and II)

**A. Extremely hazardous (Class Ia):**

| **Table 1: List of pesticides not permissible (WHO class Ia)** | |
|---|---|
| Common name | |
| Aldicarb | Ethoprophos |
| Brodifacoum | Flocoumafen |
| Bromadiolone | Hexachlorobenzene |
| Bromethalin | Mercuricchloride |
| Calciumcyanide | Mevinphos |
| Captafol | Parathion |
| Chlorethoxyfos | Parathion-methyl |
| Chlormephos | Phenylmercuryacetate |
| Chlorophacinone | Phorate |
| Difenacoum | Phosphamidon |
| Difethialone | Sodiumfluoroacetate |
| Diphacinone | Sulfotep |
| Disulfoton | Tebupirimfos |
| EPN | Terbufos |

**B. Highly hazardous (Class Ib):**

| **List of pesticides not permissible (WHO class Ib)** | |
|---|---|
| Common name | |
| Acrolein | Oxydemeton-methyl |
| Allyl alcohol | Paris green |
| Azinphos-ethyl | Pentachlorophenol |
| Azinphos-methyl | Propetamphos |
| Blasticidin-S | Sodiumarsenite |
| Butocarboxim | Sodiumcyanide |
| Butoxycarboxim | Strychnine |
| Cadusafos | Tefluthrin |
| Calciumarsenate | Thalliumsulfate |
| Carbofuran | Thiofanox |
| Chlorfenvinphos | Thiometon |
| 3-Chloro-1,2-propanediol | Triazophos |

| | |
|---|---|
| Coumaphos | Vamidothion |
| Coumatetralyl | Warfarin |
| Zeta-cypermethrin | Zincphosphide |
| Demeton-S-methyl | Famphur |
| Dichlorvos | Fenamiphos |
| Dicrotophos | Flucythrinate |
| Dinoterb | Fluoroacetamide |
| DNOC | Formetanate |
| Edifenphos | Furathiocarb |
| Ethiofencarb | Heptenophos |
| Isoxathion | Methiocarb |
| Lead arsenate | Methomyl |
| Mecarbam | Monocrotophos |
| Mercuricoxide | Nicotine |
| Methamidophos | Omethoate |
| Methidathion | Oxamyl |

**C. Moderately hazardous (Class II):**

| **List of pesticides not permissible (Class II)** | |
|---|---|
| Common name | |
| Alanycarb | Endosulfan |
| Anilofos | Endothal-sodium |
| Azaconazole | EPTC |
| Azocyclotin | Esfenvalerate |
| Bendiocarb | Ethion |
| Benfuracarb | Fenazaquin |
| Bensulide | Fenitrothion |
| Bifenthrin | Fenobucarb |
| Bilanafos | Fenpropidin |
| Bioallethrin | Fenpropathrin |
| Bromoxynil | Fenthion |
| Bromuconazole | Fentin acetate |
| Bronopol | Fentin hydroxide |
| Butamifos | Fenvalerate |
| Butylamine | Fipronil |
| Carbaryl | Fluxofenim |
| Carbosulfan | Fuberidazole |

| | |
|---|---|
| Cartap | Gamma-HCH,Lindane |
| Chloralose | Guazatine |
| Chlorfenapyr | Haloxyfop |
| Chlordane | HCH |
| Chlorphoniumchloride | Imazalil |
| Chlorpyrifos | Imidacloprid |
| Clomazone | Iminoctadine |
| Coppersulfate | Ioxynil |
| Cuprous oxide | Ioxyniloctanoate |
| Cyanazine | Isoprocarb |
| Cyanophos | Lambda-cyhalothrin |
| Cyfluthrin | Mercurous chloride |
| Beta-cyfluthrin | Metaldehyde |
| Cyhalothrin | Metam-sodium |
| Cypermethrin | Methacrifos |
| Alpha-cypermethrin | Methasulfocarb |
| Cyphenothrin[(1R)-isomers] | Methyl isothiocyanate |
| 2,4-D | Metolcarb |
| DDT | Metribuzin |
| Deltamethrin | Molinate |
| Diazinon | Nabam |
| Difenzoquat | Naled |
| Dimethoate | Paraquat |
| Dinobuton | Pebulate |
| Diquat | Permethrin |
| Phenthoate | Quizalofop-p-tefuryl |
| Phosalone | Rotenone |
| Phosmet | Spiroxamine |
| Phoxim | TCA [ISO](acid) |
| Piperophos | Terbumeton |
| Pirimicarb | Tetraconazole |
| Prallethrin | Thiacloprid |
| Profenofos | Thiobencarb |
| Propiconazole | Thiocyclam |
| Propoxur | Thiodicarb |
| Prosulfocarb | Tralomethrin |
| Prothiofos | Triazamate |

| | |
|---|---|
| Pyraclofos | Trichlorfon |
| Pyrazophos | Tricyclazole |
| Pyrethrins | Tridemorph |
| Pyroquilon | Xylylcarb |
| Quinalphos | |

**Annexure-5**

# Environment and Social Screening Checklist

## A. Environment Screening

### Part 1: Environmental Data Sheet

| | | |
|---|---|---|
| | Date of Screening: | |
| | Name of Gram Panchyat | |
| 1. | List of activities to be supported under the plan: | |
| 2. | Area of GP (ha) | |
| 3. | Forest Area<br><br>Status<br><br><br>Key Tree Species selected for afforestation<br><br>Current use of forest for any livelihood activity<br><br>Area infested by exotic/noxious weeds | _____ Ha<br><br>☐ Degraded ☐ VDF ☐ MDF ☐Open Forest<br><br>_____:<br><br>_____<br><br>_____ Ha |
| 4. | Pasture Land<br>Season when fodder is available<br>Livestock numbers | _____ Ha<br>_____ No #<br>_____ No # |
| 5. | Forest Fire Vulnerability<br>Forest fire incidences | _____<br>_____ No #/ year |
| 6. | Availability of NTFPs, MAPs and minor forest produce<br>Key NTFP species:<br>Quantity harvested each season (species-wise): | |
| 7. | Presence of Forest nursery, or nearest nursery site | _____ No # and area (ha)<br><br>Annual production capacity (saplings/year): |
| 8. | Existing Forest management plan for the selected forest area in the GP | _____ (name of working plans/ management plans etc.) |
| 9. | Are any civil works proposed as part of the project in this plan? | |
| 10. | Are there any religious sites, culturally important sites in the project activity area? If yes, please give details (name, distance from project site). | |

