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# DETAILED PROJECT REPORT (DPR) FOR REJUVENATION OF SUTLEJ RIVER THROUGH FORESTRY INTERVENTIONS

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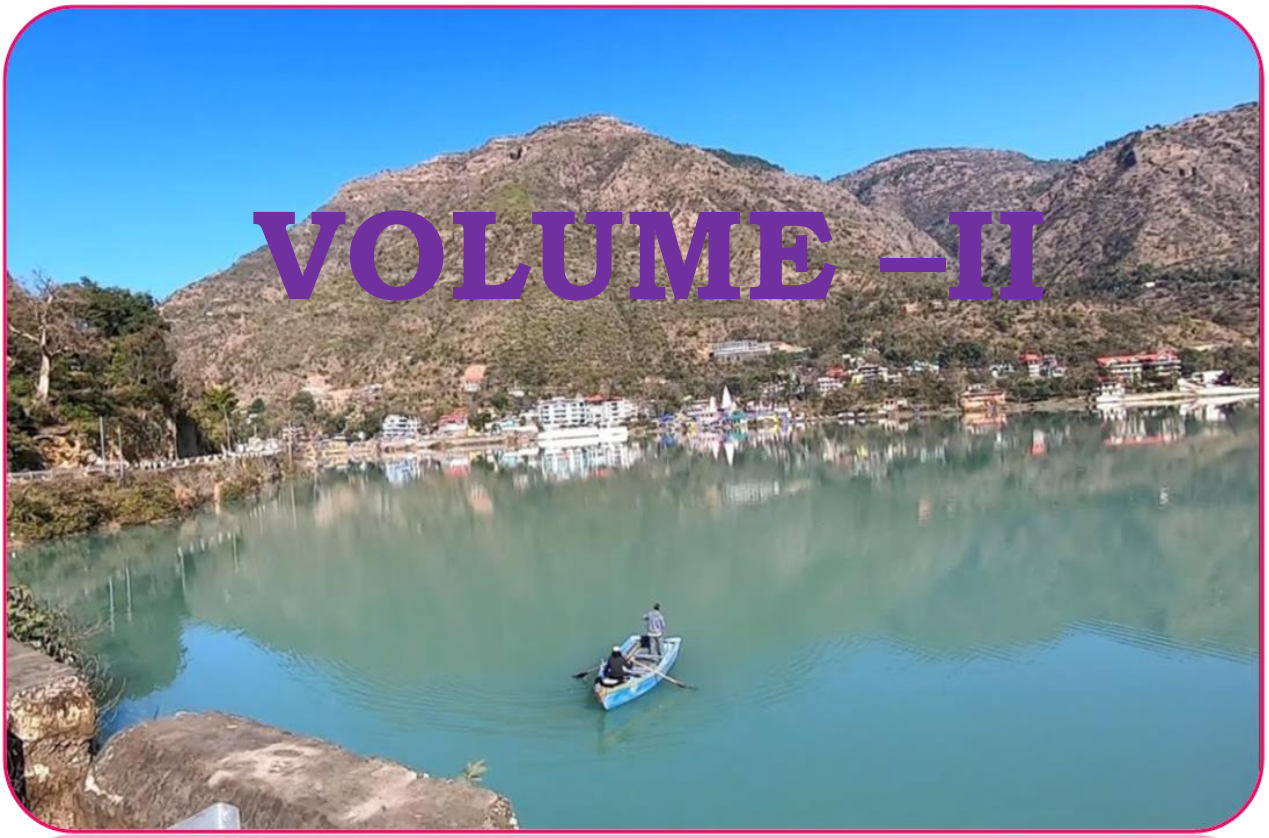
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## 1.1 Introduction

Himachal Pradesh is situated in the north-western part of India. It is surrounded by Jammu and Kashmir Union Territory (J&K, UT) in the north, Punjab and Haryana in the west, Uttarkhand in the south-east and Tibet (China) in the east. It is the eighteenth largest State of India, in respect of area and twenty first largest in population. It is one of the Himalayan states of India and has many prominent and well-known hill stations like Shimla, Kullu, Manali, Mandi, Chamba, Dalhousie, and Dharamshala. It consists of varied and attractive valleys, lakes, mountain ranges, ethnic groups and tribal people, and has been considered to be the paradise for the trackers, climbers and campers. The State is often referred as the 'Devbhoomi' (The Land of Gods) due to the numerous temples and pilgrimage centers located mostly along the rivers. Shimla is the capital of this State which was once the summer capital of India during the British regime. The State is divided into 12 districts for administrative purpose. The drainage systems of the State are the Chenab, Ravi, Beas, Sutlej and Yamuna Rivers. These rivers are perennial and are fed by glacier/snow, springs and rainfall.

## 1.2 State Profile

### 1.2.1 Geographical Extent

The State covers a geographical area of 55,673 $km^2$ which is about 1.69% of India's total area and extends between 30°22'40"-33°12'20"N Latitudes and 75°45'55"-79°04'20"E Longitudes. Physiographically, the State can be divided into four zones *viz*., Outer Himalaya or the Shivaliks, Lesser Himalaya or Mid Himalaya, Greater Himalaya and Trans-Himalaya. Himachal Pradesh is largely made up of hills and mountains ranging between 350-6,975 m amsl (FSI, 2011). There is a gradual rise in the average elevation from south to north. Along the boundary of the State with the Indo-gangetic plains (i.e., Punjab and Haryana), there occur low rolling hills with razor sharp ridges. Towards north there are higher mountain ranges and deep valleys.

The physiography of State is a complex assortment of snow-covered hills, valleys, and peaks. The snowcapped mountains in the northern mounatined range of India are prominent features of the State (Sharda, 2020). These are the Dhauladhar, the Pir-Panjal and the Great Himalayan Ranges, that's visible from afar. Mountain slopes are covered with large forests consistes coniferous and broad-leaved forests, pastures, meadows and plains that often stick out explicitly on the sides of the mountains. The valleys that lie between the mountains contain raging torrents, terraced fields, and fairy tales villages.

### 1.2.2 Geology, Topography and Soil

**Geology**

Himachal Pradesh is covered by the rocks ranging in age from Precambrian to Recent (GSI, 2012). The normal order of super-position of the rocks in the Lesser Himalaya has been affected by later events of thrusting owing to its complex tectonism and geological evolution. Geologically, rocks ranging from Proterozoic to Quaternary are exposed and represent classic geological sequence. Undifferentiated Proterozoic rocks are mostly confined to the Lesser Himalaya, and represented by Jutogh and Vaikrita Groups. Palaeo-Proterozoic represented by Jeori-Wangtu Banded Gneissic Complex and Kullu, Naraul, Sundernagar and Rampur Groups. Meso-Proterozoic in the Himachal Himalaya is represented by Larji and Shali Groups. The Larji Group consists of Lower Hurla Formation and Upper Aut Formation. The upper part of Meso-Proterozoic is represented by Darla-Tattapani (Peontra volcanics) represented by quartzite, slate and basic flows. The Neo-Proterozoic era has been divided into two as Lower and Upper. The Lower Neo-Proterozoic Era is represented by Jaunsar, Shimla and Haimanta Groups whereas the Upper Neo-Proterozoic Era is represented by Guma, Blaini, Infrakrol, Krol, Manjir and Katarigali Formations. In the Spiti /Kinnaur and higher Himalaya, the Cambrian rocks represented by Kunzamla and Parahio Formations. The Permian in Himachal Pradesh is represented by Kuling Group in the Spiti / Kinnaur area whereas in Chamba area, it is represented by Salooni formation. The Kuling Group is divisible into fossiliferous Gechang and Gungri Formations. These Groups consist of brown to grey, pale grey, coarse grained weakly bioturbated, cross bedded, calcareous sandstone with local conglomerate, black shale, calcareous silty shale, phosphatic, cherty and calcareous nodules and thin limestone. The Salooni Formation is represented by black shale, slate, calcareous slate and lenticles of limestone and is fossiliferous (GSI, 2012).

**Topography**

The topography is predominantly mountainous with exception the areas bordering Punjab and Haryana plains, which have lower elevations. The altitude of the State varies from 350 - 6,975 m amsl. Himachal Pradesh lies at North-west part of the Himalayan Range. The climate and vegetation vary greatly with elevation, from glaciers at the highest elevations to sub-tropical forests at the lowest elevations. Of the total geographical area, about one third area of Himachal Pradesh is under permanent snow cover/ glaciers, where it is not possible to grow trees due to physical limitations (FSI, 2019).

The lower hills comprising the Kangra, Hamirpur, Una and Bilaspur districts and lower parts of Mandi, Solan and Sirmour districts are known as Shivalik Hills. These are composed of highly unconsolidated deposits which easily lend themselves to erosion. They maintain almost a regular course from Ravi to Yamuna Rivers in the south of the region. Shivaliks have been highly deforested and eroded with the vegetation consists of tropical and sub-tropical forest. The altitude ranges from 350 - 1,500 m amsl. This area is suitable for the cultivation of maize, wheat, ginger, sugarcane, paddy, table potatoes, guava, papaya, mango, lemon, etc. The Lesser Himalaya or Middle Himalayan zone falls in upper areas or the tehsils of Peachhad and Renuka in Sirmour district, Chichot and Karsog tehsils of Mandi district;

upper parts of Kangra and Palampur tehsils of Kangra district; upper Shimla Hills, and upper parts of Churah tehsil of Chamba district. The altitude of this zone varies from 1,500 - 3,500 m amsl. The major vegetation includes mixed deciduous forests, evergreen coniferous forests and mixed coniferous forests. This zone is useful for seed potatoes, temperate fruits, stone fruits and soft fruits.

The Greater Himalaya or Alpine zone comprises Kinnaur district, Pangi tehsil of Chamba district and some areas of Lahaul-Spiti. The altitude ranges from 3,500 m and above mean sea level. The western Himalayan sub- alpine conifer forests, western Himalayan alpine scrubs and alpine pastures from the main vegetation. The climate and soil are best suited for the cultivation of dry fruits. The Trans-Himalaya includes the Himalayan ranges immediately north of the Great Himalayan Range. The Zanskar, the Ladakh, the Kailas and the Karakoram are the main Ranges. It stretches for a distance of about 1,000 km in east-west direction and average elevation is 3,000 m amsl.

**Soil**

The soils of Himachal Pradesh vary according to aspect, slope, altitude and climatic conditions. They may be classified in to three major groups as brown hill soils, podsolic or sub-montane soils and glacial and eternal snow types of soils. The major soil groups of the State can be further divided in to nine types. These are alluvial soils, brown hill soil, brown earth soils, brown forest soils, grey wooded or podzolic soils, grey brown podzolic soils, planosolic soils, humus and iron podzols, and alpine humus mountain skeletal soils. The brown hill soils are found in the Shivalik and Lesser Himalayan regions and cover 42.16 % of the State's area. The middle and Greater Himalayan zones are characterized by podsolic or sub-montane type of soils covering nearly 46.07 % of Himachal Pradesh (Devi, 2012). The glacial and eternal snow types of soils cover an area of 11.77 %. These soils are not fully developed as they are found in the snow-covered areas. The soils of the State are mostly shallow, but deep only in the valleys. The most of the soils are acidic in nature and are under great stress and strain due to sheet and gully erosion. Large-scale deforestation and unscientific cultivation on the slopes have been mainly responsible for the large-scale soil erosion. The total cultivated land of Himachal Pradesh is estimated to be 7.59 lakh ha, out of which nearly 43% is prone to very high and high intensity of erosion.

### 1.2.3 Climate

There is a great diversification in the climatic conditions of Himachal Pradesh due to variation in elevation and aspect. The State is a hilly region and it experiences a pleasant climate throughout the year. The climatic conditions vary from hot and sub-humid tropical (450-900 m amsl) in the southern low tracts, warm and temperate (900 – 1,800 m amsl), cool and temperate (1,900– 2,400 m amsl), and cold alpine and glacial (2,400 – 4,800 m amsl) in high mountain ranges. The climate in Lahaul-Spiti and Kinnaur is of the arid to semi-arid type. The year is divided into three seasons i.e., winter (October to February), summer (March to June) and rainy (July to September). Snowfall usually occurs in the higher areas in December and January, though uncommon falls may be experienced earlier or later. At

elevations of about 3,000 m amsl, the average snowfall is about 3 m and lasts from December to March whereas; above 4,500 m elevation snow is perpetual.

The State normally has well defined rainy season. The monsoon sets in towards the end of June or early July. July and August are the rainiest months and considerable damage is caused by erosion, floods and landslides. Rainfall tapers off by the end of September. After September, it declines and continues to be so until April. Beyond Kullu towards Lahaul-Spiti and Kinnaur, rainfall decreases due to rain shadow effect. Spiti is the driest area (below 50 mm rainfall), being enclosed by high mountains on all sides. The highest amount of rainfall of about 3,400 mm has been recorded in Dharamshala. The average annual rainfall is about 1,800 mm. The average temperature in the summer months vary from $22^0$ C to $37^0$ C. Throughout the State, temperature during winter months ranges from sub-zero to $15^0$C.

### 1.2.4 River System

**River System**

Rivers and glaciers are the two main consitutent of the water supply system of Himachal Pradesh. The current rivers are older than the mountain system. Himachal Pradesh supplies water to both the Indus and Ganga River Systems. The drainage systems of the state include mainly five major rivers of Himachal Pradesh *viz*. the Chandra Bhaga or Chenab, Ravi, Beas, Sutlej and Yamuna (Wikipedia, 2020). These perennial rivers fed by glacier/snow, springs and rainfall. Total estimated Hydro-power Potential in Himachal Pradesh is 27,436 MW and power potential harnessed till date is 10,443 MW (DoE, 2019).

**Sutlej River**

The Sutlej River rises from beyond Indian borders in the southern slopes of the Kailash Mountain near Mansarover Lake from Rakshastal Lake, as Longcchen Khabab River in Tibet. It is the largest among the five Rivers of Himachal Pradesh. It enters Himachal at Shipki La at an altitude of 3,930 m amsl and flows in the south-westerly direction through Kinnaur, Shimla, Kullu, Mandi, Solan and Bilaspur districts. Its course in Himachal Pradesh is 320 km from Shipki La, with famous tributaries *viz*., Spiti, Ropa, Taiti, Kashang, Mulgaon, Yula, Wanger, Throng and Rupi as right bank tributaries whereas Tirung, Gayathing, Baspa, Duling and Soldang are left bank tributaries. It leaves Himachal Pradesh to enter the plains of Punjab at Bhakra, where the world's highest gravity dam was constructed on this River. Its total catchment area in Himachal Pradesh is 20,154 $km^2$. The Sutlej finally drains into the Indus River in Pakistan. The basin consists of 2,026 glaciers covering an area of 1,426 $km^2$ between 3,944 - 7,349 m amsl (Prasad *et al*., 2019). Its total length is 1,448 km. The upper tracts of the Sutlej Valley are under a permanent snow cover. The prominent human settlements that have come on the banks of the Sutlej River are Namgia, Pooh, Rekong Peo, Kalpa, Tapri, Jhakhri, Rampur, Suni, Tattapani and Bilaspur.

**Tributaries:** The important tributaries of the Sutlej River are given below:

**a.** **Spiti**: Kunzum Range is the originating point of the Spiti River and its tributaries are Tegpo and Kabzian streams (Shruti, 2014). Pin Valley water drainage is also one of the major sources of the water in the Spiti River. Its position on the other side of main the

Himalayan Range deprives it of the benefits of southwestern rainfall, which causes widespread rainfall in many parts of India from June to September. The river gets peak discharge in the summer due to the melting of the ice. After crossing the Spiti Valley, it finally drained into Sutlej River at Namgia in the Kinnaur region at a distance of about 150 km. The majestic mountains that rise to very high elevation along either side of Spiti River or its Tributeries are mostly barren and largely devoid of vegetation cover. The main settlements along the main course of Spiti River are Hansi and Dhankar Gompa.

**b.** **Baspa**: One of the important tributary in the upper course of Sutlej is Baspa River (Zknowledge, 2020). This tributary is joined by many smaller water channels during its course of flow from upper Baspa hills region and meets Sutlej River near the left bank at Karcham in district Kinnaur. Further, Sutlej leaves Kinnaur district in the west near Chauhra and enters Shimla district.

**c.** **Nogli**: It joins Sutlej River just south to the Rampur Bushahar at Nogli. It is known as a Sageti Gad at its origin place. The Nogli Khad come to exist where the Suket Khad and Devpani Khad meets. The Sharnal, Sari, Nogli are the major settlements on the bank of this Khad. The rock types of Nogli valley are quartzite. Between Bahli and Surad rock Gneiss with large white rhomboid, Crystals of feldspar. The geology, rock and soil affect the vegetation of a place by influencing the moisture regime, texture and drainage of the soil. The fish found in main Satluj River generally comes from the khads. That is the reason; the fish catching is mainly practiced at confluence of Nogli and Sutlej.

**d.** **Soan**: Soan River originates from the southern slopes of the Solasinghi Range in Shivalik Hills. It flows from the east of the Beas across the southern periphery of the Kangra Valley and joins the boundary of Himachal Pradesh and Punjab (Zknowledge, 2020). Soan catchment area varies from gentle to steep slopes. During summer, the discharge drops significantly, while during monsoon season it causes flood in its adjoining catchment areas.

The physico-chemical parameter of water of Sutlej River is given in Table 1.1.

**Table 1. 1 Physico-Chemical Attributes of Sutlej River Waters at Different Sites During 2016**

| Sr.No. | Parameter | Khab | Wangtoo | Rampur | Kol Dam | Wajipur Kalan |
|---|---|---|---|---|---|---|
| 1 | Water Turbidity (NTU) | 290 | 5 | 174 | 6 | 80 |
| 2 | Total Alkalinity (mg/l) | 196 | 191 | 156 | 126 | 178 |
| 3 | pH | 7.79 | 6.36 | 6.56 | 6.12 | 6.92 |
| 4 | Conductivity (mho/cm) | 607 | 368 | 327 | 227 | 903 |

| | | | | | | |
|---|---|---|---|---|---|---|
| 5 | Magnesium Hardness (mg/l) | 28 | 34 | 32 | 3 | 21 |
| 6 | BOD (mg/l) | 9 | 8 | 8 | 18 | 1.9 |
| 7 | COD (mg/l) | 80 | 35 | 84 | 38 | 230 |
| 8 | Dissolved Carbon | 7 | 6 | 6 | 1.2 | 27 |
| 9 | Total Hardness | 280 | 240 | 280 | 120 | 245 |
| 10 | Chloride (mg/l) | 9.6 | 19 | 9.6 | 21 | 126 |
| 11 | Phosphate (mg/l) | 0.01 | 0.01 | 0.01 | 0.02 | 2.16 |
| 12 | Nitrate (mg/l) | 0.102 | 2.73 | 0.1 | 0.85 | 17 |
| 13 | Calcium Hardness | 72 | 18 | 42 | 36 | 62 |

(Source: Sharma and Walia, 2017)

### 1.2.5 Hydrology

Himachal region presents an intricate mosaic of mountain ranges, hills and valleys with varied altitudinal ranges. Himachal Pradesh forms a key and central part of the Indian Himalayan Region (IHR). The IHR covers vast area, with about 17% of the region being under permanent snow cover and glaciers, and about 30% - 40% under seasonal snow cover, forming a unique water reservoir. This feeds important perennial rivers that provide water for drinking, irrigation, and hydropower. The total irrigation potential of Himachal Pradesh is 0.33 million ha (HIMCOSTE, 2013).

### 1.2.6 Water Resources Issues

Himachal Pradesh representing the Himalayan Mountain ecosystems harbours a wide range of natural resources and is particularly sensitive to change. Himalayan ecosystems are highly vulnerable due to geological reasons, stress caused by increased pressure of population, exploitation of natural resources, and other related challenges. These effects are likely to be exacerbated due to the impact of climate change, which may adversely impact the Himalayan ecosystems through increased temperature, increased frequency of heavy precipitation, increase in extreme rainfall intensity, increased variability in rainfall patterns, increased likelihood of water shortages/drought, reduced levels of precipitation as snow, loss of glacier volumes, and earlier snow melt. This would not only impact the very sustenance of the indigenous communities in uplands, but also the life of downstream dwellers across the country and beyond. There is an urgent need for giving special attention to sustain the Himalayan ecosystems for maintaining ecological flow of water. The sewage discharge in water bodies is also a source of concern.

### 1.2.7 Forests and Vegetation

The State has a geographical area of 55,673 $km^2$, out of which, 16,263 $km^2$ (29.21%) is under forests and tree cover. Out of the total forested area, 3,113 $km^2$ area is under very dense forest cover; 7,126 $km^2$ under moderately dense forest cover; while 5,195 $km^2$ falls under open forests (FSI, 2019) (Table 1.2). The State of Himachal Pradesh harboured an extent of 37,033

$km^2$ of Recorded Forest Area (RFA). Out of this, the Reserved Forests (RFs) just covered a small extent of 1,898 $km^2$ while the bulk RFA was under the category of Protected Forests (PFs) and rest area of 2,005 $km^2$ belonged to Unclassed Forest and 33,130 $km^2$ is categorized under the protected forest area (Table 1.3).

**Table 1. 2 Forest and Tree Cover of Himachal Pradesh**

| Very Dense Forests ($km^2$) | Moderately Dense Forests ($km^2$) | Open Forests ($km^2$) | Total Forest Cover ($km^2$) | Tree Cover ($km^2$) | Total Forests and Tree Cover ($km^2$) | Scrub ($km^2$) |
|---|---|---|---|---|---|---|
| 3,113 | 7,126 | 5,195 | 15,434 | 829 | 16,263 | 315 |

(Source: FSI, 2019)

**Table 1. 3 Recorded Forest Area in Himachal Pradesh**

| Reserved Forest ($km^2$) | Protected Forest ($km^2$) | Unclassed Forest ($km^2$) | Total ($km^2$) |
|---|---|---|---|
| 1,898 | 33,130 | 2,005 | 37,033 |

(Source: FSI, 2019)

### 1.2.8 Forest Types of Himachal Pradesh

The vegetation of the State is broadly grouped under following categories based largely on the altitude ranges and species composition (Table 1.4).