### Part 2: Eligibility Screening

| S No | **Activities listed below will NOT be eligible for support under the proposed project** | **Confirmation that the activity is NOT part of the project (please tick)** |
|---|---|---|
| 1. | Activities that are not consistent with the Forest Working plans/ CAT plans of the area | |
| 2. | Activity that involves construction of check dam> 6 m height | |
| 3. | Activities that promote or involve procurement of pesticides that falls in WHO classes IA, IB, or II. | |
| 4. | Activities that involve large-scale clearing of land, dredging of water bodies, undercutting of slopes, replacement of natural vegetation, habitat destruction, etc., that may cause permanent, irreversible impacts. | |
| 5. | Any activity that has a significant potential of causing forest fires. | |
| 6. | Any activity that involves child labour (persons under | |

| | | |
|---|---|---|
| | 14 years of age in any activity and persons above 14 years and under 18 years of age in hazardous activities). | |
| 7. | Activities that would adversely affect places of cultural significance and protected historical/archeological assets (both natural and human-made). | |
| 8. | Activities that involve felling of trees without a permit. | |
| 9. | Activities that involve NTFP/MAP harvesting without approvals/permits | |
| 10. | Any activity that is not consistent with the project description at time of project negotiations, unless subsequently agreed to with the Bank along with the appropriate level of environmental safeguards management. | |
| 11. | Activities which require land acquisition. | |
| 12. | Acitiviteis which put permanent restrictions on access/ usage of resources. | |

**Part 3: Legal and Regulatory Requirements Checklist**

| **Legal and Regulatory Requirement** | **Applicability to the project** | **Compliance (in case it is applicable)** |
|---|---|---|
| Consent for Establishment and Consent for Operation from the HP Pollution Control Board in case of NTFP/MAP processing activities | ☐ Applicable to activities under the project<br>☐ Not Applicable to activities under the project | If Applicable,<br>☐Consent Taken<br>☐Consent not taken<br><br>Consent will be taken by _____date |
| Permit for transit of NTFP/MAP in case of NTFP/MAP marketing and processing activities | ☐ Applicable to activities under the project<br>☐ Not Applicable to activities under the project | If Applicable,<br>☐Consent Taken<br>☐Consent not taken<br><br>Consent will be taken by _____date |
| Permit for tree felling from the HP Forest Department in case any activity involves felling of trees | ☐ Applicable to activities under the project<br>☐ Not Applicable to activities under the project | If Applicable,<br>☐Consent Taken<br>☐Consent not taken<br><br>Consent will be taken by _____date |
| Permit for ground water extraction from the HP Ground Water Authority in case any activity requires groundwater extraction (if required) | ☐ Applicable to activities under the project<br>☐ Not Applicable to activities under the project | If Applicable,<br>☐Consent Taken<br>☐Consent not taken<br><br>Consent will be taken by _____date |
| | | |

**B. Social Screening**

1. Land Requirement

| Details | Unit | Quantity | Classification/Category/ Details | Present Uses and Users |
|---|---|---|---|---|
| Government Land | | | | |
| Private Land (Donated) | | | | |
| Forest Land | | | | |
| Title Holder | | | | |
| Non-titleholders (Encroacher) | | | | |
| Non-titleholders (Squatter) | | | | |
| People losing livelihoods/ access due to loss of Govt. Lands to Project | | | | |

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

| Type | Unit | Quantity |
|---|---|---|
| | Number | |
| | Number | |
| | Number | |
| | Number | |
| | Number | |

**Other**

| Question | Yes | No | Details |
|---|---|---|---|
| **Legal/ Disputes** | | | |
| Does this land comes under FRA in terms of unsettled claims? | | | If YES, please choose any other piece of land |
| Does this land comes under High Court Order for Eviction of Encroachments? | | | If YES, please choose any other piece of land |
| Is this land been encroached? | | | If YES, please choose any other piece of land |
| Does this land comes under any kind of dispute from forest dwellers? | | | If YES, please choose any other piece of land |
| **Access/ Use Restrictions on Land** | | | |
| Does this land fall in or restricts access of communities to their conserved areas, sacred groves, with no other accessible routes available? | | | If YES, please choose any other piece of land |
| Does this land impact anyone adversely? | | | If YES, please choose any other piece of land |
| Does this land impacts anyone's access to resources? | | | If YES, please choose any other piece of land |
| Does the proposed activities use land that is under Customary Ownership? | | | If YES, please choose any other piece of land |
| **Tribal Related** | | | |

| | | | |
|---|---|---|---|
| Are there any tribal's in the Gram Panchayat where the GP-RMP is proposed? | | | Please collect the details of the tribals using the Socio-Economic Survey format and refer to TDF. |
| Are these trials consulted during the preparation of GP-RMP | | | If No, please give reasons |
| Are these tribal's part of the beneficiaries? | | | If No, please give reasons |
| **Labour** | | | |
| Is labour required for implementing this GPRMP. | | | If YES, please give a) approximate number of labour and b) duration of their requirement. |
| Can the labour requirement be met with local labour? | | | If No, please give details from where the labour will be brought. |
| **Cultural Heritage** | | | |
| Please give details of the cultural heritage of the area? | | | Give full details |
| Will the proposed activities disturb/ adversely impact the cultural heritage of the area? | | | If YES, please give the details. |
| Please list the vulnerable/ disadvantaged groups in the GP. | | | Please five full details |
| Have they been consulted in preparation of GP-RMP? | | | If No, please give reasons as to why they are not consulted. |
| Will they be part of the beneficiaries under the GP-RAMP? | | | If No, please give reasons |
| **Community Health and Safety** | | | |
| Will the proposed activities affect the community health and safety? | | | If YES, please give details. |

**Screening checklists filled by:**
Name: _____
Designation: _____
Date: _____

**Screening checklists verified by:**
Name: _____
Designation: _____
Date: _____

**c. Socio-economic Survey Format**

| | | | |
|---|---|---|---|
| 1 | Name of the Head of the Household | | |
| 2 | Social Category | 1. SC 2. ST 3. OBC 4. General 5. Others (specify)…… | |
| 4 | Family Pattern | 1. Joint 2. Nuclear 3. Single 4. Extended | |
| 5 | Size of Family | 1. Small (2-4) 2. Medium (5-7) 3. Large (Above 7) | |
| 6 | Mother Tongue | Specify | |
| 7 | Native Place | | |

8. Household Assets (Please Record Numbers)

| TV | Heater | Cycle | Two wheeler | Four Wheeler | Mob. Phone | Refrigerator | Other |
|---|---|---|---|---|---|---|---|
| | | | | | | | |

9. Live Stock Assets (Please Record Numbers)

| Classification | Cows | Buffaloes | Sheep | Goats | Poultry | Others |
|---|---|---|---|---|---|---|
| Give Number | | | | | | |

10. Access to Utility (1-Yes/ 2-No)

| Electricity | water supply Source | Own water sources, well, tube well | Separate Bath, Toilet | Kitchen |
|---|---|---|---|---|
| | | | | |

11. Type of fuel used for cooking: (1-Yes/ 2-No)

| Firewood in village | Firewood in forest | Bio gas | Kerosene | Gas (LPG) | Charcoal | Others |
|---|---|---|---|---|---|---|
| | | | | | | |

12. Kindly indicate the consumption/expenditure on different items

| S.No. | Particulars | Monthly Expenditure in Rs. | Rank them from highest to lowest |
|---|---|---|---|
| 1. | Food | | |
| 2. | Agriculture | | |
| 3. | Housing | | |
| 4. | Cooking Fuel | | |
| 5. | Clothing | | |
| 6. | Health | | |
| 7. | Education | | |
| 8. | Local transport | | |
| 9. | Communication | | |
| 10. | Social functions | | |
| 11. | Leisure | | |
| 12. | vehicle maintenance | | |
| 13. | out station travel | | |
| 14. | Loan Repayment | | |
| 15. | Others | | |

13. Health and Sanitation

| | | | |
|---|---|---|---|
| 1 | Do you have a latrine in your house? | 1 – Yes; 2 – No; 3 – Using community toilet; 4-Out side (open place) | |
| 2 | Do you and your family members use it? | 1. Yes (All of us always regularly)<br>2. Yes (Some of us, but irregular)<br>3. No. | |
| 3 | Do you wash your hands with soap after defection? | 1. Yes (All of us always regularly)<br>2. Yes (Some of us, but irregular)<br>3. No. | |
| 4 | Which is the nearest formal medical facility available? | PHC – 1; CHC- 2; District Hospital – 3; Private clinic – 4; Private Hospital – 5; Others – 6 | |
| 5 | Have you heard about HIV/AIDS: | Yes 1; No – 2 | |
| 6 | If yes, what is the source? | Newspaper – 1; TV- 2; radio- 3; NGO camp– 4; Govt. camp – 5; | |

14. Details of Family Members (fill appropriate code)

| S.No. | Name of the Person | Relationship with Head of the Household | Sex (M/F) | Age | Marital Status | Educational Qualification | Employment Status | Reason for not working | Occupation | | Professional Skills | Monthly Income | | Vulnerable | Beneficiary of Govt. Scheme |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | Primary | Subsidiary | | Primary | Subsidiary | | |
| | | | | | | | | | | | | | | | |
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Marital Status: 1-Married; 2-Unmarried; 3-Divorcee; 4-Separate; 5-Widowed
Educational Qualification: 1 – illiterate; 2 – Informal education; 3 – Class1–3; 4 – Class4–6; 5 – Class7–9; 6 – Class10; 7 – Class11–12; 8 – Graduate and above; 9 – Professional; 99 – not applicable [not of school going age]
Employment Status: Yes1; No 2
Reason for not working: No work available-1; Seasonal inactivity-2; Household family duties-3; Old/Young-4; Handicapped-5; Others-6 (Specify)_____
Occupation : 1 – Housewife; 2 – Retired/Old age; 3 – Farmer;/Tiller; 4 – Agriculture labour; 5 – Skilled labour /e.g. Carpenter, Plumber, Driver, Mason, etc; 6 – Unskilled labour/e.g. Construction labourer, Loader, House help/ House maid, Caretaker; Watchman, etc; 7 – Traditional Artisan; 8 – Services e.g. Barber; Milkman, Dhobi; Cobbler; etc; 9 – Petty shop; 10 – Vendor; 11 – Business;(e.g., Shop–owner); 12 – Collection of NTFP and MFP; 13 – Government service; 14 – Private service; 15 – Others_____ ; 99 – Not Applicable;
Professional Skills: Computer-1, typing-2, construction-3, mechanics-4, carpentry-5, driving-6, others (specify) ……7
Vulnerble: 1 – Visual; 2 – Hearing/and/ or speech; 3 – Orthopaedic; 4 – Mentally ill; 5 – Mentally retarded; 6 – Cerebral Palsy; 7 – HIV; AIDS; 8 – Widowed; 9 – Separated; 10 – Old age; 11 – Destitute; 12 – Orphaned; 13 – Trans-sexual; 14 – Chronically ill; 15 – Any other [specify] _____