**Table 1. 4 Forest Types of Himachal Pradesh**

| Sr. No. | Group | Forest types | Altitude (m) | Dominant Species |
|---|---|---|---|---|
| 1. | Tropical Moist Deciduous Forests | Bhabar-Dun Sal Forests | < 650 m | *Shorea robusta, Lagerstroemia parviflora, Mallotus philippinensis, Cassia fistula* and *Senegalia catechu* |
| 2. | Tropical Dry Deciduous Forests | Northern Dry Mixed Deciduous Forests | < 750 m | *Anogeissus latifolia, Senegalia catechu* and *Diospyros montana* |
| | | Dry Deciduous Scrubs | < 750 m | *Senegalia catechu, Butea monosperma, Lannea coromandelica, Nyctanthes arbor-tristis, Dodonaea viscosa* and *Woodfordia fruticosa* |

| Sr. No. | Group | Forest types | Altitude (m) | Dominant Species |
|---|---|---|---|---|
| | | Euphorbia Scrubs | < 750 m | *Euphorbia* spp. and *Acacia* spp. |
| | | Khair-Sissu Forests | < 750 m | *Dalbergia sissoo* and *Senegalia catechu* |
| | | Dry Bamboo Brakes | < 750 m | *Dendrocalamus strictus* |
| 3. | Sub-tropical Pine Forests | Lower or Shiwalik Chir Pine Forests | 800 -1,700 m | *Pinus roxburghii* |
| | | Upper or Himalayan Chir Pine Forests | 1,200 -1,700 m | *Pinus roxburghii, Quercus oblongata* and *Rhododendron arboreum.* |
| | | Himalayan Sub-tropical Scrubs | > 1,000 m | *Carissa opaca, Dodonaea viscosa* and *Rhus parviflora* |
| 4. | Himalayan Moist Temperate Forests | Ban Oak Forests | 1,600-2,300 m | *Quercus oblongata, Rhododendron arboreum* and *Lyonia ovalifolia*. |
| | | Mohru Oak Forests | 1,200 -2,250 m | *Quercus floribunda, Quercus oblongata, Picea smithiana, Cedrus deodara* and *Rhododendron arboreum* |
| | | Oak Scrubs | 1,200 -2,200 m | *Berberis* spp., *Rosa* spp., *Pyracantha crenulata, Prinsepia utilis* and *Zanthoxylum armatum.* |
| | | Moist Deodar Forests | 1,700 -3,500 m | *Cedrus deodara, Pinus wallichiana, Picea smithiana, Abies pindrow* and *Quercus oblongata* |
| | | Western Mixed Coniferous Forests | 2,100 -3,000 m | *Picea smithiana, Abies pindrow, Pinus wallichiana, Cedrus deodara* and *Quercus* spp. |
| | | Moist Temperate Deciduous Forests | 1,800-2,750 m | *Acer caesium, A. pictum, Betula alnoides, Ulmus wallichiana* and *Abies pindrow* |
| | | Low-Level Blue Pine Forests | 1,800 -2,750 m | *Pinus wallichiana* |
| | | Oak Scrubs | 1,200 -2,750 m | *Rosa moschata, Pyracantha crenulata, Rhus parviflora, Rubus ellipticus, Quercus oblongata, Woodfordia floribunda, Desmodium elegans* and *Berberis* spp. |
| | | Himalayan Temperate | 1,200 -2,750 m | *Plectranthus rugosus, Berberis asiatica, Berberis lycium,* |

| Sr. No. | Group | Forest types | Altitude (m) | Dominant Species |
|---|---|---|---|---|
| | | Secondary Scrubs | | *Myrsine africana, Rosa moschata* and *Zanthoxylum armatum.* |
| | | Kharsu Oak Forests | 2,600 -3,500 m | *Quercus semecarpifolia, Picea smithiana, Pinus wallichiana, Prunus cornuta, Taxus wallichiana, Betula utilis* and *Acer caesium.* |
| | | West Himalayan Upper Oak/Fir Forests | 2,600-3,000 m | *Abies pindrow, Pinus wallichiana, Quercus semecarpifolia, Taxus wallichiana, Betula utilis, Corylus jacquemontii* and *Acer* spp. |
| | | Montane Bamboo Brakes | >2,400 m | *Drepanostachyum falcatum, Thamnocalamus spathiflorus, Viburnum grandiflorum, Rhododendron arboreum* and *Quercus* spp. |
| | | Cypress Forests | 1,800 -2,800 m | *Cupressus torulosa, Cedrus deodara, Quercus floribunda* and *Pyrus pashia* |
| | | Alder Forests | 1,000 -3,000 m | *Alnus nitida, Populus ciliata, Celtis australis* and *C. tetrandra*. |
| 5. | Himalayan Dry Temperate Forests | Dry Broadleaves and Coniferous Forests | 2,000 -2,400 m | *Pinus gerardiana, Cedrus deodara* and *Quercus ilex.* |
| | | Neoza Pine Forests | 1,700 -3,000 m | *Pinus gerardiana* and *Cedrus deodara.* |
| | | Dry Deodar Forests | 2,100 -3,250 m | *Cedrus deodara, Pinus wallichiana* and *Picea smithiana.* |
| | | West Himalayan Dry Temperate Deciduous Forests | 2,900 -3,600 m | *Acer caesium, A. pictum, Betula alnoides* and *Ulmus wallichiana.* |
| | | West Himalayan High- Level Dry Blue Pine Forests | 3,000 -3,600 m | *Pinus wallichiana, Pinus gerardiana* and *Abies pindrow*. |
| | | West Himalayan Dry Juniper Forests | 2,500 -4,300 m | *Juniperus polycarpos, Fraxinus xanthoxyloides* and *Rosa webbiana*. |
| | | Populus/ Salix Forests | 3,000 -4,000 m | *Populus alba* and *Salix* spp. |
| | | Western high- | 3,000 -3,600 m | *Pinus wallichiana, Pinus* |

| Sr. No. | Group | Forest types | Altitude (m) | Dominant Species |
|---|---|---|---|---|
| | | Level Dry Blue Pine Forest | | *gerardiana, Abies spectabilis, Betula utilis, Rhododendron campanulatum, Juniperus communis, J. indica* and *J. squamata.* |
| 6. | Sub - Alpine Forests | West Himalayan Sub-Alpine Fir Forests | 2,900 -3,050 m | *Abies pindrow, Pinus wallichiana* and *Picea smithiana* |
| | | West Himalayan Sub-Alpine Birch/Fir Forests | 2,900 -3,050 m | *Abies pindrow, Betula utilis, Rhododendron* spp. and *Quercus semecarpifolia* |
| 7. | Moist Alpine Scrubs | Birch/Rhododendron Scrub Forests | > 3,500 m | *Rhododendron* spp. |
| | | Deciduous Alpine Scrubs | > 3,350 m | *Betula utilis, Syringa emodi, Salix* spp., *Lonicera* spp. and *Berberis* spp. |
| | | Dwarf Rhododendron Scrubs | 3,350 -4,600 m | *Rhododendron* spp. |
| 8. | Dry Alpine Scrub | Dry Alpine Scrubs | 2,800 -4,300 m | *Hippophae* spp., *Juniperus indica* and *J. communis.* |
| | | Dwarf Juniper Scrubs | 2,900 -4,200 m | *Juniperus indica, J. squamata* and *J. communis.* |

(Source: FSI, 2019).

### 1.2.9 Agro-ecosystem

Agriculture is one of the most significant sectors of the economy of Himachal Pradesh. Important crops grown in the state are maize, wheat, rice, barley, pulses, oilseed, buckwheat, minor millets, potato, ginger, tea, peas, kuth, hops and a variety of vegetables. The fruits, particularly pome, stone and dry fruits like chilgoza, walnuts, and almonds are widely grown and the region are important for the large scale processing industry. Although the State is deficient in food grains production, it has gained importance in the production of vegetables and fruits such as seed potato, vegetables, ginger, chicory seed, hops, stone fruits, apples and mushrooms, besides certain MAPs. Land use pattern of Sutlej Riverscape in Himachal Pradesh State is given in Table1.5.

Agriculture being main occupation of the people of Himachal Pradesh has an important role in the economy of the state. It provides direct employment to about 62% of the main working population. Income from the agriculture and allied sectors accounts for nearly 9.40% of the state domestic products. Out of the total geographical area of 55,673 $km^2$, area of operational holding is about 9.560 $km^2$ owned by 9.61 lakh farmers (DoA, 2019). The average holding size is about 1.0 ha (Table 1.5).

**Table 1. 5 Distribution of Operational Land Holdings in Himachal Pradesh**

| Sr. No | Land Holding Class | No. of Land Holdings (lakh) | Area (lakh ha) | Av. size of Holding (ha /farmer) |
|---|---|---|---|---|
| **1** | Marginal (<1.0 ha) | 6.70 | 2.73 | 0.41 |
| **2** | Small (1.0- 2.0 ha) | 1.75 | 2.44 | 1.39 |
| **3** | Semi Medium (2.0-4.0 ha) | 0.85 | 2.31 | 2.72 |
| **4** | Medium (4-10 ha) | 0.28 | 1.57 | 5.61 |
| **5** | Large (≥10 ha) | 0.03 | 0.51 | 17.00 |
| **Total** | | **9.61** | **9.55** | **0.99** |

(Source: DoA, 2019)

Rearing of livestock is an integral to the rural economy of Himachal Pradesh. Cattle, goats and sheep are reared by mostly every family in the rural area. These animals graze in open areas -fallows, wastelands, pastures, community lands, forestlands etc. After crop harvest, these animals are also allowed into the agricultural fields for the grazing. The productivity of these animals is low. The collection of grass and leaf fodder is an essential part of daily chores for the people, especially women. Grazing animals pose the greatest challenge to forest regeneration and plantation establishment in the hills.

### 1.2.10 Biodiversity

Himachal Pradesh is bestowed with distinctive floral and faunal biodiversity having aesthetic, cultural, commercial and genetic values. The State has great diversity in the biological resources because of its varied topography, geological formations, altitudinal ranges, and climatic conditions. The biodiversity elements in the State varied from sub-tropical region to that of temperate, dry temperate and alpine region. 95% of the floral and faunal species available in the State are endemic and 5% of the other species existing are of exotic nature.

Out of the total 47,000 plant species found in the country as many as 3,256 species are reported from Himachal Pradesh. There are 3,120 species of Angiosperms, 13 species of Gymnosperms and 124 Pteridophytes and 13 species of Orchids. The fauna of Himachal Pradesh is very diverse and unique. Out of 89,451 species of animals in India, the State harbors 5,721 species of the Indian fauna which shows richness of biological resources of the State considering its small geographical area. The faunal diversity includes 666 Chordates (77 Mammals, 447 Birds, 44 Reptiles, 17 Amphibians and 81 Fishes), 4,543 Arthropods (2 Bryozoa, 4,362 Insects, 195 Arachnids, 11 Myriopods and 73 Crustaceans) and 412 others (60 Annelids, 73 Molluscs, 2 Acanthocephala, 132 Nematodes, 16 Rotifers, 90 Platyhelminthes, 2 Cnidaria, 3 Porifera and 34 Protozoans). The Western Tragopon, a rare and endangered species, is confined only to the Western Himalaya. Himachal Pradesh also has probably the largest population of Chir Pheasant in the world (HIMCOSTE, 2005).

There are 1 Biosphere Reserve (Samant *et al.*, 2012), 5 National Parks, 28 wildlife sanctuaries and 3 Conservation Reserves covering 8,391 $km^2$ or 15.11% of geographical area of Himachal

Pradesh. The Great Himalayan National Park was awarded UNESCO World Heritage Site status in 2014, in recognition of its outstanding significance for biodiversity conservation. The park protects over 1,000 plant species representing 128 families and 427 genera (Singh and Rawat, 2000), including many medicinal herbs, 31 mammal species and 209 bird species, as well as amphibians, reptiles and insects. Four of GHNP's mammal species and three of its bird species are globally threatened, including the musk deer and the Western Tragopan.

### 1.2.11 Demography

According to the 2011 Census of India, Himachal Pradesh has a population of 68,64,602 comprising 34,81,873 male and 33,82,729 females, with 10.03% of the population living in urban regions. There are 20,118 villages, 3,037 *Gram Panchayats*, 57 towns, 28 *Nagar Panchayats* and 21 *Nagar Parishads* including Municipal Corporations. Lahaul and Spiti is the largest and Hamirpur is the smallest district of the State with geographical area of 12,835 $km^2$ and 1,118 $km^2$, respectively. The rural and urban populations in the State is 61, 76,050 and 6, 00,552 persons, respectively. The density of population in the State varies from as low as 2 persons $km^2$ in Lahaul and Spiti district to 406 persons per $km^2$ in Hamirpur district as compared to the State average of 128 persons per $km^2$. Shimla is the largest town with a population of 1, 42,161 and Narkanda is the smallest one with a population of 712.

There are two thousand or more temples all over the State. The State has a number of tourist destinations and places of pilgrimage e.g., Manali, Kullu, Manikaran, Shimla, Dharamshala, Kasauli, Malana, Kasol, Dalhousie, Kaza, Tabo, Khajjiar, Kufri, Chail, Solang Valley, Chamba, Bajreshwari Mata, Mandir located in Kangra, Jwalamukhi Temple, Chamunda Devi Temple, Ma Chintpurni Devi Temple, Rewalsar, Shikari Devi, Bijli Mahadev Temple, Bhimakali Temple, Hatkoti, Jakhu, Naina Devi Temple, Sri Renuka ji, Baba Balak Nath Temple, Manimahesh, etc.

As per data compiled by the Tourism Department, as many as 19.6 million tourists, including 0.47 million foreigners visited the State during 2017-2018. These figures, which are nearly 2.8 times of the whole population of the state itself, reflect a high 'tourist load' on urban infrastructure and urban services. The major sources of pollution of the rivers are generally the discharges of untreated and partially treated wastewater from the human habitations.

## 1.3 Riverscape Analysis

### 1.3.1 Methodology

The selected Riverscape portion for the State of Himachal Pradesh includes areas of all micro-watersheds relevant to Sutlej River and the same also has been decided during the process of stakeholder consultation.

Image processing and GIS tools, *viz.*, ERDAS Imagine 2015, Geomedia Professional 2015, ArcGIS etc. were used for Riverscape analysis. Landsat TM, Landsat 8 and Landsat ETM datasets specific to the Riverscape were downloaded from www.earthexplorer.usgs.gov. The

time frame was selected keeping in view the pre and post-monsoon seasons, maximum differentiation in various lands cover features, and the historical dates of maximum flooded area.

### 1.3.2 Riverscape Profile

### (i) Spatial Extent

The influence zone for Himachal Pradesh lies between 30°49'55.733" - 32°46' 44.268"N Latitudes and 76°1'2.721" - 78°49'49.649"E Longitudes that occupies a geographical area of 55,673 km$^2$ (Table 1.6 and Fig 1.1). The Catchment, Sub-Catchment, Water Shed, Sub-watersheds and Micro-watersheds have been shown in Fig. 1.2-1.6 below:

**Table 1. 6 Spatial Extent of the Project area in Himachal Pradesh**

| State | Geographical Area (km$^2$) | Geogaphical Coordinates (From - To) | | Area in Riverscape (km$^2$) | Per Cent of Riverscape |
|---|---|---|---|---|---|
| | | Latitude | Longitude | | |
| **Himachal Pradesh** | 55,673 | 30° 49' 55.733" N to 32° 46' 44.268" N | 76° 1' 2.721" E to 78° 49' 49.649" E | 20,154.61 | 36.2 |