## Summary of Key ESMF Actions – by Project Components and Subcomponents

**Annexure 6**

| ACTIVITIES | IMPACTS (POSITIVE and NEGATIVE) | ENHANCEMENT/ MITIGATION MEASURES | RESPONSIBILITY |
|---|---|---|---|
| FORESTRY OPERATIONS<br>• Plantations<br>• Nurseries<br>• Vegetative barriers<br>• Contour trenches<br>• Grass planting<br>• Eradication of invasive species<br>• Spring Source Development<br>• Fire Protection | Positive Impacts<br>• Increase in vegetative cover<br>• Increase in moisture infiltration<br>• Increase in fodder<br>• Reduction in soil erosion including soil & nutrient loss<br>• Reduction in run-off<br>• Potential plantation and grassland area<br>• Rejuvenation and Maintenance of traditional water sources<br>• Increase involvement of communities in fire protection in forest areas and awareness on its environmental impacts | Enhancement Measures<br>• Follow the provisions of Biodiversity Management Plan and Integrated Pest and Nutrient Management Plan with key strategies for biodiversity conservation that includes: i) promotion of indigenous species in plantations, fodder plots and nurseries and avoidance of exotic, invasive species; ii) adoption of sustainable harvesting and production of NTFP; iii) updating of peoples biodiversity registers in recently denotified wildlife panchayats and community capacity building; iv) site screening for avoiding critical natural habitats ; vi) negative list to ensure biodiversity conservation, prevent forest fires, habitat fragmentation, land use modifications, and prevent felling of trees.<br>• Selection of high productive native species over exotic species<br>• Plantation of mixed broad life species to supplement fodder.<br>• Equal sharing of resources among users by rules/ regulations of GP-RMP<br>• Silvipasture practices should be encouraged in areas where there is a demand for a mixture of fodder and fuel wood and can be adopted in marginal arable lands, private non-arable lands and community wastelands.<br>• Training villagers in management of forest fodder<br>• Establishment of fodder banks and grass godowns<br>• Enrichment of fodder with cotton seed, oil cakes, cellulosic wastes and commercial feed; Fodder experts shall be involved in this<br>• Inventory for dry fodder to be taken into account in fodder management practices<br>• Local communities and disadvantaged groups like women should be closely involved in forest protection, raising nurseries, seed treatment and sapling growing activities<br>• The grass should be cut low when harvested no more than 15 cm above the root stock.<br>• Grass should not be cut until it has matured and seed drop has occurred.<br>• Protection of pasture lands from other land uses<br>• Development and improvement of devices for fodder cutting besides available techniques (chafer cutting)<br>• Tree vegetation in existing forest areas should be restocked, especially in upper and mid catchment areas for replenishment<br>• Fuel wood should be obtained from shrub species<br>• Local shrubs and perennial grasses should be planted as vegetative barriers in the form of contour v-ditches | PMU, IDP through DPOs and APOs<br>Agriculture Department<br>Animal Husbandry Department<br>Consultants |

| ACTIVITIES | IMPACTS (POSITIVE and NEGATIVE) | ENHANCEMENT/ MITIGATION MEASURES | RESPONSIBILITY |
|---|---|---|---|
| | Negative Impacts<br>• Change in diversity of flora and fauna<br>• Introduction of exotic species could have adverse impacts<br>• Increase in vector born diseases<br>• Increased risk of forest fire, habitat and grazing resources loss | Mitigation Measures<br>• Follow the screening procedures.<br>• When land is required for these facilities, follow the resettlement policy framework (RPF) to address and mitigate any adverse social and economic impacts arising from voluntary land donation,<br>• When there are any community-imposed use restrictions that may restrict traditional usage, and adversely affect the most vulnerable households; such investment GPRMPs should be screened for adverse impacts on traditional use and customary rights, and when needed suitable mitigation action plans needs to be prepared and implemented by the beneficiary groups, GPs and HPFD.<br>• Tree planting should be done along the contours in either continuous or discontinuous trenches depending on local vegetation, terrain, soil type, land tenure and local requirements. The productivity of government, village common /private land, forest land and waste lands should be increased through afforestation / reforestation.<br>• Sufficient area should be allowed within the plantation for growing intermediate products like shrubs and grasses. The Absolute tree density shall be followed as per MoEF norms.<br>• Lower tree densities with a corresponding increase in the proportion of shrub and grass species should be planted to meet the fodder requirements.<br>• About 500-1000 trees should be planted per hectare, equally spaced along contour.<br>• Commonly acceptable arrangements in conjunction with improved pasture species should be followed for protection and exploitation.<br>• The selection of vegetative barriers species should be based on local conditions, soils moisture, etc.<br>• The barriers should be developed across the slope and along the field boundaries to intercept surface runoff and allow soil to accumulate behind the barriers.<br>• The barriers should be placed precisely along the contour through proper alignment without loss of land available for cultivation<br>• The barriers should not be damaged while the intermediate products are harvested<br>• Bulk planting of fodder should be carried out mainly on common lands.<br>• Grass planting should be carried out in shallow trenches and ridges.<br>• Planting areas for fodder should also be developed close to homesteads to reduce time for collection | PMU, IDP through DPOs and APOs<br>Agriculture Department<br>Animal Husbandry Department<br>Consultants |

| ACTIVITIES | IMPACTS (POSITIVE and NEGATIVE) | ENHANCEMENT/ MITIGATION MEASURES | RESPONSIBILITY |
|---|---|---|---|
| SOIL WATER CONSERVATION<br>• Erosion control<br>  ○ Contour vegetative hedges<br>  ○ Gully control measures<br>  ○ Drainage line treatment<br>  ○ Stream bank protection<br>• Village pond construction/ Rehabilitation<br>• Water harvesting, water conveyance structures and reuse of rain water<br>  ○ Check dams<br>  ○ Sub surface dykes<br>  ○ Recharge pits<br>  ○ Irrigation Channels | Positive Impacts<br>• Increased groundwater recharge and availability<br>• Improved irrigation facilities<br>• Improved drinking water availability<br>• Possible improvement in groundwater quality<br>• Reduce soil erosion including soil & nutrient loss<br>• Increased perenniality of streams<br>• Reduced runoff<br>• Reduction in flood occurrence | Enhancement Measures<br>• Establish a robust groundwater monitoring and management system. Record inflows and withdrawals. Allocate quotas for withdrawals.<br>• Empower Gram Panchayats/ Community Organizations to stop indiscriminate drilling of bore wells and unscientific withdrawal of groundwater.<br>• Rules and regulations over sharing and rational use of water to be framed by the stakeholder communities through GP-RMP<br>• Build capacity of communities to operate and maintain and soil and water conservation structures.<br>• Ridge to valley (from starting point of stream) treatment is to be adopted to harvest rain water and control soil erosion because velocity of water is reduced from top.<br>• Maintenance procedures after construction, such as silt removal and vegetative cover for embankments should be by farmers. | PMU, IDP through DPOs and APOs<br>Agriculture Department<br>Animal Husbandry Department<br>Consultants |