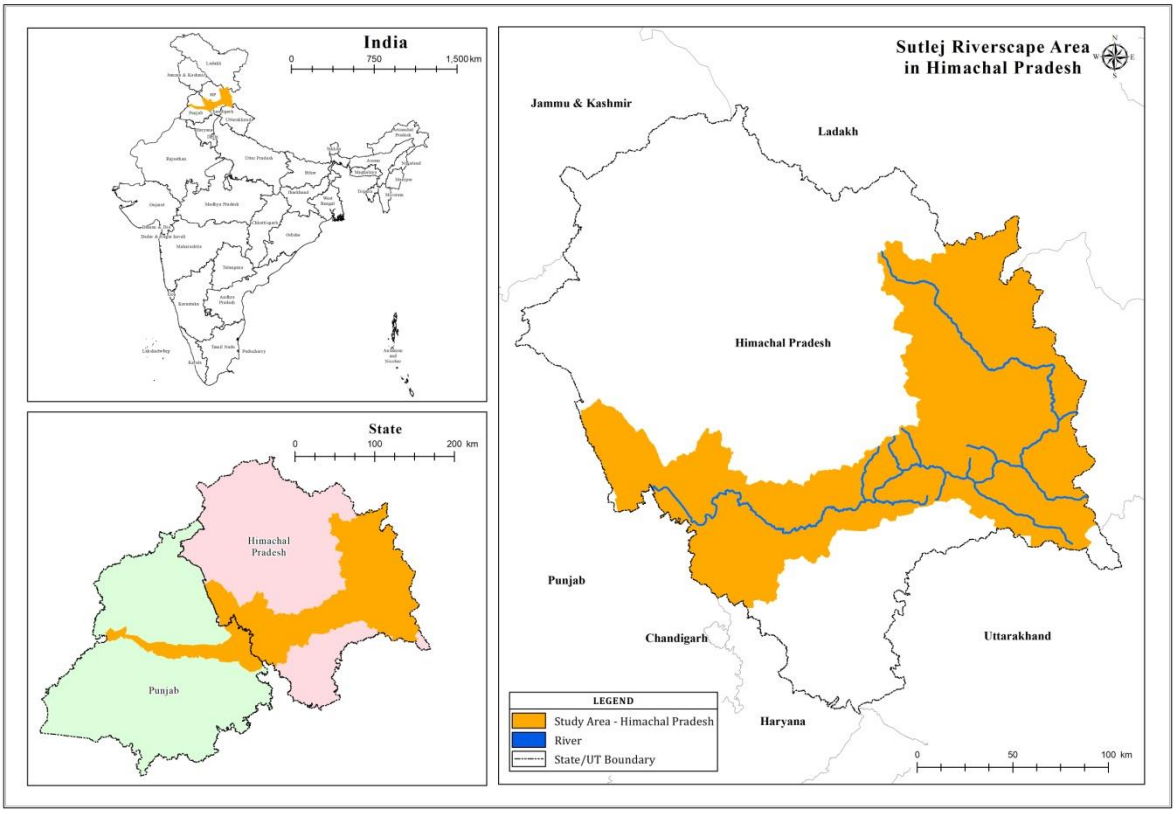



**Fig.1. 1 Sutlej Riverscape Area in Himachal Pradesh**

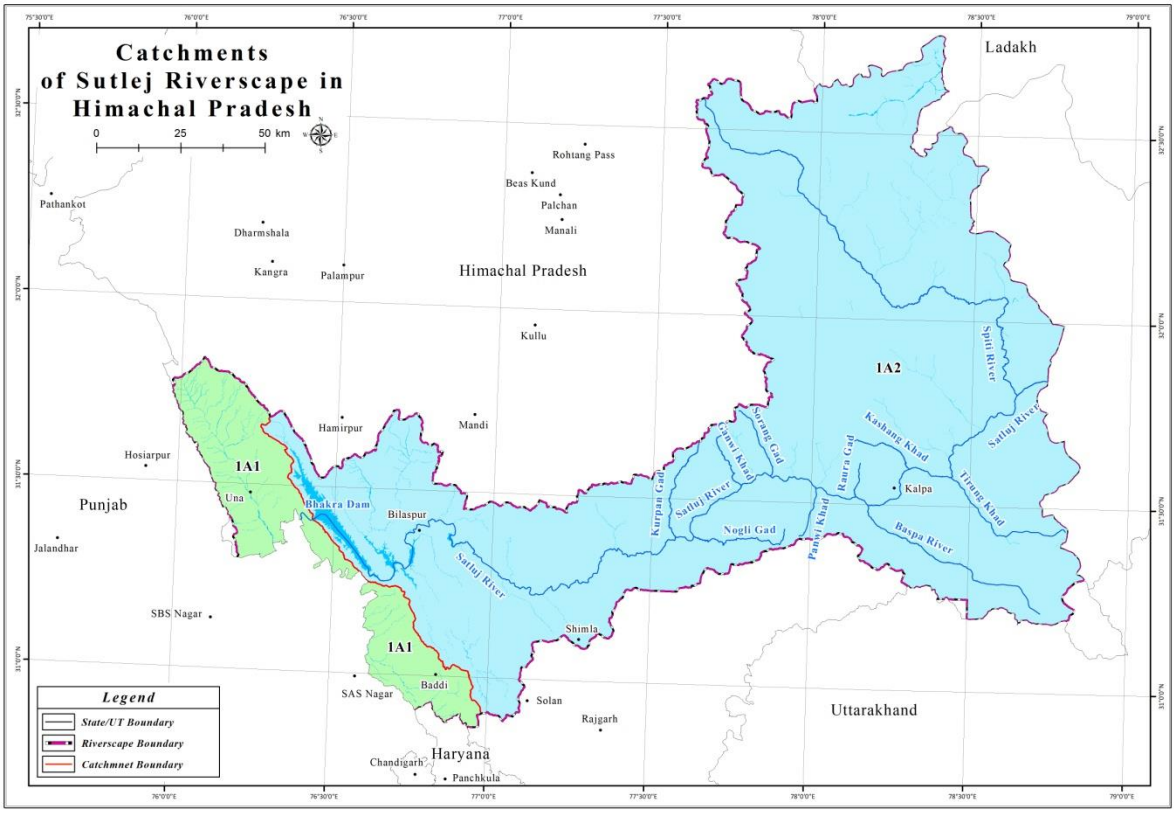



**Fig.1. 2 Catchment of Sutlej Riverscape in Himachal Pradesh**

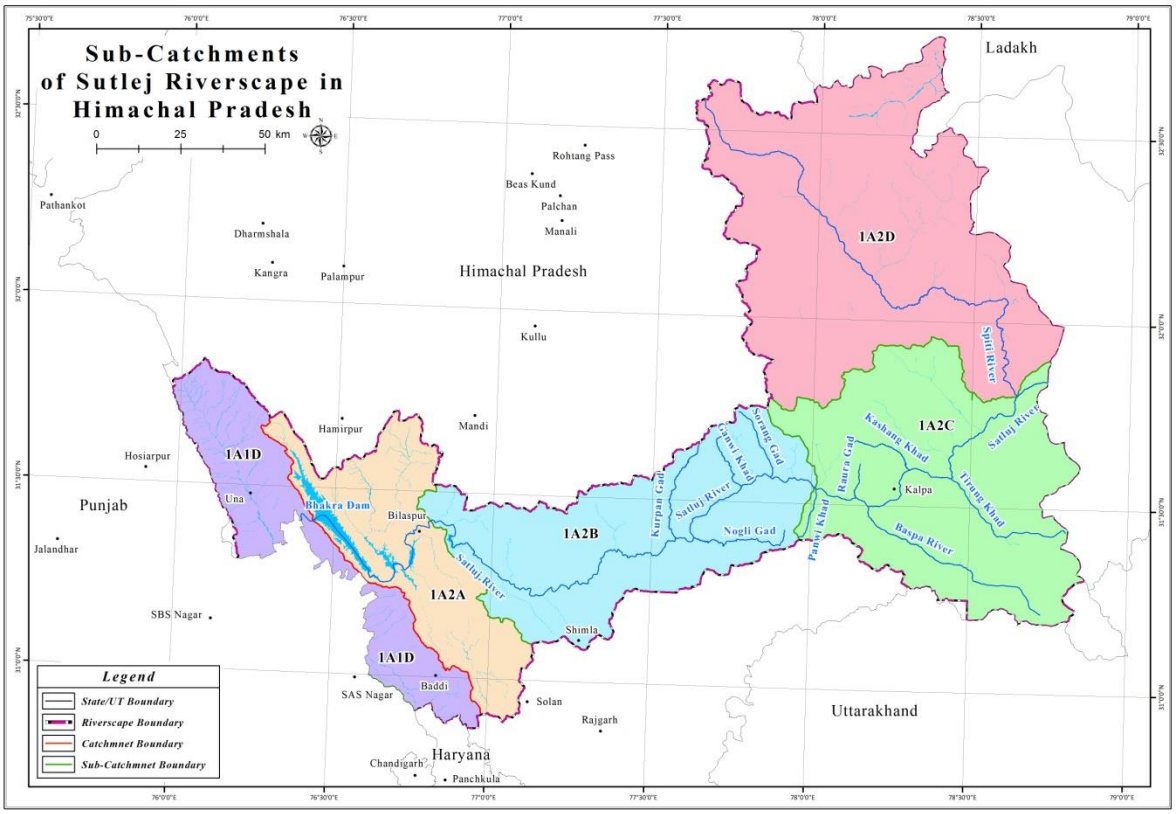



**Fig.1. 3 Sub-Catchment of Sutlej Riverscape in Himachal Pradesh**

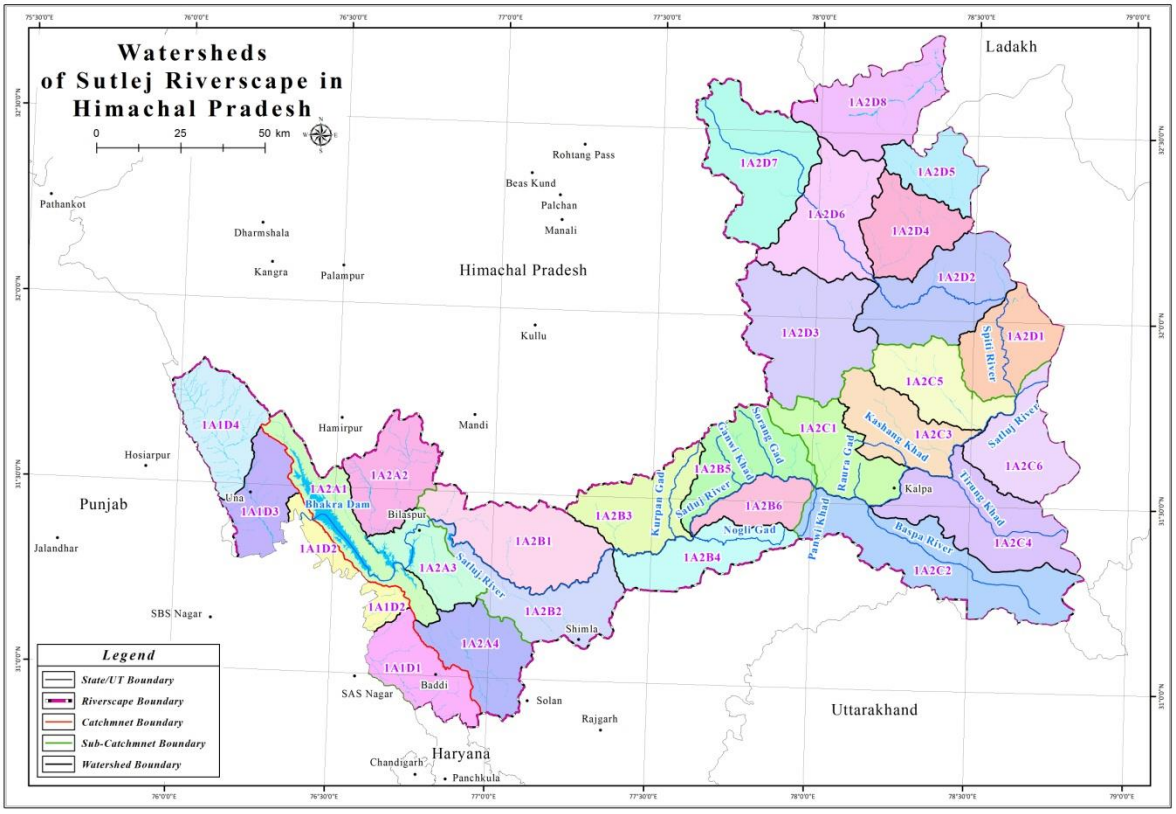



**Fig.1. 4 Watersheds of Sutlej Riverscape in Himachal Pradesh**

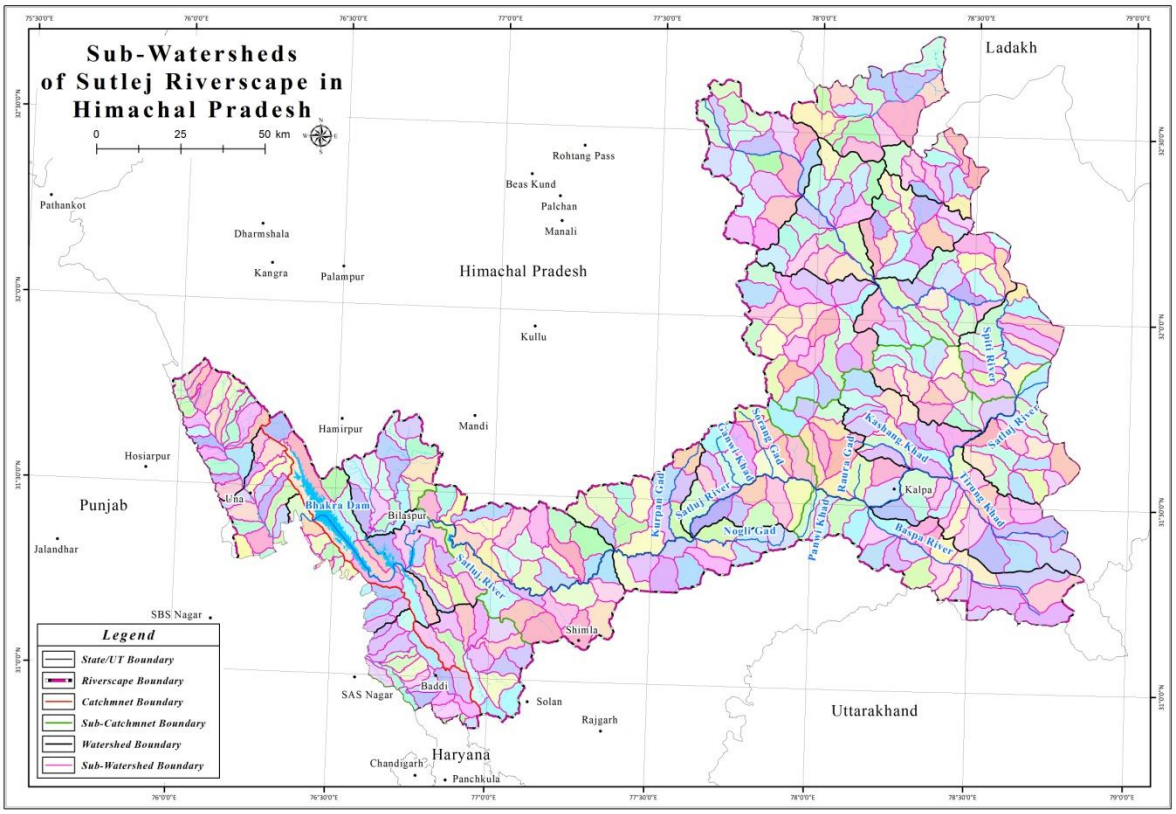



**Fig.1. 5 Sub-Watersheds of Sutlej Riverscape in Himachal Pradesh**

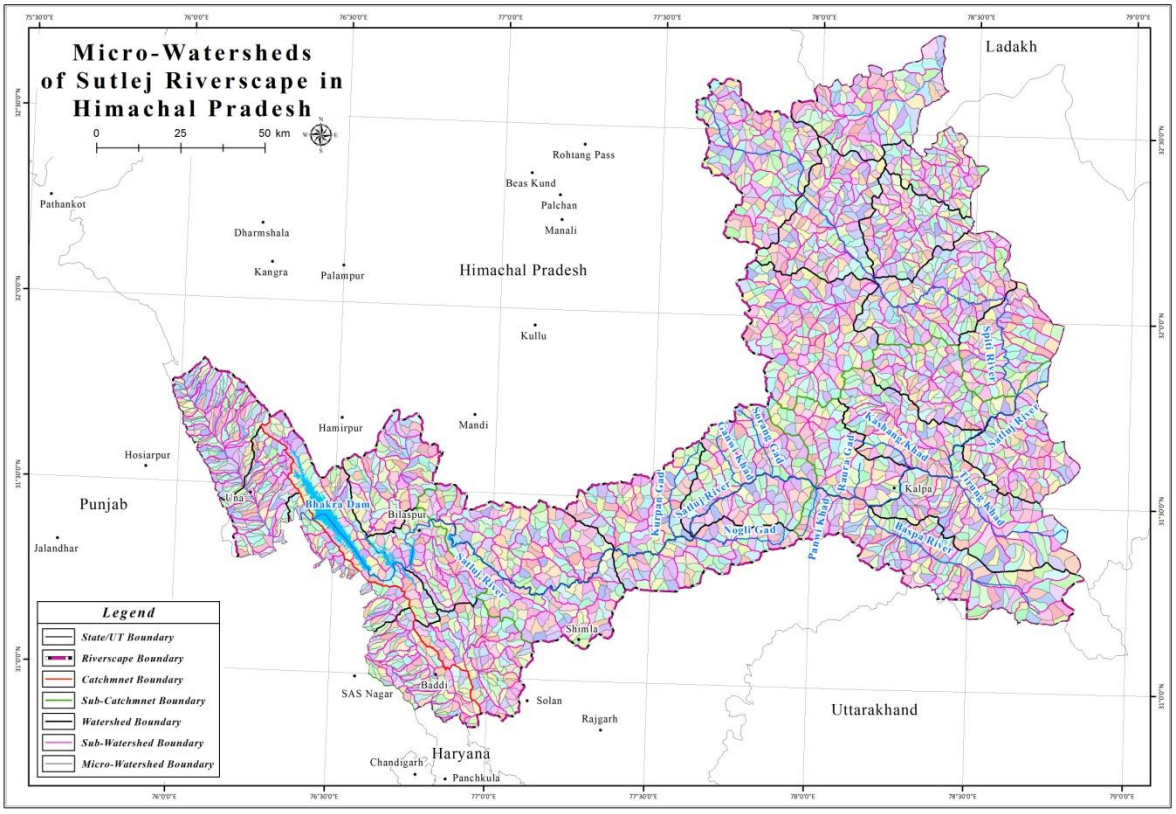



**Fig.1. 6 Micro-Watersheds of Sutlej Riverscape in Himachal Prdaesh**

## (ii) Land Use and Land Cover

A total of 18 major Land Use and Land Cover types i.e., Agriculture, Alpine Pastures, Barren, Canal, Cloud, Cloud shadow, Dense Forest, Industrial area, Mining/ Mining Dump, Moderately dense forest, Open Forest, Plantation, River (Dry)/River Sand, River (Perennial), Scrub, Settlement, Snow Glaciers, Water body have been deciphered in the Riverscape. The distribution of area under different land cover and land use classes is given in Table 1.7 and Fig. 1.7.

**Table 1. 7 Distribution of Area under Different Land Use and Land Cover Categories in the Riverscape of Himachal Pradesh**

| Sr.No. | Land Use and Land Cover | Area (in $km^2$) |
|---|---|---|
| **1.** | Agriculture | 2,781.78 |
| **2.** | Alpine Pastures | 1.42 |
| **3.** | Barren | 3,142.51 |
| **4.** | Canal | 0.06 |
| **5.** | Cloud | 38.72 |
| **6.** | Cloud Shadow | 2.32 |
| **7.** | Dense Forest | 1,127.37 |
| **8.** | Industrial Area | 1.06 |
| **9.** | Mining/Mining Dump | 3.63 |
| **10.** | Moderately Dense Forest | 1610.54 |
| **11.** | Open Forest | 1,540.26 |

| | | |
|---|---|---|
| **12.** | Plantation | 2.19 |
| **13.** | River (Dry)/River Sand | 103.57 |
| **14.** | River (Perennial) | 198.19 |
| **15.** | Scrub | 731.39 |
| **16.** | Settlement | 87.63 |
| **17.** | Snow/Glaciers | 8,781.77 |
| **18.** | Waterbody | 0.20 |
| **Total** | | **20,154.61** |

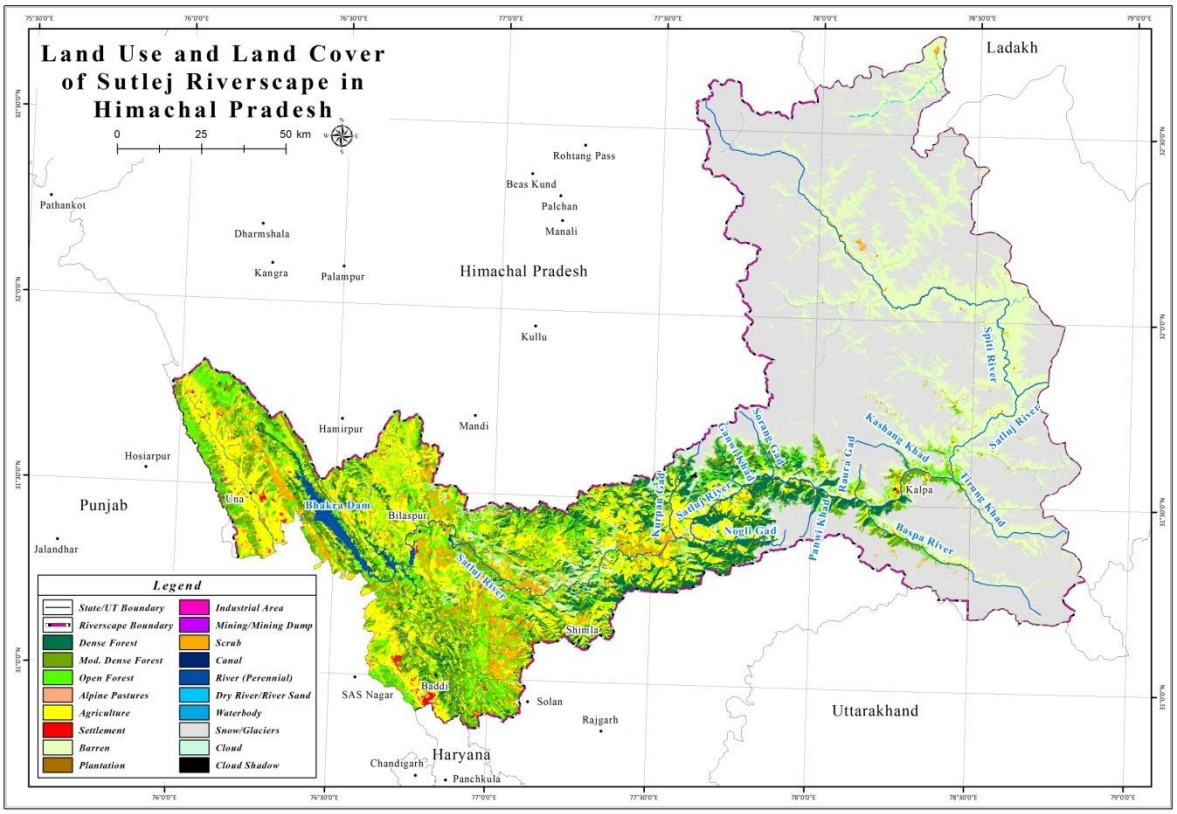



**Fig.1. 7 Land Use and Land Cover in the Sutlej Riverscape of Himachal Pradesh**

## (iii) Elevation

The area in the Riverscape was categorized into 12 elevation classes. The distribution of areas under different elevation classes is given in Table 1.8 and Fig. 1.8.

**Table 1.8 Distribution of Area under Different Elevation Categories in Riverscape of Himachal Pradsesh**

| Sr.No. | Elevation Classes (in m) | Area(in $km^2$) |
|---|---|---|
| 1 | < 250 | 11.30 |
| 2 | 250- < 500 | 1,504.49 |
| 3 | 500 - < 750 | 1,457.13 |
| 4 | 750 -< 1000 | 1,061.78 |
| 5 | 1000 -< 1250 | 749.58 |
| 6 | 1250 -< 1500 | 681.29 |

| | | |
|---|---|---|
| 7 | 1500 -< 2000 | 1,182.29 |
| 8 | 2000 -< 2500 | 887.25 |
| 9 | 2500 -< 3000 | 784.69 |
| 10 | 3000 - < 4000 | 2,223.45 |
| 11 | 4000 -< 5000 | 5,076.91 |
| 12 | ≥ 5000 | 4,534.45 |
| **Total** | | **20,154.61** |

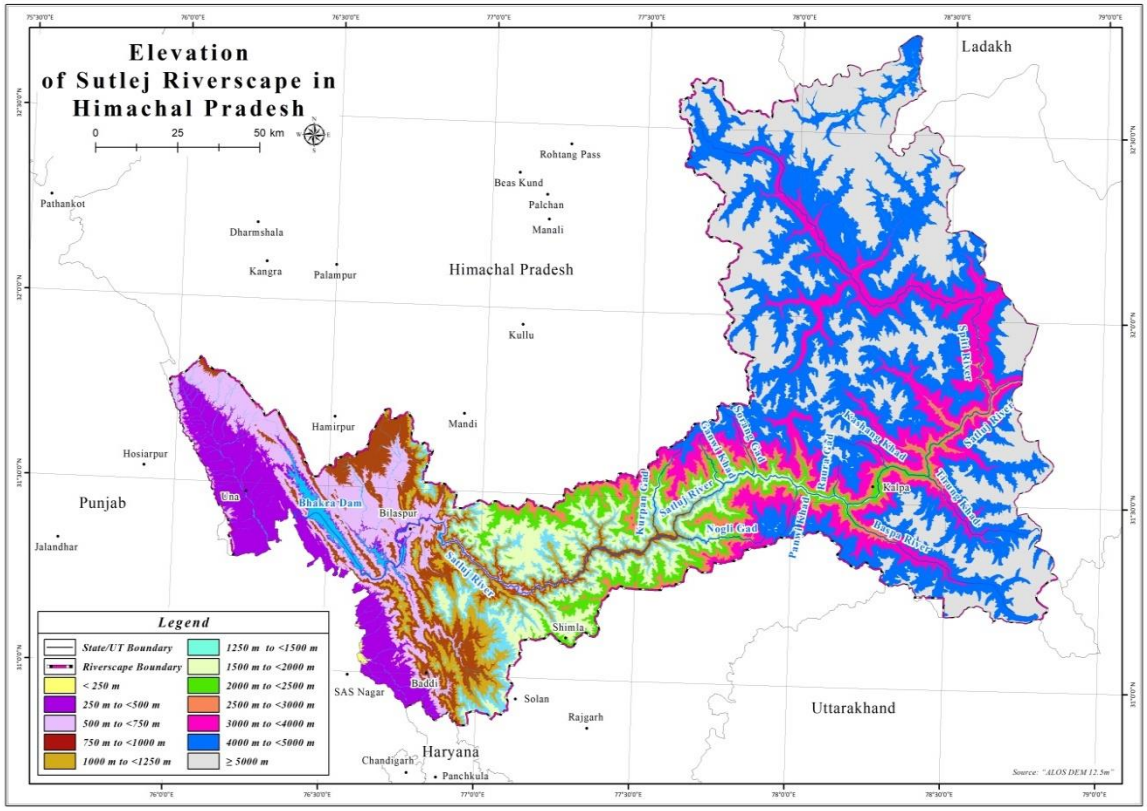



**Fig.1. 8 Elevation Categories Map of Sutlej Riverscape in Himachal Pradesh**

## (iv) Slope

Slope of land is an important factor influencing the soil and water runoff and suitability of the area for Forestry Interventions. Lands with steep slopes are prone to soil erosion and hence do not support growth of most of the plant species unless suitable stabilization measures are adopted. The land in Himachal Pradesh has been categorised into 10 different classes of slope ranges from 0° to 40° and greater than 40° areas under different slope classes is given in Table 1.9 and Fig. 1.9.