| ACTIVITIES | IMPACTS (POSITIVE and NEGATIVE) | ENHANCEMENT/ MITIGATION MEASURES | RESPONSIBILITY |
|---|---|---|---|
| | Negative Impacts<br>• Reduction in water availability at down stream<br>• Siltation in water harvesting structure<br>• Pesticides & insecticides pollution in water harvesting structure with consequent effect on water quality<br>• Check dam failures<br>• Soil erosion & siltation rates due to construction activities<br>• Mosquito breeding in village ponds/farm pond<br>• Water born diseases due to water contamination<br>• Algal growth and eutrophication due to increased levels of nutrients in surface water bodies<br>• Stagnation of water in surface streams resulting in change in taste & increase in odour<br>• Possibility of water logging | Mitigation Measures<br>• Follow the screening procedures.<br>• PMU to ensure water quality and availability to the community<br>• PMU to take up measure for prevention of vector borne diseases and other communicable diseases;<br>• Vegetative measures may be combined with possible cut off drains to prevent rapid overland flow into roadsides<br>• For side erosions stabilization of side slopes with vegetative cover coupled with retaining walls shall be provided<br>• Design of gully control structures are to be prepared specific to each work site<br>• The site for check dams shall be site specific, gully checks for low slope whereas silting basins shall be used for steep slopes<br>• Stone rip–rap or pitching, wooden piles shall be provided under conditions of high soil erosion.<br>• Provision should be made to trap transported debris and bed load. Sediment traps should be located at the inlet and easily accessible for cleaning<br>• Scour protection should be provided at the base of the overflow spillway and a stone pitched channel should be provided to lead the excess water away from the structure<br>• Village ponds should be lined and stone pitching and turfing on sided should be carried out<br>• Fencing of water impounding structures and other construction areas, especially those closer to habitation<br>• Sediment traps with stone pitching and turfing should be constructed<br>• Soil conservation measures around the structures (bio-engineering measures).<br>• Deep wells may not be dug to reduce drawing underground water.<br>• Surface run-off should be intercepted at field boundaries and soil accumulation should be behind the barriers<br>• Grass clumps should be planted all along the boundaries<br>• Disposal of waste water away from the ponds and proper drainage<br>• Fish rearing to consume the mosquito eggs.<br>• When there are tribals in the Gram Panchayat follow the TDF | PMU, IDP through DPOs and APOs<br>Agriculture Department<br>Animal Husbandry Department<br>Consultants |

| ACTIVITIES | IMPACTS (POSITIVE and NEGATIVE) | ENHANCEMENT/ MITIGATION MEASURES | RESPONSIBILITY |
|---|---|---|---|
| AGRICULTURE & ALLIED ACTIVITIES<br>• Conservation measures<br>  ○ Vegetative field boundaries<br>  ○ Reuse of harvested water<br>  ○ Furrow contour cultivation<br>• Production measures<br>  ○ Organic farming<br>  ○ Crop demonstration<br>  ○ Rainfed crop demonstration<br>  ○ On farm fodder and biomass production<br>  ○ Intensive farming<br>  ○ Diversification in crop and livestock<br>• Constructions of tanks and secondary distribution of water | Positive Impacts<br>• Increased fodder production<br>• Reduced surface run-off and soil and nutrient loss<br>• Improved crop cultivation practices<br>• Enhanced soil moisture<br>• Improved productivity<br>• Diversification<br>• Economic benefits | Enhancement Measures<br>• Mixed cropping and flexibility in planting, rotation of crops and bringing the cultivated land under leguminous crop (pea, lentil etc.) should be encouraged as these will maintain soil fertility.<br>• Promotion of agro–forestry will maintain biological fertility of soil.<br>• Plantation of fodder species in the uncultivable waste land will supplement fodder.<br>• Use of waste bio products for packaging<br>• Demonstrations should be established only where surface stabilization using vegetative barriers are complete<br>• Plantation/ protection of pest controlling plants (Marigold, etc.)<br>• Build awareness among farmers on mixed cropping, use of bio-compost, biotic control of pests, etc. | PMU, IDP through DPOs and APOs<br>Agriculture Department<br>Animal Husbandry Department<br>Consultants<br>Farmers/ Beneficiaries<br>UGs/ CAGs |

| ACTIVITIES | IMPACTS (POSITIVE and NEGATIVE) | ENHANCEMENT/ MITIGATION MEASURES | RESPONSIBILITY |
|---|---|---|---|
| | Negative impacts<br>• Chemical fertilizer, pesticide & insecticide pollution<br>• Agriculture run-off<br>• Increased use of water<br>• Soil fertility depletion due to extensive farming<br>• Drainage congestion | Mitigation Measures<br>• Follow the screening procedure<br>• Implement the IPNMP<br>• Use of bio-compost, organic mulch/ Green Manure and vermin compost and Suitable organic / biotic control of insects and pests will result in lesser use of permissible chemical fertilizers and pesticides<br>• Selection of low water demanding crops and rain water harvesting, storage of surface water (of streams, nallah, etc.) through water storage ponds will help harvest more water for use in HYV cropping.<br>• High water consumption crops should be discouraged<br>• Selection of crops should be based on local water budget and traditional practices<br>• High nutritional value traditional crops should not be totally replaced by high yielding varieties.<br>• Leveling of crop field and maintenance of terraces/ bund to check water runoff and soil loss<br>• Genetically manipulated varieties should be avoided<br>• Integrated management of key pests<br>• Organic manure/fertilizer and bio-pesticide application to enhance yield<br>• When there are tribals in the Gram Panchayat follow the TDF | PMU, IDP through DPOs and APOs<br>Agriculture Department<br>Animal Husbandry Department<br>Consultants<br>Farmers/ Beneficiaries<br>UGs/ CAGs |
| HORTICULTURE<br>• Homestead horticulture | Positive Impacts<br>• Increased production base, biomass production & perennial cover<br>• Direct economic benefits<br>• Reduced soil erosion due to increased vegetative cover<br>• Retention of soil moisture due to vegetative cover | Enhancement Measures<br>• Higher use of bio-fertilizers (bio-Compost, vermin compost, microbial inoculants, etc.) and bio pesticides will reduce chances of soil contamination and water pollution.<br>• Live hedge fencing should be encouraged<br>• Use of farm yard manure or mulching practices should be encouraged<br>• Valuable plantation crops, medicinal crops and aromatic crops should be encouraged.<br>• Build awareness among farmers on medicinal crops, bio-fertilizers, bio-pesticides, etc. | PMU, IDP through DPOs and APOs<br>Agriculture Department<br>Animal Husbandry Department<br>Consultants<br>Farmers/ Beneficiaries<br>UGs/ CAGs |