**Table 1.9 Distribution of Area under Different Slope Categories in Himachal Pradseh**

| Sr.No. | Slope (Degree) | Area (in km$^2$) |
|---|---|---|
| 1 | < 2.5 | 700.82 |
| 2 | 2.5 - < 5 | 798.86 |
| 3 | 5- < 10 | 1,519.91 |

| | | |
|---|---|---|
| 4 | 10 - < 15 | 1,629.53 |
| 5 | 15 - < 20 | 2,008.14 |
| 6 | 20 - < 25 | 2,281.60 |
| 7 | 25 - < 30 | 2,770.15 |
| 8 | 30 - < 35 | 2,775.29 |
| 9 | 35 - < 40 | 2,340.68 |
| 10 | ≥ 40 | 3,329.63 |
| **Total** | | **20,154.61** |

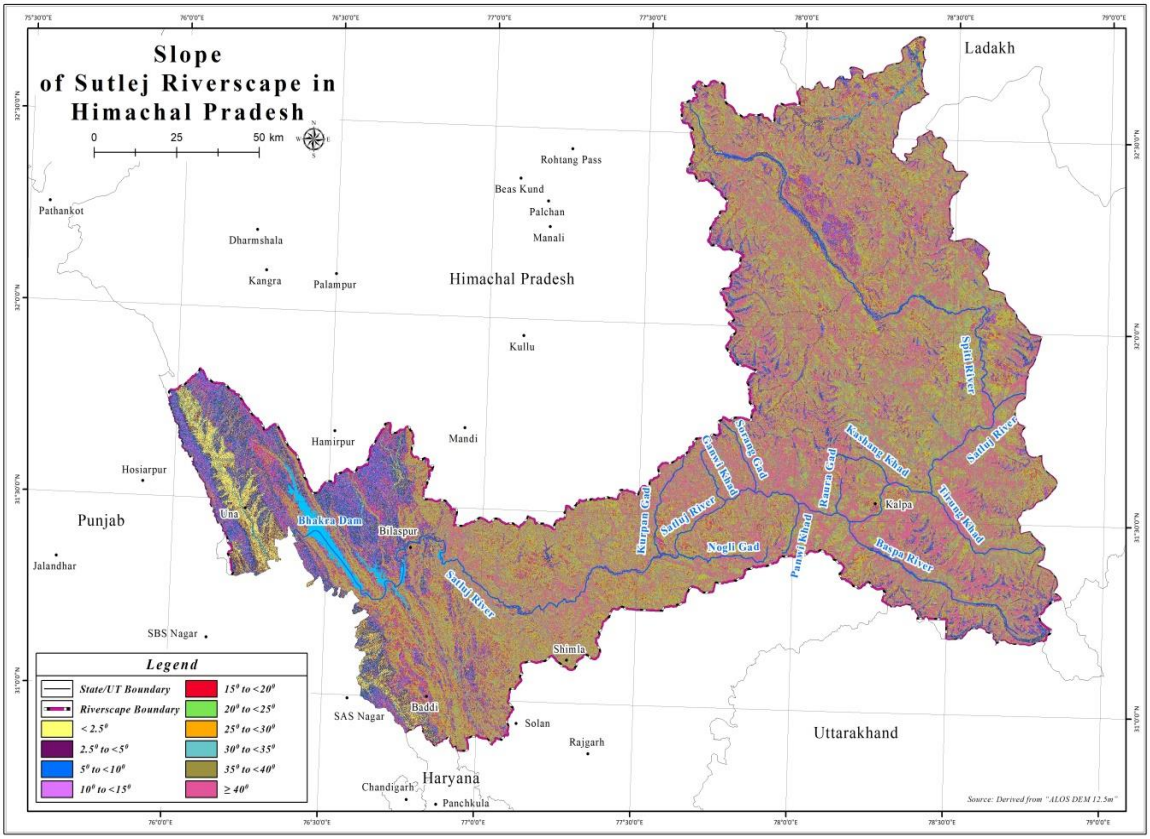



**Fig.1. 9 Different Slope Categories of Sutlej Riverscape in Himachal Pradesh**

## (v) Soil Type

Soil is considered as one of the most important parameter for modelling suitability of forest plantation zones. Since choice of species mainly depend upon the soil type and soil depth these parameters have been drived from soil map prepared by NBSS-LUP for further use in modelling in the present study. A total of 11 soil type lasses have been recorded in the Riverscape in Himachal Pradesh. Variuos soil types and their proportionate area estimates are given in Table 1.10 and Fig 1.10.

**Table 1.10 Distribution of Area under Different Soil types and other Land Attributes in Himachal Pradesh**

| S. No | Soil Type | Area (in km$^2$) |
|---|---|---|
| 1. | Dystric Eutrochrepts | 1,392.90 |

| | | |
|---|---|---|
| 2. | Lithic Cryorthents | 732.15 |
| 3. | Non-Soil | 200.53 |
| 4. | Typic Cryochrepts | 19.47 |
| 5. | Typic Cryorthents | 5,612.74 |
| 6. | Typic Eutrochrepts | 1,453.16 |
| 7. | Typic Udifluvents | 977.29 |
| 8. | Typic Udorthents | 8,591.91 |
| 9. | Typic Ustifluvents | 379.34 |
| 10. | Typic Ustorthents | 504.68 |
| 11. | Udic Ustochrepts | 290.44 |
| **Total** | | **20,154.61** |

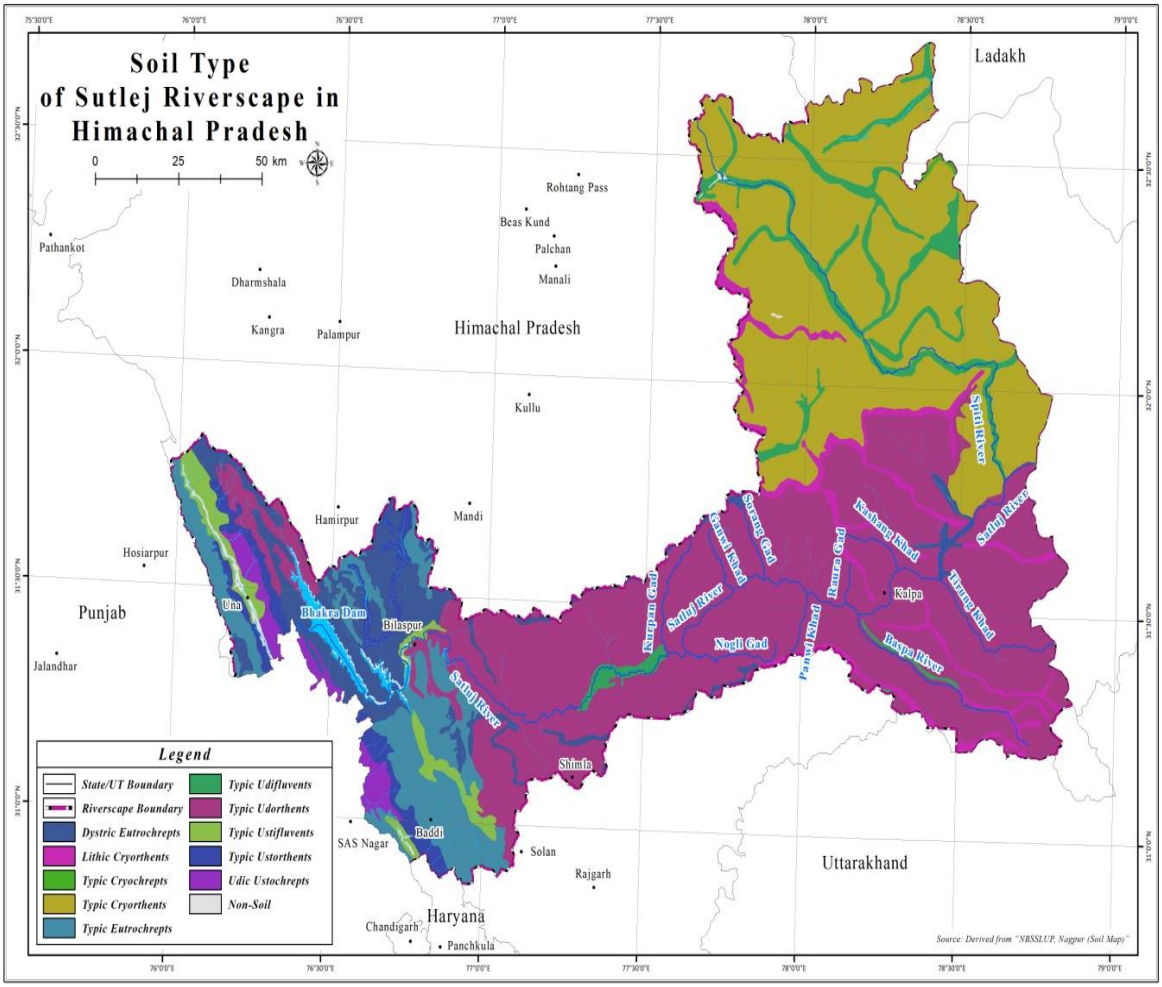



**Fig.1. 10 Soil Types of Sutlej Riverscape in Himachal Pradesh**

## (vi) Soil Erosion

A total six categories of the erosion classes have been mapped in Himachal Pradesh, *viz.*, < 5 t/ha/year, 5-10 t/ha/year, 10-20 t/ha/year, 20-40 t/ha/year, >40 t/ha/year and non soil category. The distribution of areas under different erosion classes is given in Table 1.11 and Fig. 1.11.

**Table 1.11 Distribution of Area under Different Soil Erosion Categories in Himachal Pradesh**

| Sr.No. | Soil Erosion (t/ha/year) | Area ($km^2$) |
|---|---|---|
| **1** | < 5 | 775.62 |
| **2** | 5 - < 10 | 1,220.55 |
| **3** | 10 - < 20 | 4,257.49 |
| **4** | 20 - < 40 | 2,399.80 |
| **5** | ≥ 40 | 1,289.51 |
| **6** | Non Soil | 10,211.64 |
| **Total** | | **20,154.61** |

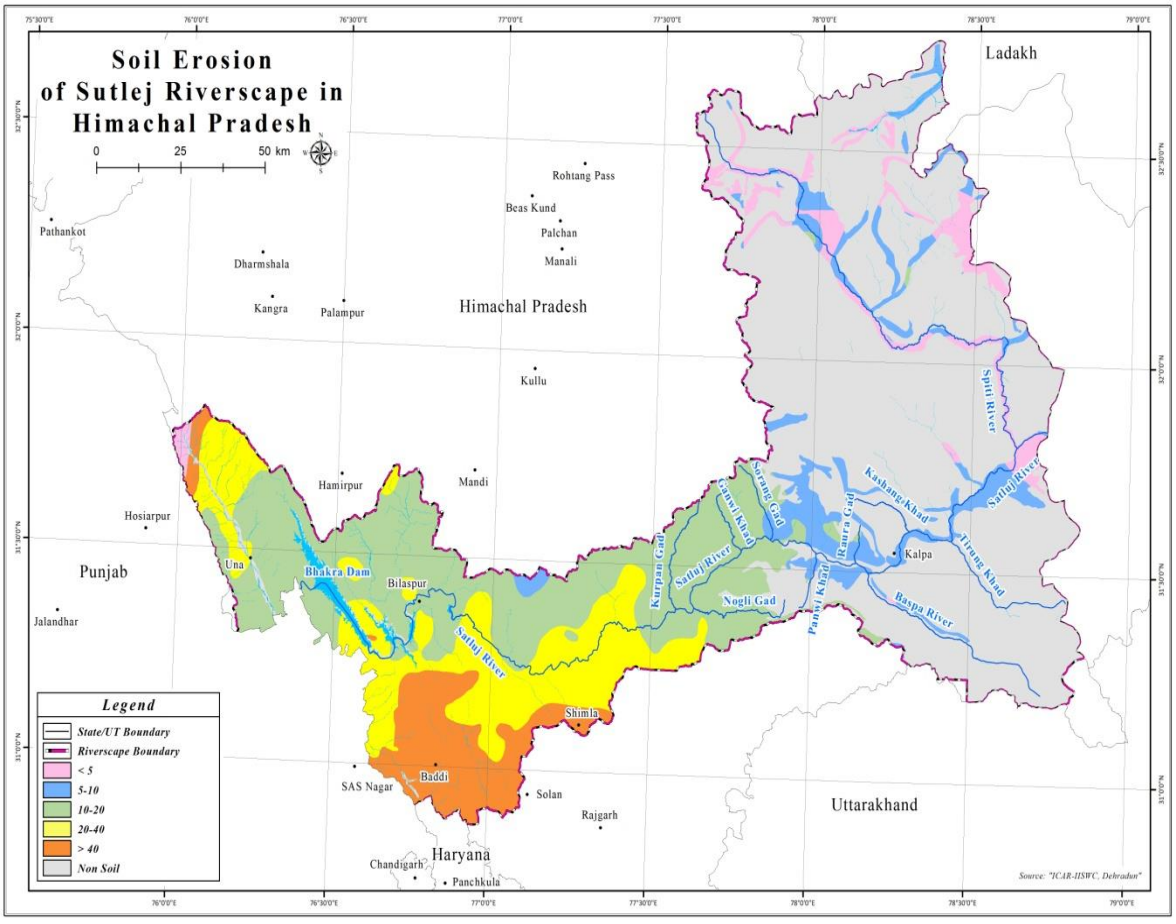



**Fig.1. 11 Soil Erosion Categories of Sutlej Riverscape in Himachal Pradesh**

### (vii) Soil Depth

Soil depth is one of the most vital factors governing the selection of species for plantation. The depth of soil is very important for the penetration of the roots of tree species. Four depth classes, *viz*., Deep, Moderately Deep, Shallow and Non-Soil have been mapped under soil depth category. The distribution of area under different soil depth classes is given in Table 1.12 and Fig. 1.12.

**Table 1.12 Distribution of Area under Different Soil Depth Categories in Himachal Pradesh**

| Sr.No. | Soil Depth | Area (in km$^2$) |
|---|---|---|
| **1.** | Deep | 4,368.74 |
| **2.** | Moderately Deep | 9,828.12 |
| **3.** | Non-Soil | 200.53 |
| **4.** | Shallow | 5,757.22 |
| **Total** | | **20,154.61** |

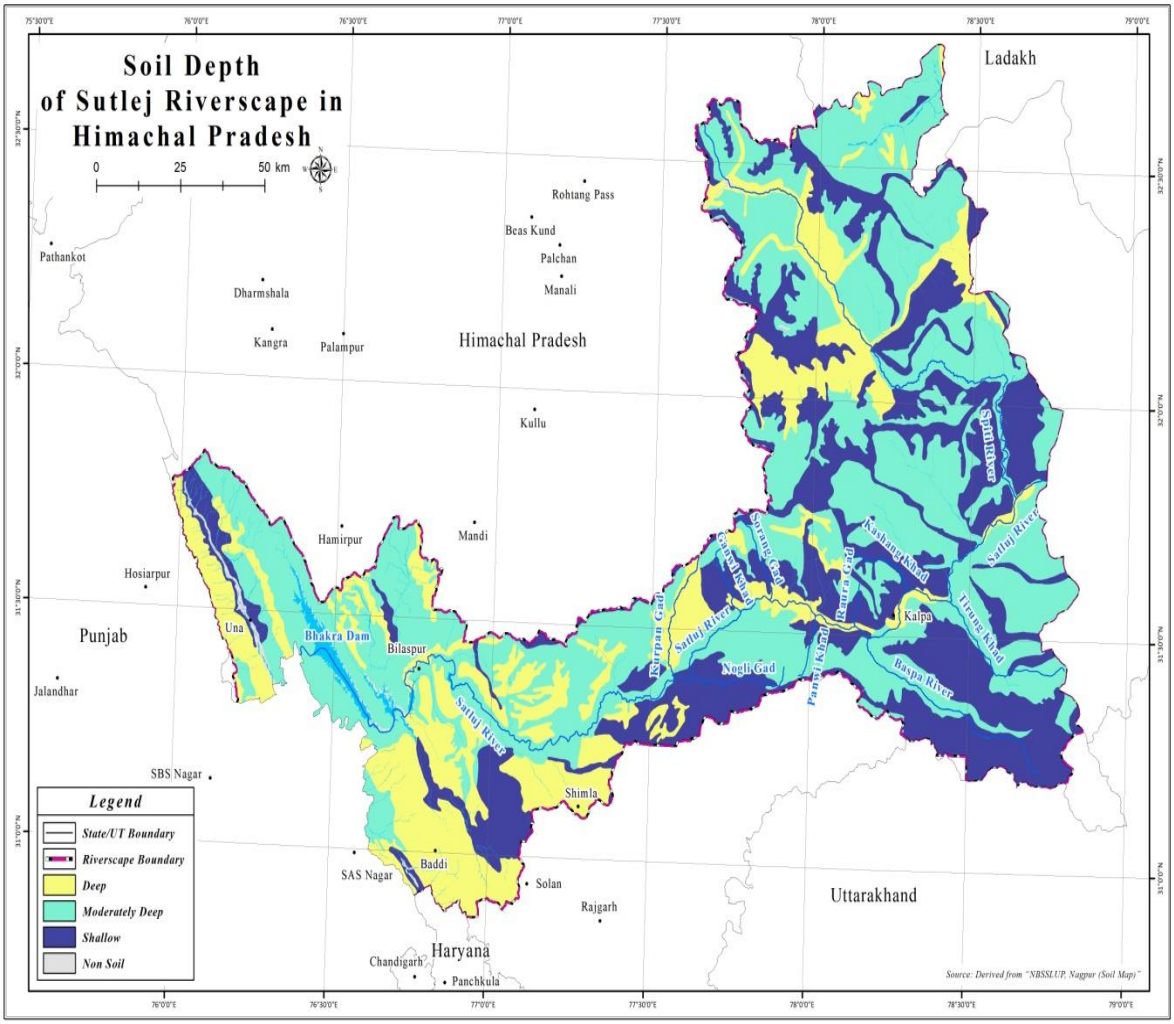



**Fig.1. 12 Soil Depth Categories of Sutlej Riverscape in Himachal Pradesh**

### (viii) Aspect

The aspect map has been derived from the ASTER DEM. A total of 9 classes, *viz.*, flat land, north, north-east, east, south-east, south, south-west, westand north-west have been deciphered in the Himachal Pradesh. The distribution of areas under different aspect classes and their area is given in Table 1.13 and Fig. 1.13.

**Table 1.13 Distribution of Area under Different Aspect Categories in Himachal Pradesh**

| Sr.No. | Aspect | Area (in km$^2$) |
|---|---|---|
| 1 | Flat (-1) | 187.60 |
| 2 | North (0 - < 22.5, 337.5- <360) | 2,341.94 |
| 3 | North-east (22.5 - < 67.5) | 2,572.66 |
| 4 | East (67.5 - <112.5) | 2,461.65 |
| 5 | South-east (112.5 - <157.5) | 2,459.07 |
| 6 | South (157.5 - <202.5) | 2,403.68 |
| 7 | South-west (202.5 - <247.5) | 2,907.45 |
| 8 | West (247.5 - <292.5) | 2,475.23 |
| 9 | North-west (292.5-337.5) | 2,345.33 |
| **Total** | | **20,154.61** |

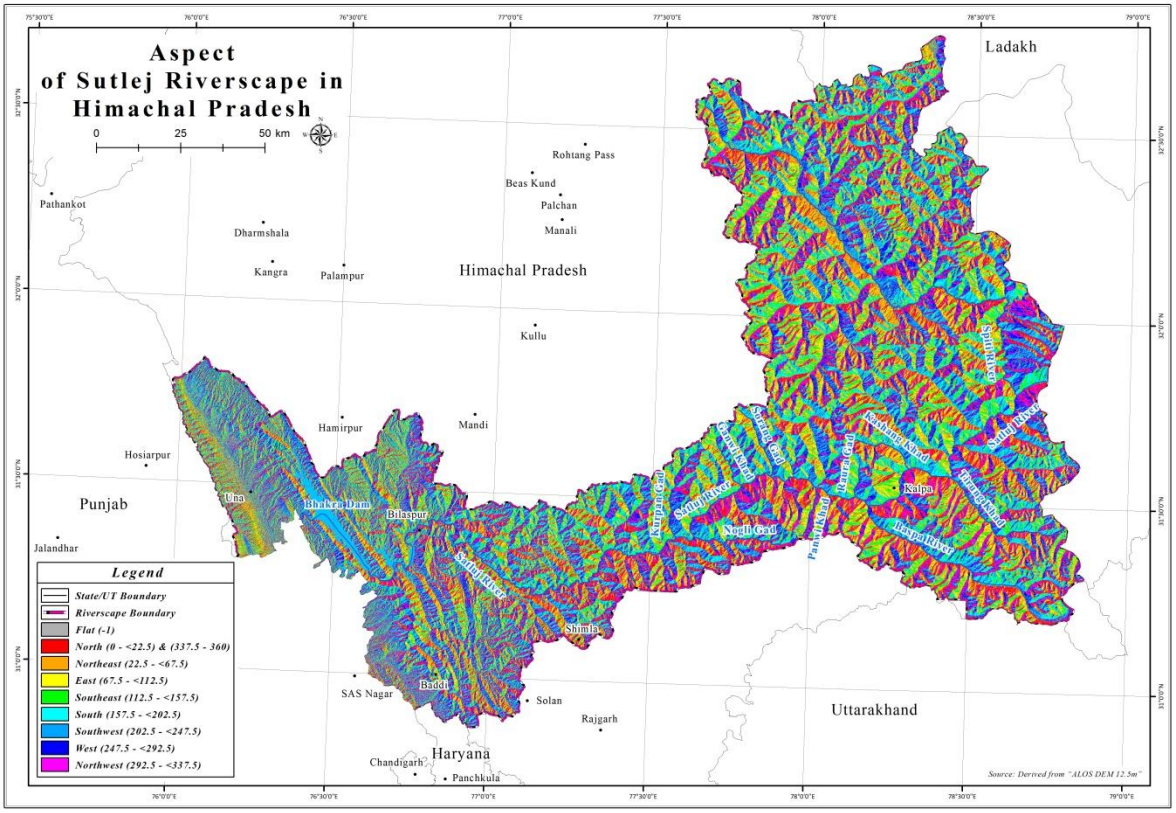



**Fig.1. 13 Aspect Categories of Sutlej Riverscape in Himachal Pradesh**

## (ix) Forest Cover

The forest cover map has been prepared using data provided by the Forest Survey of India. Altogether, four forest types and one non-forest categories were recorded in the Sutlej Riverscape, where in dense forest, moderately dense forest and non forest occupies the area of 1127.37 $km^2$, 1610.54 $km^2$ and 15145.05 $km^2$ respectively. The distribution of area under different Forest Cover categories is described in Table 1.14 and Fig 1.14.

**Table 1.14 Distribution of Area under Different Forest Cover categories in Himachal Pradesh**

| Sr. No | Forest Cover | Area (in $km^2$) |
|---|---|---|
| **1.** | Dense Forests | 1,127.37 |
| **2.** | Moderately Dense Forests | 1,610.54 |
| **3.** | Non Forests | 15,145.05 |
| **4.** | Open Forests | 1,540.26 |
| **5.** | Scrubs | 731.39 |
| **Total** | | **20,154.61** |

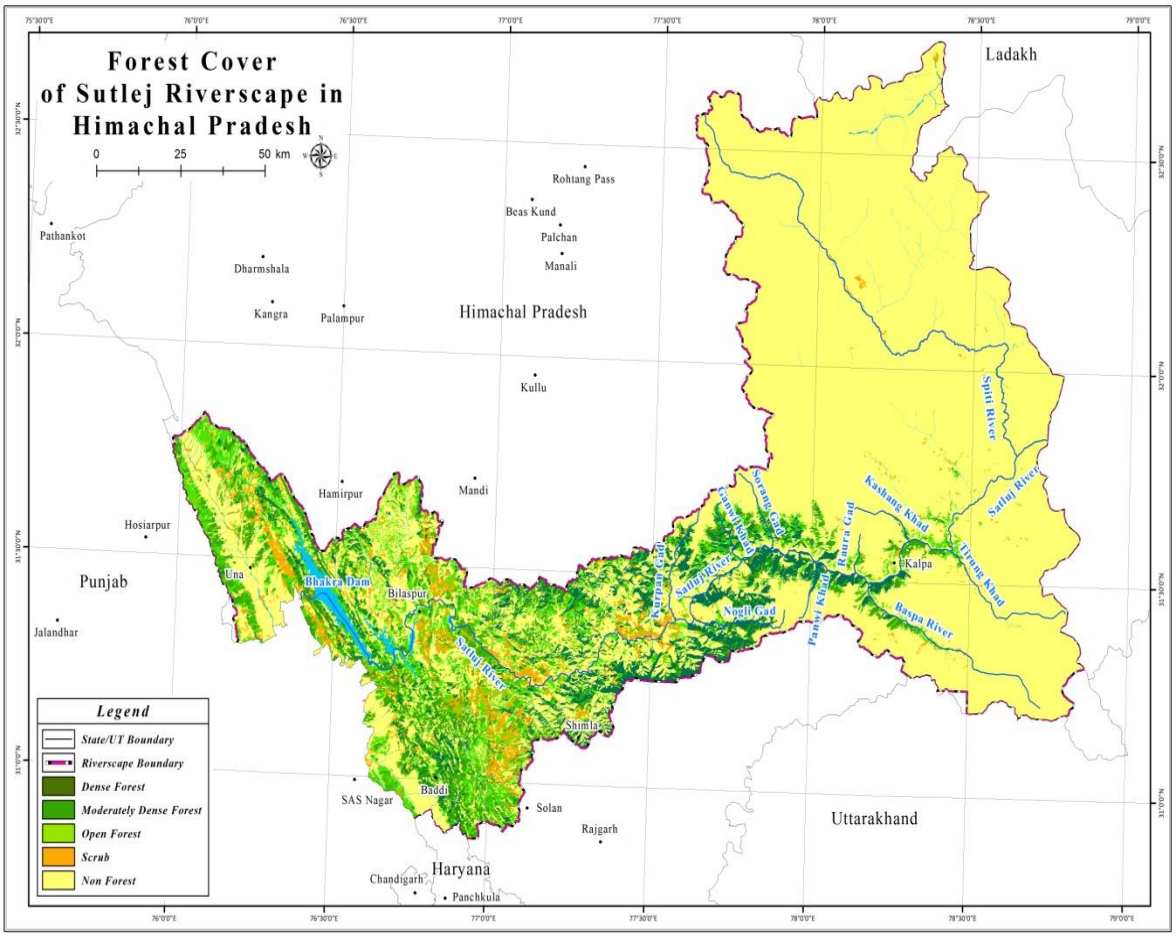



**Fig.1. 14 Forest Cover of Sutlej Riverscape in Himachal Pradesh**

## (x) Forest Types

The vegetation type information is most important in suggesting suitable sites based on areas which do not have dense forest cover or which are falling in scrub and grassland along the river banks. The distribution of Forest Type Categories has been described in Table 1.15 and Fig. 1.15.

**Table 1.15 Distribution of Forest Type Categories in Himachal Pradesh**

| Sr. No | Forest Type | Area (in $km^2$) |
|---|---|---|
| 1. | Dry Alpine Forests | 75.04 |
| 2. | Himalayan Dry Temperate Forests | 428.29 |
| 3. | Himalayan Moist Temperate Forests | 1,333.08 |
| 4. | Non Forest | 15,145.08 |
| 5. | Scrubs | 731.39 |
| 6. | Sub-Alpine Forests | 51.59 |
| 7. | Sub-tropical Pine Forests | 1,621.64 |
| 8. | Tropical Dry Deciduous Forests | 768.50 |
| **Total** | | **20,154.61** |

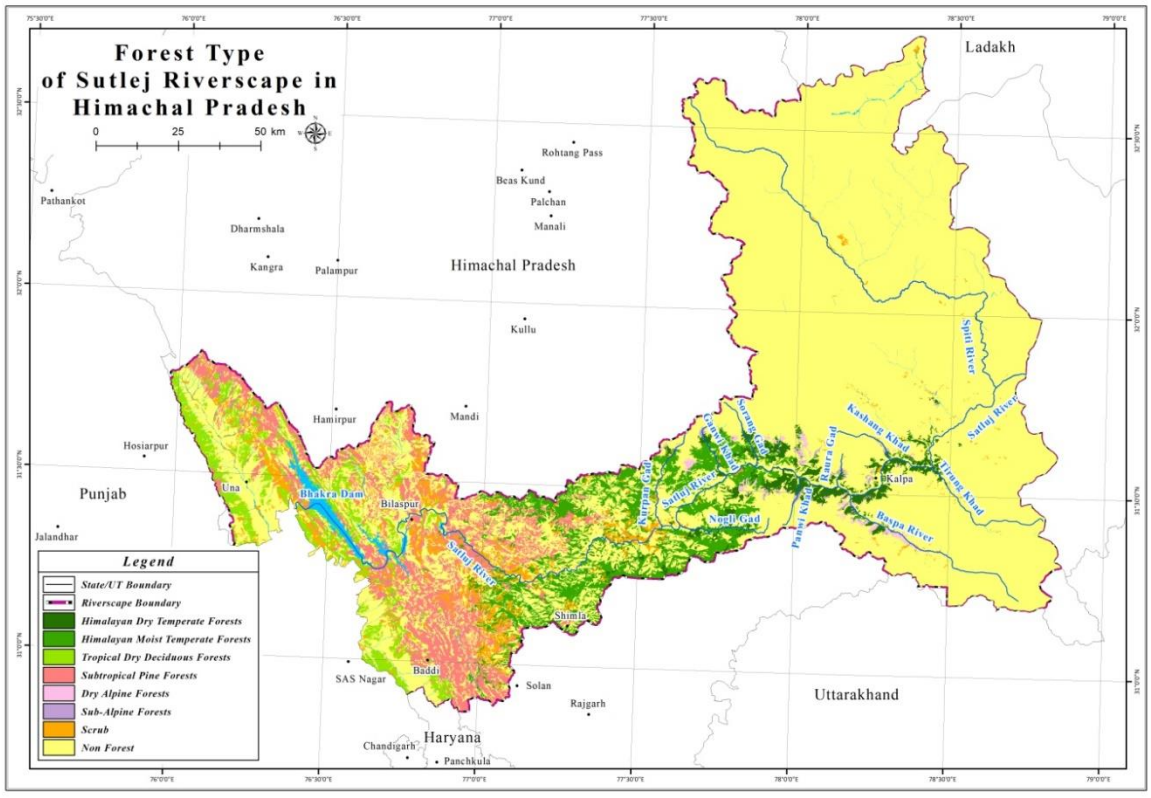



**Fig.1. 15 Forest Type Categories of Sutlej Riverscape in Himachal Pradesh**

## 1.4 Threat to the River Ecosystem

The course of the Sutlej along with its tributaries in Himachal Pradesh can be broadly classed as mountainous in the greater part of the state. The area is marked by steep slopes and cold climate.Glaciers and snow-clad mountains at high altitudes of the Himalaya feed an unending supply of water to the river from melting of ice and snow during the summer season. At lower altitudes, rain and snow provide surface water flow and ground water discharge into the river. The snow/ice and ground water in the mountainous region are the key contributors of water during dry months of the year and are crucial to perpetual flow of water in the Sutlej. Turbulent movement of water in the hilly region allows oxygenation of water thereby promoting growth of diverse aquatic flora and fauna which are valued for the self-cleansing ability of the river.

Precipitous topography, poorly distributed rainfall (much of which occurs during about three months in a year), soil exposed by landslides, construction and agricultural activities, erosion of soil from banks of water bodies and road sides, etc. lead to heavy silt load in the river, particularly during and immediately after the monsoon season. Burning of grass and leaf litter by people for promoting re-growth of fodder plants not only causes erosion but also leads to discharge of undesirable ash and other waste in the river water. Illicit felling of trees, injurious methods of removal of herbs, civic waste from urban and rural areas also pollutes water. These factors have undesirable impact on quantity and quality of water and lead to adverse socio-economic, biological, ecological and environmental implications in the hill as well as plains.

Checking soil erosion in forest, agricultural, and urban Landscapes, increasing infiltration of water into the soil, promoting ecological water flow from land to river, enhancing biofiltration of unclean water, improving environment, meeting forest produce requirement, improving livelihood and instilling a sense of responsibility in the public towards attaining these goals are the challenges that are sought to be addressed through Forestry Interventions.

## 1.5 Prioritisation of Sites for Forestry Interventions

The project followed a multi-stakeholder approach for preparing the DPR on Forestry Interventions. The preparatory phase for DPR included review of literature, primary and secondary data collection and analysis, expert consultations and receiving inputs from the wide ranging stakeholders (policy and decision makers; Central and State Governments; State Forest Departments of two states; relevant authorities; scientific organizations dealing with environment, forestry, and wildlife; civil society; non-governmental organizations; and other interest groups).

**Priority Criteria:** The geospatial layers of soil erosion and land use were used to determine the priority areas in the region. The various criteria *viz.*, Slope, Elevation, Aspect, Soil Errosion and Soil depth were used in geospatial modelling for determination of priority areas of Himachal Pradesh.

**Priority Classes:** Statistical analysis of the areas estimates shows that 6,295.41 $km^2$ areas is in high priority region, 2961.49 $km^2$ is in medium priority and 10,874.06 $km^2$ area is falls into low priority region for Himachal Pradesh (Table 1.16- 1.18 and Fig. 1.16).

**Table 1.16 Priority Treatment Areas of Himachal Pradesh**

| Sr.No. | Priority Class | Area (in $km^2$) |
|---|---|---|
| 1. | Eliminate | 23.65 |
| 2. | High | 6,295.41 |
| 3. | Low | 10,874.06 |
| 4. | Moderate | 2,961.49 |
| **Total** | | **20,154.61** |

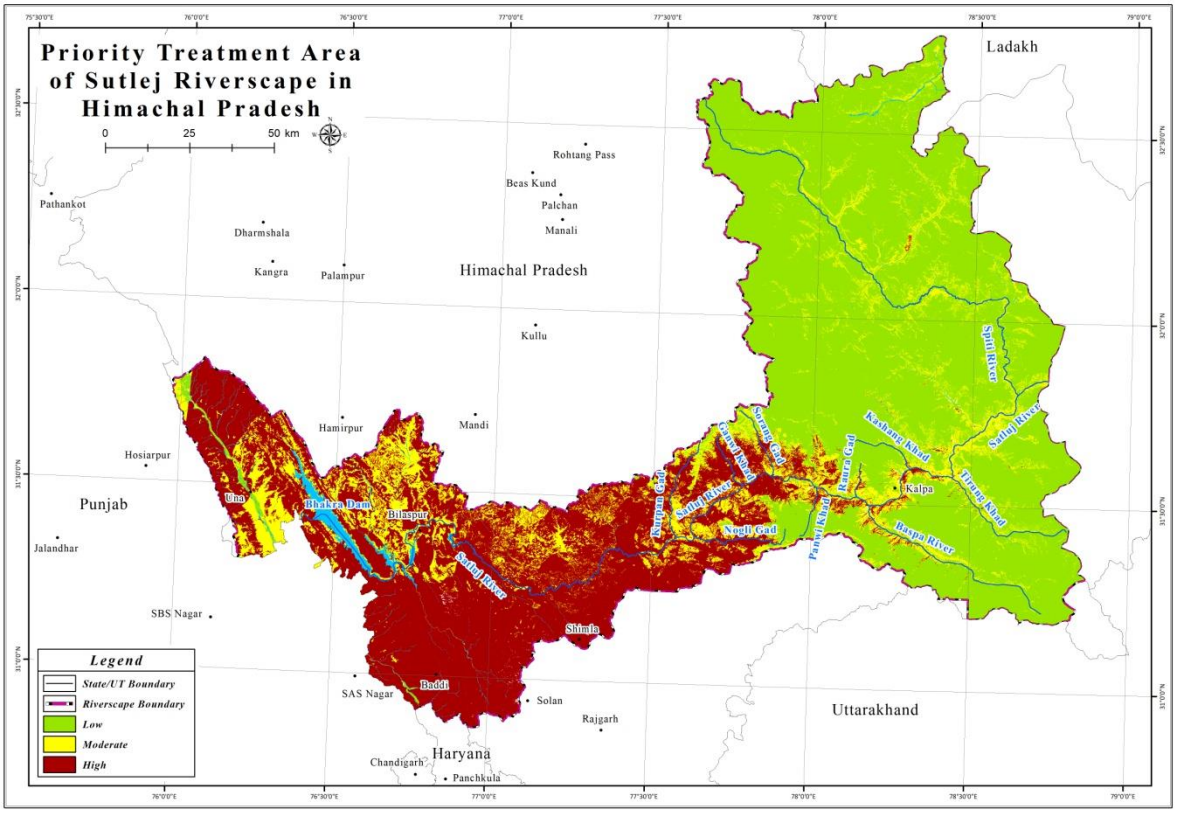



**Fig.1. 16 Priority Treatment Areas of Sutlej Riverscape in Himachal Pradesh**

**Table 1.17 Priority Treatment Area of Sutlej Riverscape under Natural Landscape Activity (Area in Ha)**

| Sr.No. | Division | High | Medium | Low | Total |
|---|---|---|---|---|---|
| **1.** | Anni | 293 | 190 | 0 | **483** |
| **2.** | Bilaspur | 881 | 392 | 0 | **1,273** |
| **3.** | Hamirpur | 295 | 125 | 0 | **420** |
| **4.** | Karsog | 466 | 65 | 0 | **531** |
| **5.** | Kinnaur | 75 | 155 | 100 | **330** |
| **6.** | Kotgarh | 185 | 15 | 0 | **200** |

| | | | | | |
|---|---|---|---|---|---|
| **7.** | Kunihar | 260 | 0 | 0 | **260** |
| **8.** | Nachan | 195 | 165 | 0 | **360** |
| **9.** | Nalagarh | 1,167 | 20 | 0 | **1,187** |
| **10.** | Rampur | 160 | 50 | 0 | **210** |
| **11.** | Shimla | 130 | 0 | 0 | **130** |
| **12.** | Solan | 35 | 0 | 0 | **35** |
| **13.** | Spiti Wildlife | 0 | 0 | 325 | **325** |
| **14.** | Suket | 365 | 3 | 0 | **368** |
| **15.** | Theog | 250 | 15 | 0 | **265** |
| **16.** | Una | 431 | 245 | 0 | **676** |
| **Total** | | **5,188** | **1,440** | **425** | **7,053** |

**Table1.18 Priority Treatment Area of Sutlej Riverscape under Soil and Mositure Conservation Activity (Area in $m^3$)**

| S. No | Division | High | Moderate | Low | Total |
|---|---|---|---|---|---|
| **1.** | Anni | 21,44,987.34 | 8,28,764.12 | 95,748.54 | 30,69,500.00 |
| **2.** | Bilaspur | 26,07,561.29 | 13,94,650.52 | 2,75,688.19 | 42,77,900.00 |
| **3.** | Hamirpur | 4,53,253.11 | 3,02,109.09 | 14,137.80 | 7,69,500.00 |
| **4.** | Karsog | 13,26,786.37 | 3,90,556.35 | 2,157.28 | 17,19,500.00 |
| **5.** | Kinnaur | 2,16,351.58 | 9,03,917.50 | 53,91,230.92 | 65,11,500.00 |
| **6.** | Kotgarh | 34,15,243.28 | 3,02,197.28 | 7,559.43 | 37,24,999.99 |
| **7.** | Kunihar | 74,63,300.48 | 1,64,663.57 | 60,535.95 | 76,88,500.00 |
| **8.** | Nachan | 10,24,428.77 | 2,79,055.87 | 11,015.36 | 13,14,500.00 |
| **9.** | Nalagarh | 32,82,293.22 | 64,833.48 | 29,273.30 | 33,76,400.00 |
| **10** | Rampur | 36,98,156.24 | 14,78,389.08 | 2,60,454.68 | 54,37,000.00 |
| **11** | Shimla | 49,86,876.56 | 1,66,497.36 | 27,626.07 | 51,80,999.99 |
| **12** | Shimla (Urban) | 9,96,743.24 | 0.00 | 31,256.76 | 10,28,000.00 |
| **13** | Solan | 51,17,379.84 | 38,678.09 | 66,442.07 | 52,22,500.00 |
| **14** | Suket | 19,62,897.32 | 9,99,891.21 | 41,211.47 | 30,04,000.00 |
| **15** | Theog | 14,97,492.70 | 5,192.32 | 6,314.98 | 15,09,000.00 |
| **16** | Una | 27,46,834.02 | 11,26,805.61 | 3,44,860.37 | 42,18,500.00 |
| **Total** | | **429,40,585.36** | **84,46,201.45** | **66,65,513.17** | **58,052,299.98** |

## 1.6 Proposed Forestry Interventions

In order to address the problems and challenges outlined above, Forestry Interventions have been proposed in the DPR. The following three types of Landscapes have been delineated within the Riverscape for the purpose of Forestry Interventions:

**(i) Natural Landscapes**

**(ii) Agriculture Landscapes**

**(iii) Urban Landscapes**

Landscape-specific models have been proposed in the DPR. The following general principles are applicable to models in all Landscapes:

a. Native species of trees, shrubs and herbs will be planted. Mixture will be used as far as possible in preference to pure plantation.

b. Pits for planting works will be dug sufficiently before planting operation according to the standard practice in the plantation area, but period between pit digging and scheduled planting time will not be more than four months so that run-off of soil through wind and water will be low. Pits will be refilled after digging.

c. Organic manures will be applied to boost plant growth in nurseries and plantations. Eco-friendly measures (e.g., physical or mechanical methods, use of natural products, etc.) of weed and pest control will be adopted without resorting to use of synthetic chemicals.

d. Protection against all types of biotic and abiotic stresses will be effectively provided to planted seedlings for four years through fence, watch and ward as well as public awareness.

e. The suggested interventions is to be considered flexible and not rigid, with respect to changing the site location, area, species and minor changes in the models and the applicable schedule rates if the circumstances demand so while implementation the DPR Sutlej in Himachal Pradesh and the concerned Conservator of Forest shall exercise the power to approve such changes as and when required.

f. The project costs have been worked out on the basis of rate prevalent during year 2019-20 in the respective State/UTs and 7% escalation in the project cost during the subsequent years has been incorporated in anticipation of the cost escalation in future. However, actual project cost at the time of implementation on yearly basis shall need revision as per the change in Wholesale Price Index (WPI) on year to year basis. The Conservator of Forest may be empowered to revise the project cost accordingly for the quality desired output of the project.

### 1.6.1 Natural Landscapes

Proposed Forestry Interventions for natural ecosystems (i.e., forests, grasslands, and wetlands) such as protection, habitat management by way of soil and moisture conservation works, weed control, plantations, eco-restoration, bio-filters and bio-remediation, etc. have been planned. Considering the type of natural ecosystems, native vegetation, soil conditions, and agro-climatic zones, potential models of various types of plantations were identified,

designed, and developed by HFRI, Shimla in consultation with the State Forest Department. Areas under the control of the State Forest Department will be treated through Natural Landscape models. The treatments sites usually have open forest, scrub vegetation or grasslands. The purpose of these models is protection, eco-restoration, and conservation.In total 16 models have been proposed in the Natural Landscapes, list of suggestive species, cost norms and plantation design has been described from Table 1.19-1.35 and from Fig. 1.17-1.29).