| ACTIVITIES | IMPACTS (POSITIVE and NEGATIVE) | ENHANCEMENT/ MITIGATION MEASURES | RESPONSIBILITY |
|---|---|---|---|
| | Negative Impacts<br>• Fruit crops may compete with food producing crops<br>• Reduced crop/ horticulture diversity; Mono-cropping in horticulture may cause disease & pest problems and disappearance of species<br>• Competition for water, nutrient level may increase<br>• Increase in use of chemical fertilizers and pesticides | Mitigation Measures<br>• Follow the screening procedure<br>• Implement the IPNMP<br>• Lesser use of permissible chemical fertilizers/ pesticides reduce chances of soil contamination and water pollution<br>• Selection of crops with high efficiency in water utilization and high yield will reduce pressure on water use.<br>• Through water storage ponds supplement water needs of HYV crops<br>• Development of dry land orchards with suitable local fruit crops<br>• Benefits should be maximized by using crop cultivation, between fruit trees for 2-3 years<br>• Monoculture should be avoided by using other species along with the main species<br>• Awareness generation among farmers on the ill effects of using the pesticides, fertilizers, etc.<br>• Skill training for farmers in proper use of pesticides, fertilizers, etc.<br>• Awareness generation for farmers on using bio/ organic pesticides/ fertilizers.<br>• Skill training to farmers in preparation and use of bio/organic pesticides/fertilizers.<br>• When there are tribals in the Gram Panchayat follow the TDF | PMU, IDP through DPOs and APOs<br>Agriculture Department<br>Animal Husbandry Department<br>Consultants<br>Farmers/ Beneficiaries<br>UGs/ CAGs |

| ACTIVITIES | IMPACTS (POSITIVE and NEGATIVE) | ENHANCEMENT/ MITIGATION MEASURES | RESPONSIBILITY |
|---|---|---|---|
| ANIMAL HUSBANDRY<br>• Livestock Management<br>o Animal health care<br>o Mangers/ Stall feeding construction/ rehabilitation<br>o Stall feeding of animals<br>o Chaff cutters for fodder<br>o Livestock pest management | Positive Impacts<br>• Decrease in biotic pressure<br>• Improved livestock/ milk production<br>• Reduced exploitation of forest areas<br>• Greater management of fodder resources<br>• Healthy Livestock<br>• Improved sanitation | Enhancement Measures<br>• Farmers training and awareness programs to check the quality of the urea-molasses brick and poisoning.<br>• Veterinary camps may be sponsored.<br>• Services should be provided by professionals.<br>• Use of farm yard manure should be encouraged<br>• Shelter for animals owned by transhumant.<br>• Training should be imparted for upgradation of animals, livestock husbandry, health of animals and nutritional standards<br>• Livestock productivity should be monitored regularly<br>• Fodder wastage should be minimized by the use of chaff cutters which will enhance the fodder bio-availability and constructing feeding stalls/ mangers<br>• No spillage of medicated water used for dipping livestock downstream<br>• Proper disposal of packaging material as burring deep in soil away from the water resources | PMU, IDP through DPOs and APOs<br>Agriculture Department<br>Animal Husbandry Department<br>Consultants<br>Farmers/ Beneficiaries<br>UGs/ CAGs |

| ACTIVITIES | IMPACTS (POSITIVE and NEGATIVE) | ENHANCEMENT/ MITIGATION MEASURES | RESPONSIBILITY |
|---|---|---|---|
| | Negative Impacts<br>• Introduction of exotic/ alien species of grasses and fodder crops to meet the demand of fodder that dominate the local species.<br>• Hybrid animals are more prone to diseases and require intensive care and more provisions for health care.<br>• Limited breeding facility in case of Exotic animals.<br>• Loose/ moisturized feeding of urea-molasses brick may lead to poisoning.<br>• Increased returns from animal husbandry may trigger increase in livestock population result in stress on fodder resources.<br>• Better breed of livestock require better and more expensive fodder and management practice<br>• Lack of nutritious forage may decline the productivity of improved cattle<br>• Stress on pre and post natal care<br>• Post project maintenance of animal health program might be a problem<br>• Bacterial and parasitic diseases; Increase in tick, lice, etc.<br>• Need for preservation of vaccines in cryogenic conditions | Mitigation Measures<br>• Follow the screening procedures<br>• Review the existing breeding techniques and identify the successful breeds best suited for improvement. The populations of inferior breeds should be controlled/ eradicated.<br>• Timely assistance from the Animal Husbandry Department (AHD) for health care provisions.<br>• Increase stall feeding and reduce grazing on forest covers<br>• Control feeding of urea-molasses bricks will not result in poisoning.<br>• Proper packing and storage of treated fodder will not result in poisoning.<br>• Limited area should be brought under exotic species of grass plantation.<br>• Animal health practices like storage of vaccines & drugs, insemination centre sets, etc. through veterinary departments shall be adopted<br>• When there are tribal's in the Gram Panchayat follow the TDF | PMU, IDP through DPOs and APOs<br>Agriculture Department<br>Animal Husbandry Department<br>Consultants<br>Farmers/ Beneficiaries<br>UGs/ CAGs |

| ACTIVITIES | IMPACTS (POSITIVE and NEGATIVE) | ENHANCEMENT/ MITIGATION MEASURES | RESPONSIBILITY |
|---|---|---|---|
| HARVESTING& STORAGE OF AGRICULTURE/ HORTICULTUREPRODUCE(CROPS, FRUITS, VEGETABLES,HERBS, MEDICINAL PLANTS,FLOWERS,ETC.)<br>• Harvesting activities<br>• Development of Storage facilities | Positive Impacts<br>• Increased production base, biomass production & perennial cover<br>• Direct economic benefits<br>• Reduced soil erosion due to increased vegetative cover<br>• Retention of soil moisture due to vegetative cover | Enhancement Measures<br>• Higher use of bio-fertilizers (bio-Compost, vermin compost, microbial inoculants, etc.) and bio pesticides will reduce chances of soil contamination and water pollution.<br>• Live hedge fencing should be encouraged<br>• Use of farm yard manure or mulching practices should be encouraged<br>• Valuable plantation crops, medicinal crops and aromatic crops should be encouraged.<br>• Build awareness among farmers on medicinal crops, bio-fertilizers, bio-pesticides, etc. | PMU, IDP through DPOs and APOs<br>Agriculture Department<br>Animal Husbandry Department<br>Consultants<br>Farmers/ Beneficiaries<br>UGs/ CAGs |
| | Negative Impacts<br>• Agriculture/ Horticulture wastes<br>• Pressure on land for storage facilities<br>• Wastage of agriculture/ horticulture produce<br>• Use of pesticide on stored material<br>• Disposal of agriculture/ horticulture plant wastes after harvesting, especially with vegetable and aromatic (for perfume) plants<br>• Loss of cultivable land for construction of storage facilities<br>• Damaged agriculture/ horticulture product due to pests attack etc. will lead to large amount of solid organic wastes, disposal of which will be an issue<br>• Greater use of pesticides to protect the stored agriculture/ horticulture produce may lead to product contamination<br>• Cold Storages from its normal operation may generate rotten crops, fruits and vegetables and other material, which will be required to be disposed. | • Follow the screening procedures<br>• Follow the IPNMP<br>• Crops, fruits, vegetables, flowers and other agriculture/ horticulture plant wastes residue shall not be dried and burnt in the field. These wastes may be mixed with fodder and given to animals as fodder.<br>• Crops, fruits and vegetables residue shall be collected and decomposed in pits for bio-manure development<br>• Storage facilities shall be built on waste/non-cultivable land to avoid any acquisition of agriculture land<br>• No over use of pesticides on stored material.<br>• Bio-pesticides or low harmful chemical base pesticides shall be promoted if possible<br>• Cold storage and other storage facilities shall be developed as per standard criteria for vegetables and other horticulture produce respectively to minimize damage.<br>• When there are tribals in the Gram Panchayat follow the TDF | PMU, IDP through DPOs and APOs<br>Agriculture Department<br>Animal Husbandry Department<br>Consultants<br>Farmers/ Beneficiaries<br>UGs/ CAGs |

| ACTIVITIES | IMPACTS (POSITIVE and NEGATIVE) | ENHANCEMENT/ MITIGATION MEASURES | RESPONSIBILITY |
|---|---|---|---|
| CONSTRUCTION/ INFRASTRUCTURE/ OTHER<br>• Water harvesting and water conveyance structures<br>• Foot Bridges, Ropeways<br>• Processing/ Storage Facilities | Positive Impacts<br>• Improved accessibility to markets<br>• Improved quality of life<br>• Greater employment generation | Enhancement Measures<br>• Keep the infrastructure in good condition<br>• Use innovative public private people partnerships to build and maintain infrastructure | PMU, IDP through DPOs and APOs<br>Agriculture Department<br>Animal Husbandry Department<br>Consultants<br>Farmers/ Beneficiaries<br>UGs/ CAGs |

| ACTIVITIES | IMPACTS (POSITIVE and NEGATIVE) | ENHANCEMENT/ MITIGATION MEASURES | RESPONSIBILITY |
|---|---|---|---|
| | Negative Impacts<br>• Removal of vegetation during construction activities<br>• Soil loss during the construction of structures and quarrying for stone and other materials<br>• Siltation of water bodies downstream during construction<br>• Low quality construction may lead to failure and more hazards in downstream<br>• Destabilization of the land and soil erosion/landslips along the Foot bridges/ Ropeways<br>• Maintenance of the structures will require additional responsibilities to the stakeholders.<br>• Destruction of local flora during construction.<br>• Possibility of natural drainage pattern being disrupted<br><br>During the implementation phase of the project, there is a likelihood that the construction activities cause temporary negative environmental impacts, which would need to be addressed. Some of the likely issues are the following:<br>• During the construction of project components significant earth work may be involved, which may cause erosion of land and cutting of trees.<br>• Possible damage to places of cultural, heritage and recreational importance.<br>• Impact on human health and safety due to dust and noise pollution, and inadequate safety measures. | Mitigation Measures<br>• Use of land not suitable for other productive purposes may be brought under infrastructure activities.<br>• The safety provisions related to construction (Building) activities to be followed.<br>• Proper upkeep and maintenance of facilities built.<br>• Quality of constructions should be ensured to reduce the failure and more hazards in downstream.<br>• Proper designing and planning for road construction/laying will stabilize the land and reduce soil erosion/landslips.<br>• Bio-physical measures to rehabilitate disturbed land to check soil erosion.<br>• All project interventions will be appropriately designed to ensure that they do not impact the forest lands or wet lands. All the physical works should be on public/ Panchayat lands.<br>• Suitable changes in location/ alignment shall be made in the schemes to avoid cutting of trees and also avoid erosion and ensure soil stabilization. In the absence of an alternate location, permission from the forest department shall be obtained for felling of trees and the department's guidelines on compensatory afforestation will be followed.<br>• The Contractor will implement the Labour Management Procedures.<br>• The Contractor will institute a GRM for labour<br>• The PMU will a) conduct sensitization and awareness campaigns for contract workers, community workers and beneficiary communities on safety, harassment, GBV-related issues, legal recourse procedures and mitigation channels; b) Train the project staff to on GBV risk mitigation; c) strengthen the GRM mechanism by establishing multiple channels to initiate a complaint including confidential reporting in local language with safe and ethical documenting of GBV cases; d) include GBV specific commitments in the bidding documents.<br>• The Contractor will implement the EHS Guidelines<br>• Contractor to prevent general work site related hazards due to dust, sound and debris.<br>• The Contractor will implement the CHS Guidelines | PMU, IDP through DPOs and APOs<br>Agriculture Department<br>Animal Husbandry Department<br>Consultants<br>Farmers/ Beneficiaries<br>UGs/ CAGs |

| ACTIVITIES | IMPACTS (POSITIVE and NEGATIVE) | ENHANCEMENT/ MITIGATION MEASURES | RESPONSIBILITY |
|---|---|---|---|
| | | **Chance Find Procedures**<br>In case of some physical works associated with construction and maintenance there might be chance finds of objects of cultural/ archaeological importance. In such cases, the regional offices of the relevant agency (e.g. the Archaeological Survey of India) will be immediately notified.<br>• As a precautionary measures avoid such sensitive sites where there are cultural heritage related issues<br>• Secure the site to prevent any damage or loss of removable objects. In cases of removable antiquities or sensitive remains, a night guard shall be arranged until the responsible local authorities take over.<br>• Notify the Village Gramsabha who in turn will notify responsible local or national authorities in charge of the Cultural Property of the State<br>• Relevant local or national authorities would be in charge of protecting and preserving the site before deciding on subsequent appropriate procedures. This would require a preliminary evaluation of the findings to be performed. The significance and importance of the findings should be assessed according to the various criteria relevant to cultural heritage; those include the aesthetic, historic, scientific or research, social and economic values<br>• Decisions on how to handle the finding shall be taken by the responsible authorities. This could include changes in the layout (such as when finding an irremovable remain of cultural or archeological importance) conservation, preservation, restoration and salvage.<br>• If the cultural sites and/or relics are of high value and site preservation is recommended by the professionals and required by the cultural relics authority, the community will need to make necessary design changes to accommodate the request and preserve the site.<br>• Decisions concerning the management of the finding shall be communicated in writing by relevant authorities.<br>Construction works could resume only after permission is granted from the responsible local authorities concerning safeguard of the heritage. | |