**Table 1.19- List of Suggestive Species for Plantation in Natural Landscapes of Himachal Pradesh**

| Model Number | Suggestive Species |
|---|---|
| **SL/HP/NL/01** | **Trees:** *Juniperus polycarpos, Salix alba, Salix tetrasperma, Salix fragilis, Salix flabellaris, Salix daphnoides, Populus ciliata, Populus alba*, etc.<br><br>**Shrubs (**Near water bodies**):** *Hippophae rhamnoides* ssp. *turkestanica, Hippophae salicifolia, Myricaria germanica, Myricaria elegans, Lonicera hypoleuca*,etc.<br><br>**Shrubs (**Dry Areas**):** *Ephedra gerardiana, Capparis spinosa, Rosa webbiana, Colutea nepalensis, Caragana brevifolia, C. versicolor, Ribes orientale, R. alpestre, R. himalense*, etc. |
| **SL/HP/NL/02** | **Shrubs:** *Ephedra gerardiana, Capparis spinosa, Rosa webbiana, Colutea nepalensis, Caragana brevifolia, C. versicolor, Ribes orientale, Ribes alpestre, Ribes himalense*, etc.<br>**Herbs:** *Arnebia euchroma, Arnebia guttata, Artemisia maritima, Heracleum candicans, H. wallichii, Rheum australe, Inula racemosa, Hyssopus officinalis, Hyoscyamus niger, Allium carolinianum*, etc.<br>**Grasses and Forbs:** *Festuca pratensis, Trifolium pretense, Poa pratensis, Poa alpina, Dactylis glomerata, Eragrostis* spp., *Melilotus* spp., *Koeleria* spp., *Potentilla* spp., *Agrostis* spp., *Danthonia* spp., *Medicago* spp., *Cicer songaricum, Artemisia* spp.,etc. |
| **SL/HP/NL/03** | **Herbs/Medicinal and Aromatic Plants:** *Aconitum heterophyllum, Ainsliaea aptera, Arnebia benthamii, Dactylorhiza hatagirea, Heracleum candicans, H.* wallichii, *Angelica glauca, Polygonatum* |

| | |
|---|---|
| | *verticillatum, Selinum wallichianum, Allium humile, Geranium wallichianum, Rheum australe, Rheum moorcroftianum, Sinopodophyllum hexandrum, Saussurea costus,Potentilla* spp., *Artemisia* spp., etc.<br><br>**Grasses and Forbs:** *Festuca pratensis, Festuca valesiaca, Trifolium pretense, Poa pratensis, Poa annua, Dactylis glomerata, Medicago*spp., *Melilotus* spp., *Ainsliaea* spp., *Agrostis gigantea, Agrostis pilosula, Agrostis munroana, Agropyron* spp., *Danthonia* spp., *Calamagrostis montanus, Koeleria* spp., *Brachypodium sylvaticum, Bromus himalaicus, Bromus ramosus, Stipa roylei*,etc. |
| **SL/HP/NL/04** | **Trees:** *Betula utilis, Pinus wallichiana, Picea smithiana, Acer caesium. Acer pictum, Corylus jacquemontii, Prunus cornuta, Quercus semecarpifolia,* etc.<br>**Herbs/Medicinal and Aromatic Plants:** *Aconitum heterophyllum, Arnebia benthamii, Dactylorhiza hatagirea, Heracleum candicans, Polygonatum verticillatum, Selinum wallichianum, Allium humile, Geranium wallichianum, Bergenia stracheyi, Phytolacca acinosa, Angelica glauca, Picrorhiza kurrooa, Rheum* spp., *Saussurea* spp., *Dracocephalus* spp., etc. |
| **SL/HP/NL/05** | **Tress**: *Pinus gerardiana, Pinus wallichiana, Cedrus deodara, Fraxinus xanthoxyloides, Olea cuspidata, Alnus nitida, Celtis australis,* etc.<br><br>**Herbs:** *Hyoscyamus niger, Artemisia maritima, Heracleum candicans, H.wallichii, Angelica glauca, Geranium wallichianum, Viola* spp., *Valeriana jatamansii, Sinopodophyllum hexandrum, Polygonatum verticillatum, Angelica glauca, Selinum wallichianum, Selinum vaginatum*, etc. |
| **SL/HP/NL/06** | **Trees:** *Cedrus deodara, Pinus wallichiana, Picea smithiana, Taxus wallichiana, Cupressus torulosa*, etc.<br>**Shrubs:** *Drepanostachyum falcatum, Daphne papyracea, Prinsepia utilis, Rosa sericea, Rosa macrophylla, Rosa moschata, Debregeasia saeneb, Cotoneaster bacillaris, Viburnum cotinifolium, Viburnum grandiflorum, Cornus oblonga, Syringa emodi, Indigofera heterantha, Desmodium elegans, Hypericum oblongifolium*,etc.<br>**Herbs:** *Aconitum heterophyllum, Picrorhiza kurrooa, Heracleum candicans, Angelica glauca, Geranium wallichianum, Sinopodophyllum hexandrum, Polygonatum verticillatum, Polygonatum cirrhifolium, Bergenia stracheyi, Bergenia ciliata, Viola pilosa, Trillium govanianum, Phytolacca acinosa, Valeriana jatamansii*, etc. |
| **SL/HP/NL/07** | **Trees:** *Cedrus deodara, Pinus wallichiana, Picea smithiana, Taxus* |

| | |
|---|---|
| | *wallichiana, Aesculus indica, Prunus cornuta, Prunus cerasoides, Acer caesium, Acer cappadocicum, Carpinus viminea, Betula alnoides, Myrica esculenta, Cornus macrophylla, Alnus nitida, Ulmus wallichiana, Quercus glauca, Quercus oblongata, Quercus floribunda, Quercus semecarpifolia, Cornus capitata,*etc.<br>**Shrubs:** *Drepanostachyum falcatum , Daphne papyracea, Prinsepia utilis, Rosa moschata, Debregeasia saeneb , Cotoneaster bacillaris, Viburnum grandiflorum, Elaeagnus conferta, Hypericum oblongifolium, Rubus biflorus, Rubus niveus, Rubus ellipticus, Rubus foliosus, Zanthoxylum armatum, Viburnum mullaha, Rosa* spp., *Deutzia staminea, Deutzia corymbosa, Spiraea canescens,*etc.<br>**Herbs:** *Aconitum heterophyllum, Heracleum candicans, Angelica glauca, Geranium wallichianum, Polygonatum verticillatum, Polygonatum cirrhifolium, Sinopodophyllum hexandrum, Bergenia ciliata, Viola pilosa, Valeriana jatamansii, Viola canescens, Hedychium spicatum,*etc. |
| **SL/HP/NL/08** | **Grasses/Forbs:** *Festuca pratensis, Trifolium pretense, T. repens, Poa pratensis, Poa annua, Dactylis glomerata, Erianthus* spp., *Agrostis* spp., *Agropyron* spp., *Calamagrostis* spp., *Koeleria* spp., *Saccharum spontaneum, Chrysopogon gryllus, C. serrulatus, Arundinella nepalensis, Arundinella pumila, Themeda anathera, Drepanostachyum falcatum, Cymbopogon distans, Pennisetum glaucum , Alopecurus aequalis, Alopecurus nepalensis, Bothriochloa pertusa, Bothriochloa parviflora, Dichanthium annulatum, Digitaria* spp., *Polypogon fugax,* etc. |
| **SL/HP/NL/09** | **Tree:** *Pinus roxburghii, Quercus oblongata, Q. glauca, Lyonia ovalifolia, Myrica esculenta, Syzygium cumini, Dendrocalamus strictus, Dendrocalamus hamiltonii, Prunus cerasoides,Cinnamomum tamala, Bambusa* spp., *Holoptelea integrifolia , Ficus benghalensis, Ficus racemosa, Ficus rumphii, Albizia* spp., *Phyllanthus* emblica, *Diospyros montana, Pistacia chinensis subsp. integerrima,Bauhinia variegata, Grewia optiva, Pyrus pashia, Azadirachta indica, Mallotus philippensis, Aegle marmelos,* etc.<br>**Shrubs:** *Desmodium elegans, Desmodium triquetrum, Trifolium repens, T. pretense, Malva* spp., *Scrophularia* spp., *Parietaria debilis, Tephrosia hamiltonii, Justicia adhatoda, Myrsine africana,Murraya koenigii, Murraya paniculata , Ricinus communis, Tinospora sinensis , Woodfordia fruiticosa, Isodon rugosus , Maesa indica, Nyctanthes arbortristris, Vitex negundo, Carissa spinarum, Inula* spp., *Jasminum* spp., *Berberis lycium, Berberis aristata, Flemingia semialata, Rosa* spp., *Rubus* spp., |

| | |
|---|---|
| | *Thysanolaena latifolia*, etc.<br>**Grasses/Forbs:** *Heteropogon contortus, Chrysopogon fulvus, Chrysopogon serrulatus, Boerhavia diffusa, Festuca pratensis, Festuca arundinacea***,** *Poa pratensis, Erianthus filifolius, Erianthus rufipilus, Agrostis gigantea, Agropyron* spp.*, Phleum pratense***,** *Themeda anathera,Arundo donax, Cymbopogon martini, C. jwarancusa,Phragmites karka, Bothriochloa pertusa, Bothriochloa intermedia, Eulaliopsis binata, Calamograstis* spp., etc. |
| **SL/HP/NL/10** | **Tree:** *Quercus oblongata, Q. glauca, Lyonia ovalifolia, Holoptelea integrifolia , Boehmeria rugulosa, Ficus benghalensis, Ficus racemosa, Pistacia chinensis subsp. Integerrima, Ficus rumphii, Albizia* spp.*, Alstonia scholaris, Cinnamomum tamala, Phyllanthus* emblica*, Bauhinia variegata, Grewia optiva, Pyrus pashia, Toona ciliata, Syzygium cumini, Morus alba, Punica granatum, Terminali*a spp.*, Symplocos paniculata*, etc.<br>**Shrubs:** *Rosa moschata, Debregeasia saeneb , Elaeagnus conferta, Zanthoxylum armatum, Trema politoria, Berberis lycium, Berberis aristata, Ziziphus* spp.*, Carissa spinarum, Murraya koenigii, Desmodium gangeticum, Tephrosia hamiltonii, Justicia adhatoda, Murraya paniculata , Ricinus communis, Tinospora sinensis , Woodfordia fruiticosa, Maesa indica, Nyctanthes arbortristris, Vitex negundo, Inula* spp.*, Thysanolaena latifolia,*etc.<br>**Grasses/Forbs:** *Heteropogon contortus, Chrysopogon fulvus, Chrysopogon serrulatus, Boerhavia diffusa,Parietaria debilis, Crotalaria* spp.*, Strobilanthus* spp.*, Festuca pratensis, Festuca arundinacea***,** *Poa pratensis, Saccharum filifolium , Erianthus rufipilus, Agrostis gigantea, Agropyron* Spp.*, Phleum pratense***,** *Themeda anathera, Arundo donax, Cymbopogon martini, Phragmites karka, Bothriochloa pertusa, Bothriochloa intermedia, Eulaliopsis binata, Calamograstis* spp., etc. |
| **SL/HP/NL/11** | **Trees:** *Dalbergia sissoo, Senegalia catechu, Adina cordifolia, Aegle marmelos, Terminalia bellirica, Terminalia chebula, Terminalia arjuna, Mallotus philippensis, Syzygium cumini, S. cumini, Oroxylum indicum, Sapindus mukorossi, Dendrocalamus strictus, Dendrocalamus hamiltonii, Bambusa* spp.*, Holoptelea integrifolia , Ficus benghalensis, Ficus racemosa, Ficus rumphii, Albizia lebbeck, Albizia procera, Celtis australis, Cinnamomum tamala,Myrica esculenta, Pyrus pashia, Alstonia scholaris, Phyllanthus* emblica*, Diospyros montana, Bauhinia variegata, Grewia optiva, Azadirachta indica, Morus alba,*etc.<br>**Shrubs:** *Rosa moschata, Debregeasia saeneb , Zanthoxylum* |

| | |
|---|---|
| | *armatum, Berberis lycium, Ziziphus* spp., *Carissa spinarum, Desmodium gangeticum, Tephrosia hamiltonii, Justicia adhatoda, Murraya koenigii, Murraya paniculata , Ricinus communis, Tinospora sinensis , Woodfordia fruiticosa, Maesa indica, Nyctanthes arbortristris, Thysanolaena latifolia, Vitex negundo, Crotalaria*spp., *scrophularia* spp., *Euphorbia* spp., *Strobilanthus* spp., Vigna spp., etc.<br>**Grasses/Forbs:** *Heteropogon contortus, Chrysopogon fulvus, Chrysopogon serrulatus, Boerhavia diffusa, Festuca pratensis, Festuca arundinacea**,** Poa pratensis, Saccharum filifolium , Erianthus rufipilus, Agrostis gigantea, Agrostis* spp., *Phleum pratense**,** Themeda anathera, Arundo donax, Cymbopogon martini, Cyperus*spp., *Phragmites karka, Bothriochloa pertusa, Bothriochloa intermedia, Eulaliopsis binata, Calamograstis* spp., *Carex* spp., etc. |
| **SL/HP/NL/12** | **Tree:** *Dalbergia sissoo, Senegalia catechu, Toona ciliata, Adina cordifolia, Aegle marmelos, Terminalia bellirica, Terminalia chebula, Terminalia arjuna, Mallotus philippensis, Syzygium cumini, Oroxylum indicum, Sapindus mukorossi, Punica granatum, Dendrocalamus strictus, Dendrocalamus hamiltonii, Bambusa* spp., *Holoptelea integrifolia , Ficus benghalensis, Ficus racemosa, Ficus rumphii, Albizia* spp., *Celtis australis, Litsea glutinosa , Pyrus pashia, Alstonia scholaris, Phyllanthus* emblica, *Diospyros montana, Bauhinia variegata, Grewia optiva*, *G. elastica*, etc.<br>**Grasses, sedges and Forbs:** *Arundinella nepalensis*, *Apluda mutica*, *Chrysopogon fulvus, Parietaria debilis*, *Crotalaria* spp., *Carex* spp., *Cyperus* spp., *Boerhavia diffusa, Heteropogon contortus, Trifolium repens, Eragrostis nigra, Deschamsia* spp., *Panicum maximum, Phleum pratense*, *Cymbopogon* spp., *Arundo donax, Phragmites karka, Themeda arundinacea, Eulaliopsis binata, Dichanthium annulatum, Sporobolus diandrus, Hierochloe laxa*, etc. |

| | |
|---|---|
| **SL/HP/NL/13** | **Trees:** *Toona ciliata, Dalbergia sissoo, Senegalia catechu, Adina cordifolia, Aegle marmelos, Terminalia bellirica, Terminalia chebula, Terminalia arjuna, Mallotus philippensis, Syzygium cumini, Sapindus mukorossi, Dendrocalamus* spp., *Punica granatum, Bambusa* spp., *Holoptelea integrifolia , Albizia* spp., *Celtis australis, Pyrus pashia, Alstonia scholaris, Phyllanthus* emblica, *Diospyros montana, Bauhinia variegata, Morus alba, Grewia optiva*, etc.<br>**Grasses/Sedges/Forbs:** *Arundinella nepalensis, Apluda mutica, Chrysopogon fulvus, Boerhavia diffusa, Carex* spp., *Cyperus* spp., *Malvastrum* spp., *Parietariadebilis, Crotalaria*spp., *Blumea* spp., *Heteropogon contortus, Trifolium repens, Eragrostis nigra, Deschamsia* spp., *Panicum maximum, Phleum pratense, Cymbopogon citratus, Arundo donax, PhrIagmites karka, Themeda arundinacea, Eulaliopsis binata, Dichanthium annulatum, Sporobolus diandrus, Thysanolaena latifolia, Hierochloe laxa*, etc. |
| **SL/HP/NL/14** | **No Plantation proposed** |
| **SL/HP/NL/15** | **No Plantation proposed** |
| **SL/HP/NL/16** | **Plantation Proposed are one of the above models** |

**Table 1.20 Cost norms and details of work of Cold Desert Greening Model (in Tribal area) (SL/HP/NL/01)**

| Year | Item | Details of work | Amount (Rs/ha) | Man days |
|---|---|---|---|---|
| | Number of Plants (No.) | Plants- 800, Shrubs - 400 | | |
| 1st Year | Advance Work Labour Cost (Rs.) | Establishment of nursery | 1400 | 4 |
| 2nd Year | Advance Work Labour Cost (Rs.) | Establishment of I$^{st}$ year maintenance of plants | 13,351 | 41 |
| 3rd Year | Advance Work Labour Cost (Rs.) | Maintenance of nursery of I$^{st}$ and II$^{nd}$ year maintenance of plant nursery | 17,968 | 50 |
| 4th Year | Advance Work Labour Cost (Rs.) | Nursery 1$^{st}$ of 1$^{st}$, 2$^{nd}$ and 3$^{rd}$ year maintenance of trees nursery | 47,665 | 124 |
| 4th Year | Advance Work Material (Rs.) | Cost of seed, Farm Yard Manure (FYM), barbed wire and reinforced cement concrete (RCC) poles | 52,000 | 0 |
| 4th Year | Advance Work Labour Cost (Rs.) | Site preparation- Site preparation including survey and demarcation, bush cutting in strips , collection of debris, burning of debris, preparation inspection path, carriage of fence RCC poleand RCC poles, digging of holes for fixing poles, stretching and fixing of barbed-wire | 75,775 | 198 |
| 5th Year | Advance Work Labour Cost (Rs.) | Maintenance of nursery for creation and maitebnance works in 1$^{st}$ and 2$^{nd}$ year | 29,248 | 71 |

| | | | | |
|---|---|---|---|---|
| 5th Year | Creation (Rs.) | Carriage of plants, lay out of pits and pitting and planting of plants and preparation of strips including sowing in strips, weeding and mulching | 70,055 | 171 |
| **Total Establishment Cost (Rs.)** | | | **3,07,462** | **659** |
| **MAINTENANCE** | | | | |
| 6th Year | Maintenance Cost - I Year i/c Material (Rs.) | Nursery maintenance, material cost, planting cost and other maintenance works | 36,950 | 82 |
| 7th Year | Maintenance Cost - II Year (Rs.) | Nursery maintenance, material cost, planting cost and other maintenance works | 26,546 | 55 |
| 8th Year | Maintenance Cost - III Year (Rs.) | Nursery maintenance, material cost, planting cost and other maintenance works | 15,820 | 30 |
| **Total Maintenance Cost (Rs.)** | | | **79,316** | **167** |
| **Total Cost of Plantation** | | | **3,86,978** | **826** |

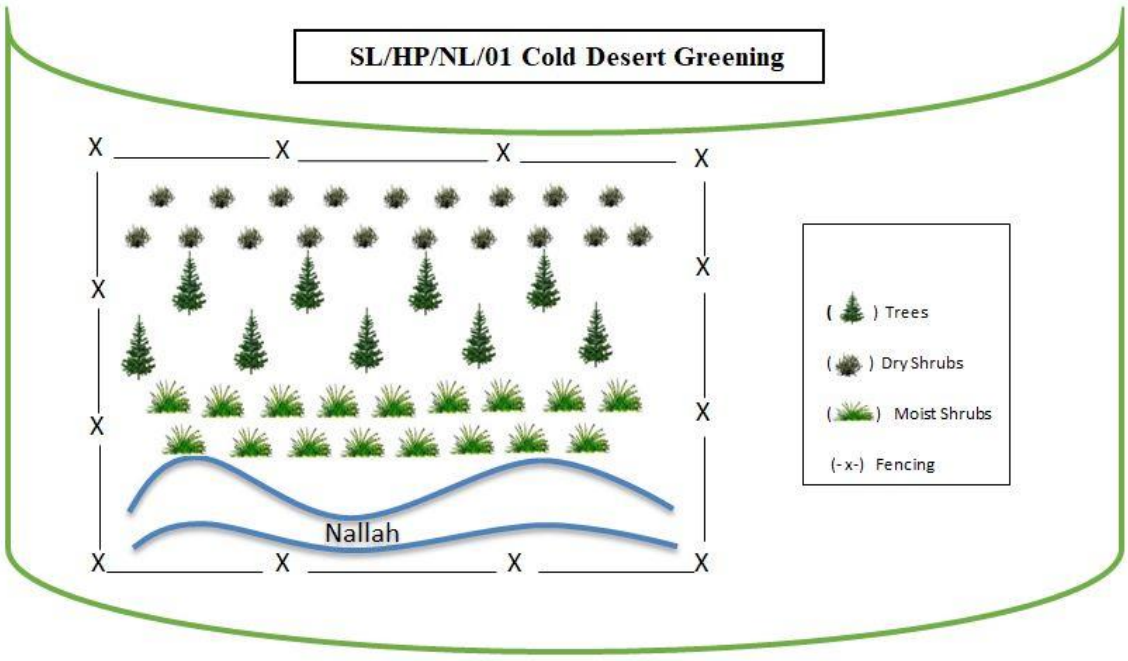



**Fig.1. 17 Plantation Design of Cold Desert Greening Model SL/HP/NL/01**

**Table 1.21 Cost norms and details of work of Cold Desert Conservation Model (SL/ HP/ NL/ 02)**

| Year | Item | Details of work | Amount (Rs)/ ha | Man days |
|---|---|---|---|---|
| | Number of Plants (No.) | Shrubs- 800, Herbs- 2400 and 600 patches of Grasses | | |
| 1st Year | Advance Work Labour Cost | Establishment of nursery | 16,916 | 54 |

| | | | | |
|---|---|---|---|---|
| 2nd Year | Advance Work Labour Cost | Maintenance of nursery + establishment of I$^{st}$ year maintenance | 49,492 | 148 |
| 2nd Year | Advance Work Material | Cost of seeds, Farm Yard Manure (FYM), barbed wire and reinforced cement concrete (RCC) poles | 58,000 | 0 |
| 2nd Year | Advance Work Labour Cost | Site preparation- Site preparation including survey and demarcation , bush cutting in strips, collection of debris, burning of debris, preparation inspection path, carriage of fence RCC pole and RCC poles, digging of holes for fixing poles, stretching and fixing of barbed-wire | 66,185 | 198 |
| 3rd Year | Advance Work Labour Cost | Maintenance of nursery for creation and maitebnance works in 1$^{st}$ and 2$^{nd}$ year | 38,623 | 108 |
| 3rd Year | Creation | Carriage of plants, lay out of pits and patches, pitting and planting of plants, patches and planting of herbs, preparation of strips including sowing in strips, weeding and mulching | 66,765 | 187 |
| **Total Establishment Cost** | | | **2,95,981** | **695** |
| **MAINTENANCE** | | | | |
| 4th Year | Maintenance Cost - I Year i/c Material | Nursery maintenance, material cost, planting cost and other maintenance works | 50,566 | 126 |
| 5th Year | Maintenance Cost - II Year | Nursery maintenance, material cost, planting cost and other maintenance works | 38,328 | 89 |
| 6th Year | Maintenance Cost - III Year | Nursery maintenance, material cost, planting cost and other maintenance works | 25,792 | 56 |
| 7th Year | Maintenance Cost - IV Year | Maintenance cost of fencing | 728 | 2 |
| **Total Maintenance Cost** | | | **1,15,414** | **273** |
| **Total cost of Plantation** | | | **4,11,394** | **968** |