**Summary of key ESMF Actions - by various ESS Plans and Frameworks during the project Cycle** **Annex 7**

| Phase | ESMF Activity | Objectives | Process | Responsibility | Result |
|---|---|---|---|---|---|
| Preplanning for GPRMP | **Identification of interventions Filling screening formats Conducting socio-economic survey** | To collect basic information on environmental and social aspects of the GPRMP. | The ESMF requires that basic environmental and social data pertaining to the proposed GPRMP be compiled at the field data collection stage. For this purpose, a simple Environmental and Social Screening Format and a simple Socio-Economic Survey (SES) Format were formulated for GPRMPs. The Screening Format and SES Format are furnished as annexure4. The Implementing Agencies and UGs/ CAGs/ Federations fill up these with the facilitation support of the APO Staff duly identifying the environmental and issues of concern. Supplementary notes on environmental and social concerns to be added to these formats. | Implementing Agencies and UGs/ CAGs/ Federations | Screening Formats and SES Formats filled in and attached with the GPRMP |
| Planning for GPRMP | **Preparation** Environmental and Social Management Plans for GPRMP | To consult the ESMP and compile the relevant Management Measures for integration into GPRMP. | For all GPRMPs the relevant provisions in the ESMP will attached as specific ESMP. | Implementing Agencies and UGs/ CAGs/ Federations | ESMP is customized |
| Planning for GPRMP | **Appraisal** Environmental and Social appraisal of the GPRMP | To ensure that relevant environmental and social issues have been identified and appropriate mitigation measures have been incorporated into | There shall be no separate environmental/ Social appraisal but environmental/ social aspects shall be included in the normal appraisal and evaluation process for the proposed GPRMP, based on the screening and socio-economic survey included in the GPRMP. All these GPRMPs need to follow the mitigation measures detailed in the ESMF and the ESMP. | Environmental Expert and Social Expert of DPO | Environmental and social appraisal of the project is made and approval of proposed GPRMP, with decision to (i) accept GPRMP as submitted, or (ii) accept GPRMP with |

| Phase | ESMF Activity | Objectives | Process | Responsibility | Result |
|---|---|---|---|---|---|
| | | the GPRMP | | | modification suggested in the environmental/ social appraisal. |
| Procurement for GPRMP | **Bidding and Contract Documents** Incorporation of Environmental and Social mitigation measures given in GPRMP in the Bidding Documents | To ensure that the environmental and social mitigation measures as given in GPRMP to be implemented by contractor that are in the contract documents. | The prescribed environmental and social mitigation measures as given in GPRMP (construction stage measures and all those to be implemented by contractor) as identified will be included in the contract documents. | Implementing Agencies and UGs/ CAGs/ Federations | Contract documents include environmental and social mitigation measures to be implemented by contractor/ UGs/ CAGs. |
| Implementation of GPRMP | **Implementation** Environmental and social mitigation measures implementation prescribed in GPRMP | To ensure that the prescribed environmental and social mitigation measures given in GPRMP (including construction stage) are implemented. | The prescribed environmental and social mitigation measures as adopted from ESMP and prescribed in GPRMP (including construction stage measures) as identified through the environmental and social appraisal process are adequately implemented by the contractor/ UGs/ CAGs and other responsible agencies. | Implementing Agencies and UGs/ CAGs | Environmental and Social mitigation measures are implemented as per ESMP. ESMF is complied with. |
| Implementation of GPRMP | **Supervision, Monitoring and Evaluation** Environmental supervision, monitoring and evaluation IEC and capacity building on environmental and social issues. | To ensure that environmental and social mitigation measures are implemented as intended. | Monitoring of indictors as given in ESMF will be conducted as per project monitoring protocol given in ESMF. Supervision will be conducted by the designated environmental and social experts of the PMU for all the GPRMPs with the active participation of UGs/ CAGs. All GPRMPs will be monitored. Capacity building and IEC activities are undertaken to enable effective implementation of the ESMF including assessment procedures, supervision, monitoring, etc. as well as for UGs/ CAGs and community awareness and sensitization. | Implementing Agencies and UGs/ CAGs | The Implementing Agencies/ UGs/ CAGs will submit quarterly monitoring reports and periodic environmental and social supervision reports and Training and IEC activity reports to Bank through PMU. |

| Phase | ESMF Activity | Objectives | Process | Responsibility | Result |
|---|---|---|---|---|---|
| Implementation of GPRMP | **Implementation Completion** Preparation of Implementation Completion Report for environmental and social mitigation measures under the GPRMP | To ensure that the implementation of environmental and social mitigation measures and management is completed as per GPRMP and ESMP. | Implementation Completion Report (ICR) for GRPMP will need to include an Environmental Compliance Certificate and Social Compliance Certificate given by the UGs/ CAGs indicating that the mitigation measures identified in the appraisal and incorporated in the GPRMP and ESMP (including construction stage) have been implemented. | Implementing Agencies and UGs/ CAGs | ICR with environmental and social compliance information. |
| Operation and Maintenance of GPRMP | **Operation and Maintenance** Environmental and Social mitigation andmanagement measures | To ensure that environmental and social aspects are integrated in the O&M phase. | The Implementing Agencies/ UGs/ CAGs and the PMU takes up all the environmental and social mitigation and management measures as given in the ESMF | Implementing Agencies and UGs/ CAGs | O&M phase environmental and social mitigation and management measures implemented. |