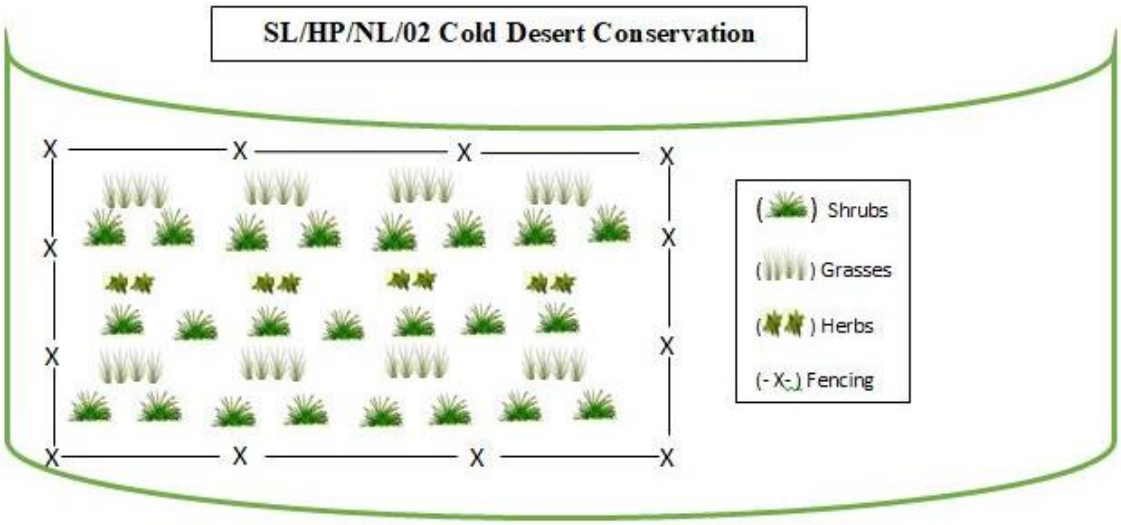



**Fig.1. 18 Plantation Design of Cold Desert Conservation Model SL/HP/NL/02**

**Table 1.22 Cost norms and details of work of Alpine Conservation Model (SL/HP/ NL/03)**

| Year | Item | Details of work | Amount (Rs)/ ha | Man days |
|---|---|---|---|---|
| | Number of Plants (No.) | 2400 Herbs + 600 patch of Grasses | | |
| 1st Year | Advance Work Labour Cost | Establishment of nursery | 15,000 | 48 |
| 2nd Year | Advance Work Labour Cost | Maintenanace of nursery+ establishment of Ist year maintenance | 12,000 | 36 |
| 2nd Year | Advance Work Material | Cost of seeds, Farm Yard Manure (FYM), barbed wire and Reinforced Cement Concrete (RCC) poles | 55,600 | 0 |
| 2nd Year | Advance Work Labour Cost | Site preparation- Site preparation including survey and demarcation, bush cutting in strips, collection of debris, burning of debris, preparation inspection path, carriage of fence RCC pole and RCC poles, digging of holes for fixing poles, stretching and fixing of barbed-wire | 66,185 | 198 |
| 3rd Year | Advance Work Labour Cost | Maintenance of nursery for creation and maintenance works in 1st and 2nd years | 10,200 | 29 |
| 3rd Year | Creation | Carriage of plants, lay out of pits and patches, pitting and planting of plants, patches and planting of herbs, preparation of strips including sowing in strips, weeding and mulching | 23,686 | 66 |
| **Total Establishment Cost** | | | **1,82,671** | **377** |
| **MAINTENANCE** | | | | |
| 4th Year | Maintenance Cost - I Year i/c Material | Nursery maintenance, material cost, planting cost and other maintenance works | 24,132 | 58 |

| | | | | |
|---|---|---|---|---|
| 5th Year | Maintenance Cost - II Year | Nursery maintenance, material cost, planting cost and other maintenance works | 18,906 | 43 |
| 6th Year | Maintenance Cost - III Year | Nursery maintenance, material cost, planting cost and other maintenance works | 14,337 | 30 |
| 7th Year | Maintenance Cost - IV Year | Maintenance cost of fencing | 728 | 2 |
| **Total Maintenance Cost** | | | **58,103** | **133** |
| **Total cost of Plantation** | | | **2,40,775** | **510** |

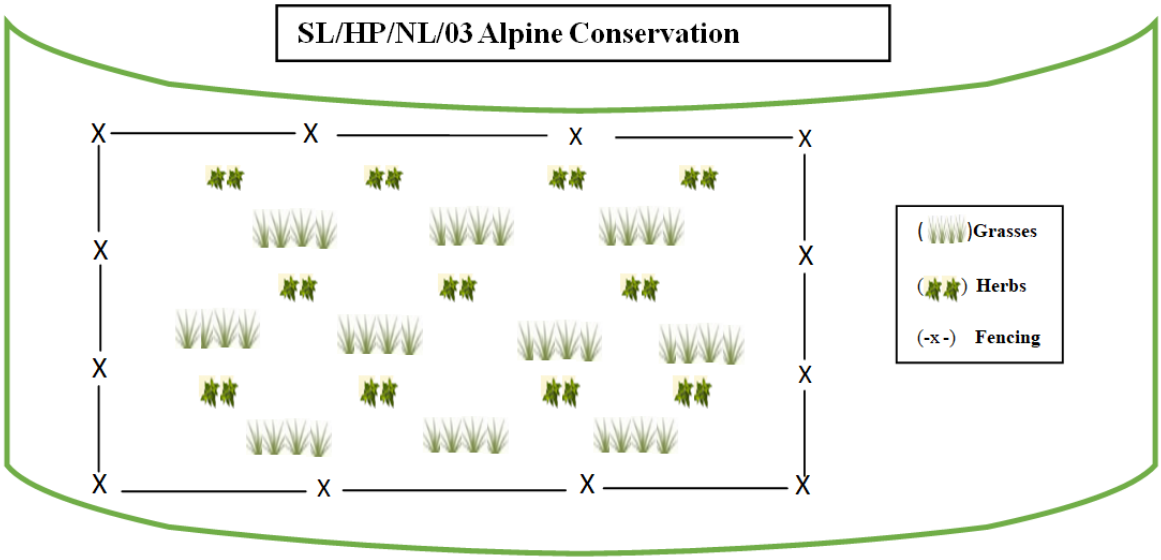



**Fig.1. 19 Plantation Design of Alpine Conservation Model (SL/HP/NL/03)**

**Table 1.23 Cost norms and details of work of Sub Alpine Enrichment Model (SL/ HP/ NL/04)**

| Year | Item | Details of work | Amount (Rs/ha) | Man days |
|---|---|---|---|---|
| | Number of Plants (No.) | 800 Herbs + Plants 200 | | |
| 1st Year | Advance Work Labour Cost (Rs.) | Establishment of nursery | 500 | 2 |
| 2nd Year | Advance Work Labour Cost (Rs.) | Establishment of I$^{st}$ year maintenance of plants | 4,682 | 14 |
| 3rd Year | Advance Work Labour Cost (Rs.) | Maintenance of nursery of herbs + I$^{st}$ and II$^{nd}$ years maintenance of plant nursery | 13,312 | 37 |
| 4th Year | Advance Work Labour Cost (Rs.) | Nursery 1$^{st}$ of herbs + 1$^{st}$, 2$^{nd}$ and 3$^{rd}$ years maintenance of trees nursery | 22,234 | 12 |
| 4th Year | Advance Work Material (Rs.) | Cost of seed, Farm Yard Manure (FYM), barbed wire and reinforced cement concrete (RCC) poles | 51,400 | 0 |

| | | | | |
|---|---|---|---|---|
| 4th Year | Advance Work Labour Cost (Rs.) | Site preparation- Site preparation including survey and demarcation, bush cutting in strips, collection of debris, burning of debris, preparation inspection path, carriage of fence RCC pole and RCC poles, digging of holes for fixing poles, stretching and fixing of barbed-wire | 75,775 | 198 |
| 5th Year | Advance Work Labour Cost (Rs.) | Maintenance of nursery for creation and maintenance works in 1st and 2nd years | 16,006 | 39 |
| 5th Year | Creation (Rs.) | Carriage of plants, lay out of pits and patches, pitting and planting of plants, patches and planting of herbs, preparation of strips including sowing in strips, weeding and mulching | 7,252 | 18 |
| **Total Establishment Cost (Rs.)** | | | **1,91,161** | **320** |
| **MAINTENANCE** | | | | |
| 6th Year | Maintenance Cost - I Year i/c Material (Rs.) | Nursery maintenance, material cost, planting cost and other maintenance works | 14,798 | 32 |
| 7th Year | Maintenance Cost - II Year (Rs.) | Nursery maintenance, material cost, planting cost and other maintenance works | 9,659 | 19 |
| 8th Year | Maintenance Cost - III Year (Rs.) | Nursery maintenance, material cost, planting cost and other maintenance works | 2,917 | 5 |
| **Total Maintenance Cost (Rs.)** | | | **27,374** | **56** |
| **Total Cost of Plantation** | | | **2,18,535** | **376** |

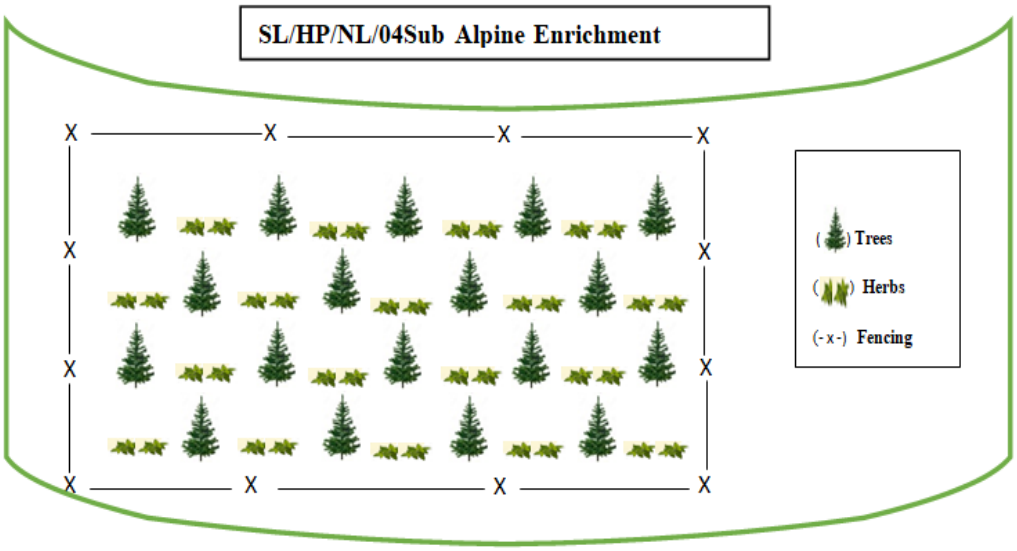



**Fig.1. 20 Plantation Design of Sub-Alpine Enrichment Model SL/HP/NL/04**

**Table 1.24 Cost norms and details of work of Dry Temperate Conifer Forest Enrichment Model (SL /HP /NL /05)**

| Year | Item | Details of work | Amount (Rs/ha) | Man days |
|---|---|---|---|---|
| | Number of Plants (No.) | Plants- 400, Herbs- 1600 | | |
| 1st Year | Advance Work Labour Cost (Rs.) | Establishment of nursery | 1000 | 3 |
| 2nd Year | Advance Work Labour Cost (Rs.) | Establishment of I$^{st}$ year maintenance of plants | 9,364 | 28 |
| 3rd Year | Advance Work Labour Cost (Rs.) | Maintenance of nursery of herbs + I$^{st}$ and II$^{nd}$ year maintenance of plant nursery | 26,624 | 74 |
| 4th Year | Advance Work Labour Cost (Rs.) | Nursery 1$^{st}$ of herbs + 1$^{st}$, 2$^{nd}$ and 3$^{rd}$ year maintenance of trees nursery | 44,468 | 24 |
| 4th Year | Advance Work Material (Rs.) | Cost of seeds, Farm Yard Manure (FYM), barbed wire and Reinforced Cement Concrete (RCC) poles | 51,400 | 0 |
| 4th Year | Advance Work Labour Cost (Rs.) | Site preparation- Site preparation including survey and demarcation, bush cutting in strips, collection of debris, burning of debris, preparation inspection path, carriage of fence RCC pole and RCC poles, digging of holes for fixing poles, stretching and fixing of barbed-wire | 75,775 | 198 |
| 5th Year | Advance Work Labour Cost (Rs.) | Maintenance of nursery for creation and maintenance works in 1$^{st}$ and 2$^{nd}$ year | 32,012 | 78 |
| 5th Year | Creation (Rs.) | Carriage of plants, lay out of pits and patches, pitting and planting of plants, patches and planting of herbs, preparation of strips including sowing in strips, weeding and mulching | 43,696 | 107 |
| **Total Establishment Cost (Rs.)** | | | **2,84,339** | **512** |
| **MAINTENANCE** | | | | |
| 6th Year | Maintenance Cost - I Year i/c Material (Rs.) | Nursery maintenance, material cost, planting cost and other maintenance works | 36,779 | 82 |
| 7th Year | Maintenance Cost - II Year (Rs.) | Nursery maintenance, material cost, planting cost and other maintenance works | 25,509 | 53 |

| | | | | |
|---|---|---|---|---|
| 8th Year | Maintenance Cost - III Year (Rs.) | Nursery maintenance, material cost, planting cost and other maintenance works | 10,833 | 22 |
| **Total Maintenance Cost (Rs.)** | | | **73,121** | **157** |
| **Total Cost of Plantation** | | | **3,57,460** | **670** |

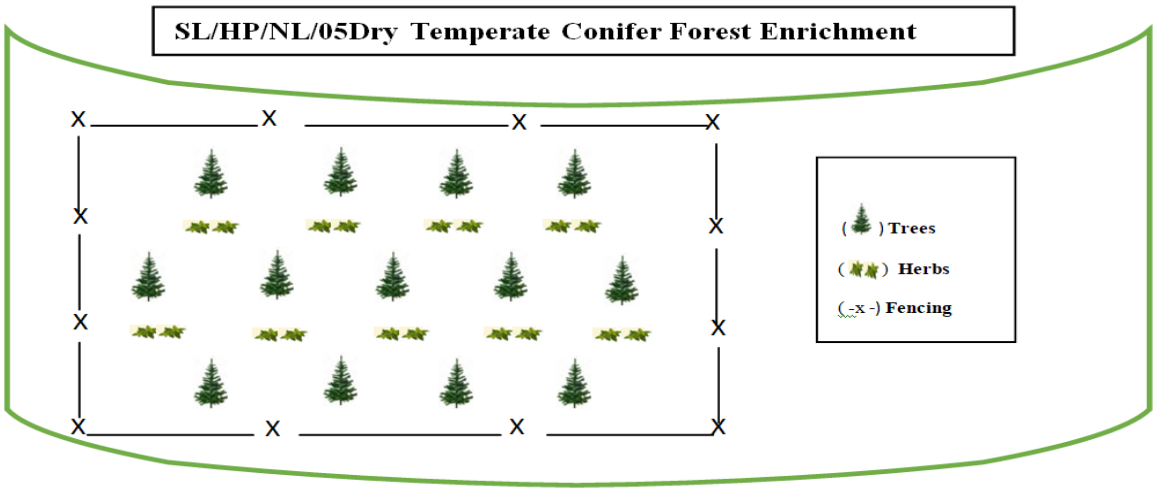



**Fig.1. 21 Plantation Design of Dry Temperate Conifer Forest Enrichment Model SL/HP/NL/05**

**Table 1.25 Cost norms and details of work of Temperate Conifer Forest Model (SL/HP/NL/06)**

| Year | Item | Details of work | Amount(Rs/ ha) | Man days |
|---|---|---|---|---|
| | Number of Plants (No.) | Plants- 300 No., Bamboo-200, Shrubs-300 no., Herbs- 1200 no (300 no. patches) | | |
| 1st Year | Advance Work Labour Cost (Rs.) | Establishment of nursery | 10,000 | 40 |
| 2nd Year | Advance Work Labour Cost (Rs.) | Maintenance of nursery + establishmement of I st year Maintenance | 38,879 | 145 |
| 2nd Year | Advance Work Material (Rs.) | Cost of seeds, Farm Yard Manure (FYM), barbed wire and Reinforced Cement Concrete (RCC) poles | 52,000 | 0 |
| 2nd Year | Advance Work Labour Cost (Rs.) | Site preparation- Site preparation including survey and demarcation, bush cutting in strips, collection of debris, burning of debris, preparation inspection path, carriage of fence RCC pole and RCC poles, digging of holes for fixing poles, | 54,910 | 205 |

| | | | | |
|---|---|---|---|---|
| | | stretching and fixing of barbed-wire in 4 strands | | |
| 3rd Year | Advance Work Labour Cost (Rs.) | Maintenance of nursery for creation and maintenance works in 1st and 2nd years | 28,603 | 100 |
| 3rd Year | Creation (Rs.) | Carriage of plants, lay out of pits and patches, pitting and planting of plants, patches and planting of herbs, preparation of strips including sowing in strips, weeding and mulching | 45,157 | 158 |
| **Total Establishment Cost (Rs.)** | | | **2,29,549** | **648** |
| **MAINTENANCE** | | | | |
| 4th Year | Maintenance Cost - I Year i/c Material (Rs.) | Nursery maintenance, material cost, planting cost and other maintenance works | 37,034 | 118 |
| 5th Year | Maintenance Cost - II Year (Rs.) | Nursery maintenance, material cost, planting cost and other maintenance works | 20,711 | 61 |
| 6th Year | Maintenance Cost - III Year (Rs.) | Nursery maintenance, material cost, planting cost and other maintenance works | 16,107 | 44 |
| 7th Year | Maintenance Cost - IV Year (Rs.) | Maintenance Cost of fencing | 582 | 2 |
| **Total Maintenance Cost (Rs.)** | | | **74,434** | **225** |
| **Total cost of Plantation** | | | **3,03,985** | **873** |

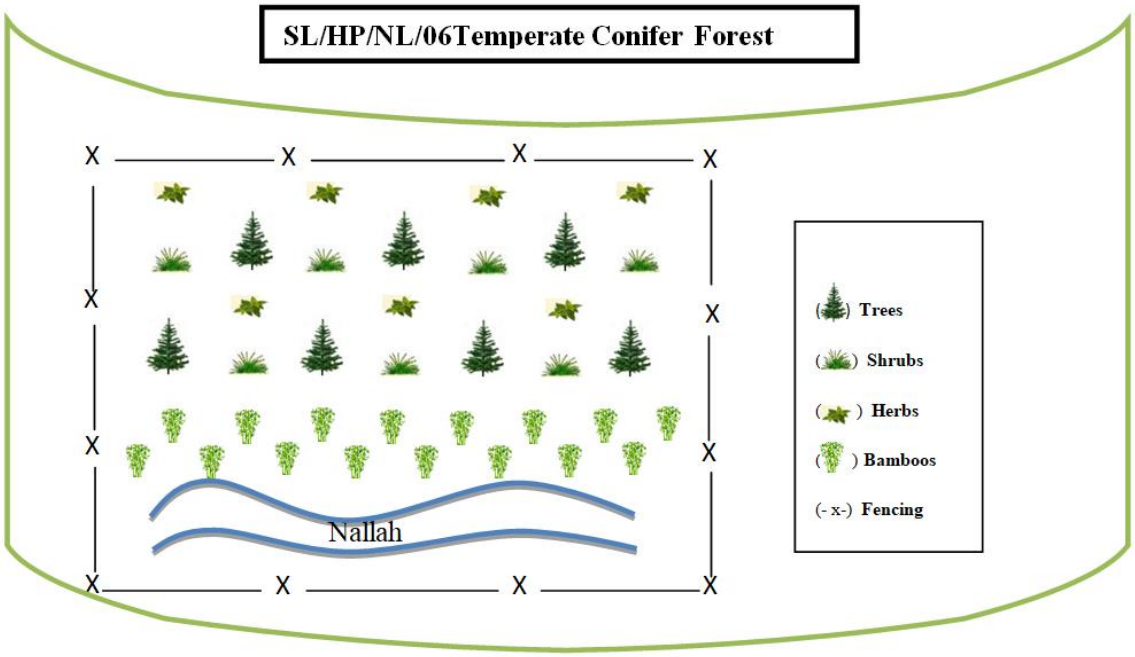



**Fig.1. 22 Plantation Design of Temperate Conifer Forest Enrichment Model SL/HP/NL/06**

**Table 1.26 Cost norms and details of work of Temperate Mixed Forest Model (SL/HP/NL/07)**

| Year | Item | Details of work | Amount (Rs/ ha) | Man days |
|---|---|---|---|---|
| | Number of Plants (No.) | Plants- 300 No., Bamboo-200, Shrubs-300 no., Herbs- 1200 no (300 no. patches) | | |
| 1st Year | Advance Work Labour Cost (Rs.) | Establishment of nursery | 14,491 | 58 |
| 2nd Year | Advance Work Labour Cost (Rs.) | Maintenance of nursery+ establishment of I st year maintenance | 33,045 | 124 |
| 2nd Year | Advance Work Material (Rs.) | Cost of seeds, Farm Yard Manure (FYM), barbed wire and Reinforced Cement Concrete (RCC) poles | 52,000 | 0 |
| 2nd Year | Advance Work Labour Cost (Rs.) | Site preparation- Site preparation including survey and demarcation, bush cutting in strips, collection of debris, burning of debris, preparation inspection path, carriage of fence RCC pole and RCC poles, digging of holes for fixing poles, stretching and fixing of barbed-wire | 54,910 | 205 |
| 3rd Year | Advance Work Labour Cost (Rs.) | Maintenance of nursery for creation and maintenance works in 1st and 2nd years | 28,925 | 101 |

| | | | | |
|---|---|---|---|---|
| 3rd Year | Creation (Rs.) | Carriage of plants, lay out of pits and patches, pitting and planting of plants, patches and planting of herbs, preparation of strips including sowing in strips, weeding and mulching | 45,157 | 158 |
| **Total Establishment Cost (Rs.)** | | | **2,28,528** | **646** |
| **MAINTENANCE** | | | | |
| 4th Year | Maintenance Cost - I Year i/c Material (Rs.) | Nursery maintenance, material cost, planting cost and other maintenance works | 38,815 | 117 |
| 5th year | Maintenance Cost - II Year (Rs.) | Nursery maintenance, material cost, planting cost and other maintenance works | 20,711 | 61 |
| 6th Year | Maintenance Cost - III Year (Rs.) | Nursery maintenance, material cost, planting cost and other maintenance works | 16,107 | 44 |
| 7th Year | Maintenance Cost - IV Year (Rs.) | Maintenance cost of fencing | 582 | 2 |
| **Total Maintenance Cost (Rs.)** | | | **76,215** | **224** |
| **Total Cost of Plantation** | | | **3,02,743** | **870** |

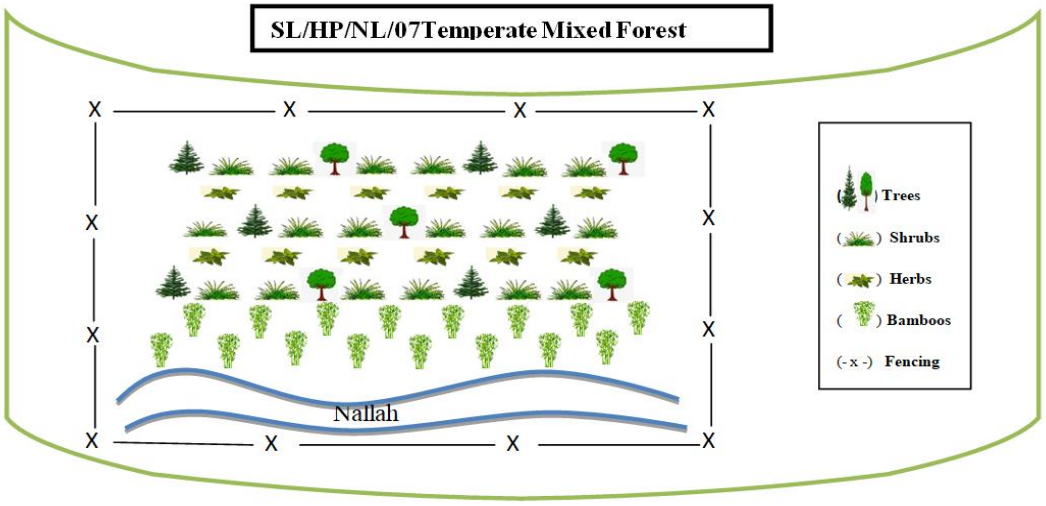



**Fig.1. 23 Plantation Design of Temperate Mixed Forest Model SL/HP/NL/07**

**Table 1.27 Cost norms and details of work of Pasture and Grazing Land Development Model (SL/HP/NL/08)**

| Year | Item | Details of work | Amount (Rs/ha) | Man days |
|---|---|---|---|---|
| | Number of Plants (No.) | Grasses-2000 no. patches | | |
| 1st Year | Advance Work Material (Rs.) | Cost of seeds, Farm Yard Manure (FYM), barbed wire and Reinforced Cement Concrete (RCC) poles | 66,400 | 0 |

| | | | | |
|---|---|---|---|---|
| 1st Year | Advance Work Labour Cost (Rs.) | Site preparation- Site preparation including survey and demarcation, bush cutting in strips, collection of debris, burning of debris, preparation inspection path, carriage of fence and RCC poles, digging of holes for fixing poles, stretching and fixing of barbed-wire | 54,910 | 205 |
| 2nd Year | Creation (Rs.) | Carriage of plants, lay out of pits and patches, pitting and planting of plants, patches and planting of herbs, preparation of strips including sowing in strips, weeding and mulching | 40,850 | 143 |
| **Total Establishment Cost (Rs.)** | | | **1,62,160** | **348** |
| **MAINTENANCE** | | | | |
| 3rd Year | Maintenance Cost - I Year i/c Material (Rs.) | Nursery maintenance, material cost, planting cost and other maintenance works | 27,994 | 67 |
| 4th Year | Maintenance Cost - II Year (Rs.) | Nursery maintenance, material cost, planting cost and other maintenance works | 20,711 | 61 |
| 5th Year | Maintenance Cost - III Year (Rs.) | Nursery maintenance, material cost, planting cost and other maintenance works | 16,107 | 44 |
| 6th Year | Maintenance Cost - IV Year (Rs.) | Maintenace Cost of fencing | 582 | 2 |
| **Total Maintenance Cost (Rs.)** | | | **76,215** | **224** |
| **Total Cost of Plantation** | | | **238375** | **572** |

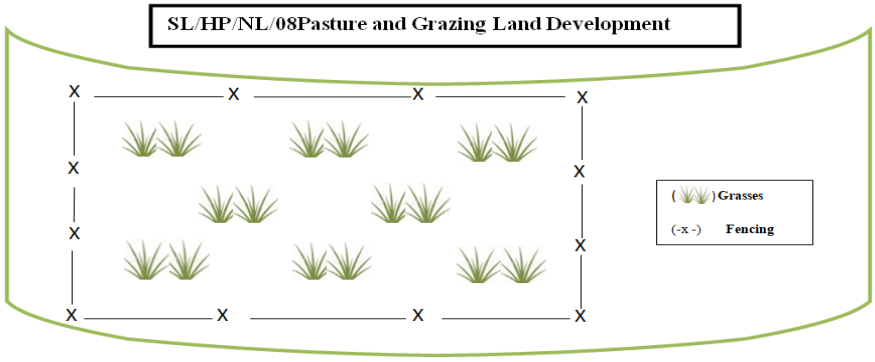



**Fig.1. 24 Plantation Design of Pasture and Grazing Land Development Model SL/HP/NL/08**

**Table 1.28 Cost norms and details of work of Himalayan Chir Pine Forest Model (SL/HP/NL/09)**

| Year | Item | Details of work | Amount | Man days |
|---|---|---|---|---|

| | | | (Rs/ha) | |
|---|---|---|---|---|
| | Number of Plants (No.) | Plants- 300 No., Bamboo-100, Shrubs-300 no., Grasses- 800 no. patches | | |
| 1st Year | Advance Work Labour Cost (Rs.) | Establishment of nursery | 8,397 | 34 |
| 2nd Year | Advance Work Labour Cost (Rs.) | Maintenance of nursery+ establishment of I st year maintenance | 11,861 | 44 |
| 2nd Year | Advance Work Material (Rs.) | Cost of seeds, Farm Yard Manure (FYM), barbed wire and Reinforced Cement Concrete (RCC) poles | 58,000 | 0 |
| 2nd Year | Advance Work Labour Cost (Rs.) | Site preparation- Site preparation including survey and demarcation, bush cutting in strips, collection of debris, burning of debris, preparation inspection path, carriage of fence and RCC poles, digging of holes for fixing poles, stretching and fixing of barbed-wire | 54,910 | 205 |
| 3rd Year | Advance Work Labour Cost (Rs.) | Maintenance of nursery for creation and maintenance works in 1st and 2nd years | 11,890 | 42 |
| 3rd Year | Creation (Rs.) | Carriage of plants, lay out of pits and patches, pitting and planting of plants, patches and planting of herbs, preparation of strips including sowing in strips, weeding and mulching | 52,006 | 182 |
| **Total Establishment Cost (Rs.)** | | | **1,97,064** | **507** |
| **MAINTENANCE** | | | | |
| 4th Year | Maintenance Cost - I Year i/c Material (Rs.) | Nursery maintenance, material cost, planting cost and other maintenance works | 39,786 | 118 |
| 5th Year | Maintenance Cost - II Year (Rs.) | Nursery maintenance, material cost, planting cost and other maintenance works | 31,875 | 90 |
| 6th Year | Maintenance Cost - III Year (Rs.) | Nursery maintenance, material cost, planting cost and other maintenance works | 26,144 | 70 |
| 7th Year | Maintenance Cost - IV Year (Rs.) | Maintenance cost of fencing | 8588 | 24 |
| **Total Maintenance cost (Rs.)** | | | **106,393** | **302** |
| **Total cost of Plantation** | | | **3,03,457** | **809** |

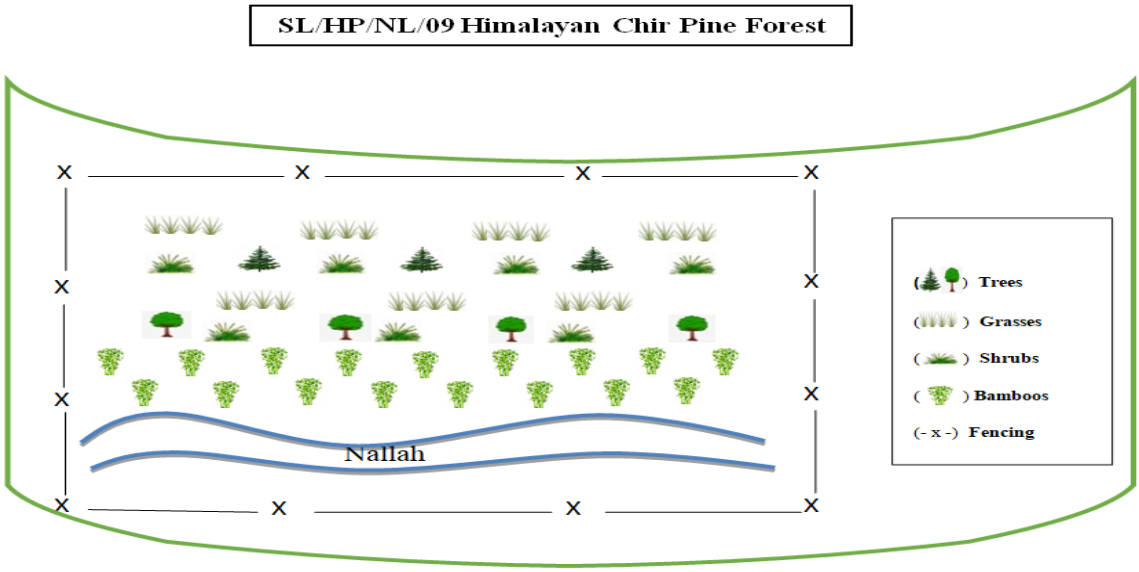



**Fig.1. 25 Plantation Design of Himalayan Chir Pine Forest Model SL/HP/NL/09**

**Table 1.29- Cost norms and details of work of Himalayan Mixed Forest Model (SL/HP/NL/10)**

| Year | Item | Details of work | Amount (Rs/ha) | Man days |
|---|---|---|---|---|
| | Number of Plants (No.) | Plants- 300 no., Shrubs-300 no., Grasses-200 no., patches | | |
| 1st Year | Advance Work Labour Cost (Rs.) | Establishment of nursery | 8,397 | 34 |
| 2nd Year | Advance Work Labour Cost (Rs.) | Maintenance of nursery+ establishment of Ist year maintenance | 11861 | 44 |
| 2nd Year | Advance Work Material (Rs.) | Cost of seeds, Farm Yard Manure (FYM), barbed wire and Reinforced Cement Concrete (RCC) poles | 52,600 | 0 |
| 2nd Year | Advance Work Labour Cost (Rs.) | Site preparation- Site preparation including survey and demarcation, bush cutting in strips, collection of debris, burning of debris, preparation inspection path, carriage of fence RCC pole and RCC poles, digging of holes for fixing poles, stretching and fixing of barbed-wire | 54,910 | 205 |
| 3rd Year | Advance Work Labour Cost (Rs.) | Maintenance of nursery for creation and maintenance works in 1st and 2nd years | 11,890 | 42 |
| 3rd Year | Creation (Rs.) | Carriage of plants, lay out of pits and patches, pitting and planting of plants, patches and planting of herbs, preparation of strips including sowing in strips, weeding and mulching | 39,849 | 139 |

| | | | | |
|---|---|---|---|---|
| **Total Establishment Cost (Rs.)** | | | **1,79,507** | **464** |
| **MAINTENANCE** | | | | |
| 4th Year | Maintenance Cost - I Year i/c Material (Rs.) | Nursery maintenance, material cost, planting cost and other maintenance works | 34,284 | 108 |
| 5th Year | Maintenance Cost - II Year (Rs.) | Nursery maintenance, material cost, planting cost and other maintenance works | 27,652 | 81 |
| 6th Year | Maintenance Cost - III Year (Rs.) | Nursery maintenance, material cost, planting cost and other maintenance works | 22,920 | 63 |
| 7th Year | Maintenance Cost - IV Year (Rs.) | Maintenance cost of fencing | 8,588 | 23 |
| **Total Maintenance cost (Rs.)** | | | **93,444** | **275** |
| **Total cost of Plantation** | | | **2,72,951** | **739** |

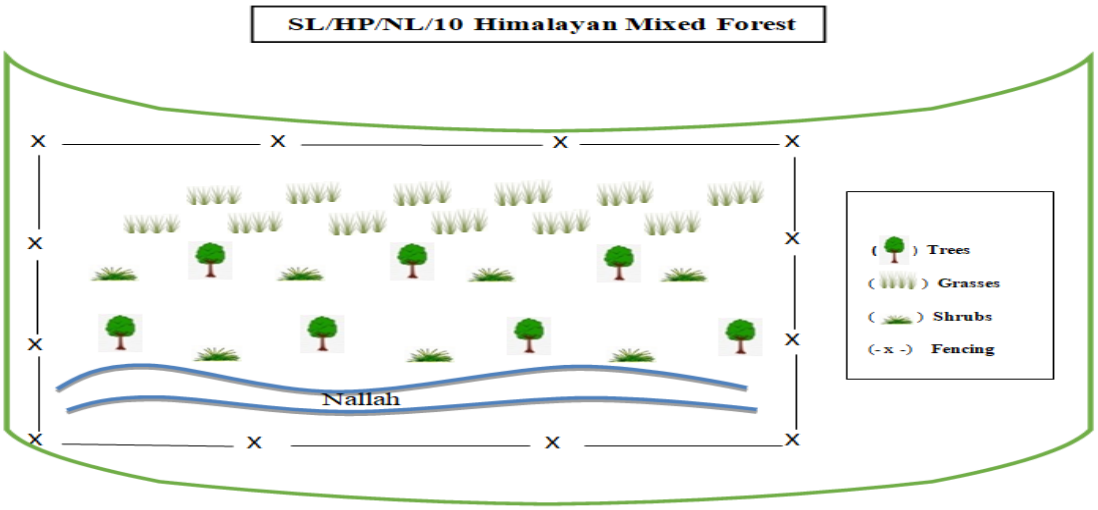



**Fig.1. 26 Plantation Design of Himalayan Mixed Forest Model SL/HP/NL/10**

**Table 1.30 Cost norms and details of work of Sub-Tropical Dry Deciduous Forest Model (SL/HP/NL/11)**

| Year | Item | Details of work | Amount(Rs/ha) | Man days |
|---|---|---|---|---|
| | Number of Plants (No.) | Plants- 300 No., shrubs-300 no., grasses- 200 no. patches | | |
| 1st Year | Advance Work Labour Cost (Rs.) | Establishment of nursery | 7,940 | 32 |
| 2nd Year | Advance Work Labour Cost (Rs.) | Maintenance of nursery+ establishment of 1st year maintenance | 11,657 | 44 |
| 2nd Year | Advance Work Material (Rs.) | Cost of seeds, Farm Yard Manure (FYM), barbed wire and Reinforced Cement Concrete (RCC) poles | 52,600 | 0 |

| | | | | |
|---|---|---|---|---|
| 2nd Year | Advance Work Labour Cost (Rs.) | Site preparation- Site preparation i/c survey and demarcation , bush cutting in strips, collection of debris, burning of debris, preparation inspection path, carriage of RCC poles, digging of holes for fixing poles, stretching and fixing of Barbed wire | 54,910 | 205 |
| 3rd Year | Advance Work Labour Cost (Rs.) | Maintenance of nursery for creation and maintenance work 1st and 2nd years | 9,544 | 33 |
| 3rd Year | Creation (Rs.) | Carriage of plants, lay out of pits and patches, pitting and planting of plants, patches and planting of herbs, preparation of strips including sowing in strips, weeding and mulching | 39,849 | 139 |
| **Total Establishment Cost (Rs.)** | | | **1,76,500** | **453** |
| **MAINTENANCE** | | | | |
| 4th Year | Maintenance Cost - I Year i/c Material (Rs.) | Nursery maintenance, material cost, planting cost and other maintenance works | 33,563 | 105 |
| 5th Year | Maintenance Cost - II Year (Rs.) | Nursery maintenance, material cost, planting cost and other maintenance works | 27,154 | 80 |
| 6th Year | Maintenance Cost - III Year (Rs.) | Nursery maintenance, material cost, planting cost and other maintenance works | 22,521 | 62 |
| 7th Year | Maintenance Cost - IV Year (Rs.) | Maintenance cost of fencing | 8,588 | 23 |
| **Total Maintenance cost (Rs.)** | | | **91,826** | **270** |
| **Total cost of Plantation** | | | **2,68,326** | **723** |

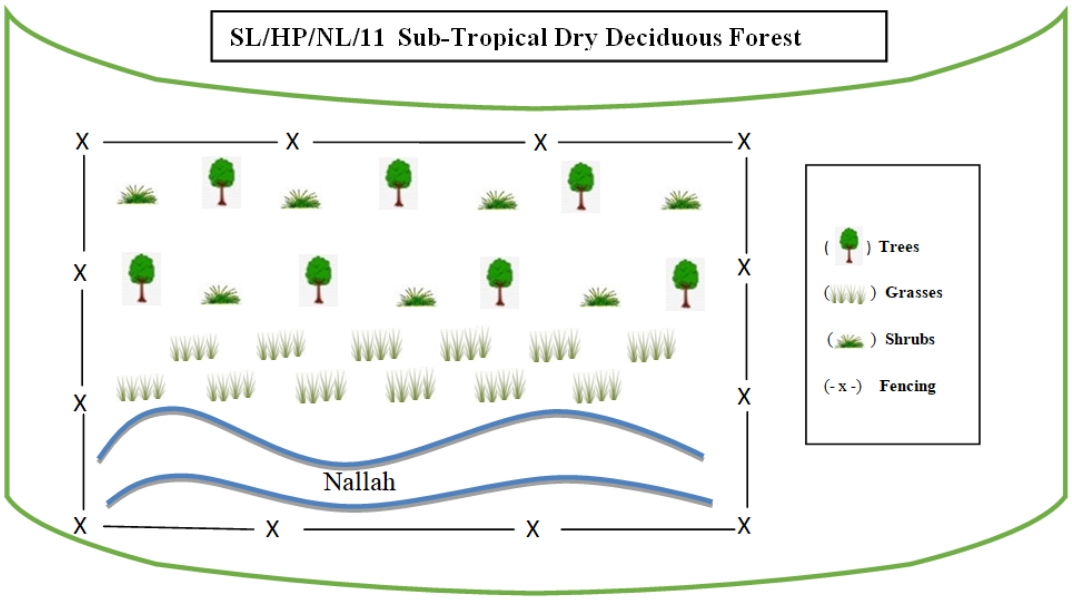



**Fig.1. 27 Plantation Design of Sub-Tropical Dry Deciduous Forest Model SL/HP/NL/11**

**Table 1.31 Cost norms and details of work of Eradication of *Lantana* (> 50%) Model (SL/HP/NL/12)**

| Year | Item | Details of work | Amount (Rs/ha) | Man days |
|---|---|---|---|---|
| | Number of Plants (No.) | Plants/ Bamboo- 600 No., Grasses- 600 no. patches | | |
| 1st Year | Advance Work Labour Cost | Establishment of nursery | 5,955 | 24 |
| 1st Year | Advance Work Labour Cost | *Lantana* eradication by cut root stock method and cleaning of *Lantana* (sprouts) and seedlings, one times (100%) and @15% one cut in I$^{st}$ year | 31,501 | 126 |
| 2nd Year | Advance Work Labour Cost | Maintenance of nursery+ establsihment of I$^{st}$ year maintenance | 8,743 | 33 |
| 2nd Year | Advance Work Material | Cost of seeds, Farm Yard Manure (FYM), barbed wire and Reinforced Cement Concrete (RCC) poles | 55,600 | 0 |
| 2nd Year | Advance Work Labour Cost | Site preparation, Site preparation including survey and demarcation, bush cutting in strips, collection of debris, burning of debris, preparation inspection path, carriage of fence and RCC poles, digging of holes for fixing poles, stretching and fixing of barbed-wire | 62,609 | 234 |
| 3rd Year | Advance Work Labour Cost | Maintenance of nursery for creation and maintenance works in 1$^{st}$ and 2$^{nd}$ years | 7,158 | 25 |

| | | | | |
|---|---|---|---|---|
| 3rd Year | Creation | Carriage of plants, lay out of pits and patches, pitting and planting of plants, patches and planting of herbs, preparation of strips including sowing in strips, weeding, mulching, *Lantana* eradication by Cut Root Stock method and cleaning of *Lantana* (sprouts) and seedlings in 2 times in 3rd year @ 15% of unit cost establishment. | 49,258 | 172 |
| **Total Establishment Cost** | | | **2,20,824** | **614** |
| **MAINTENANCE** | | | | |
| 4th Year | Maintenance Cost - I Year i/c Material | Nursery maintenance, material cost, planting cost and other maint works, clearing of fire line along fencing, *Lantana* removal by cut root stock method and cleaning of *Lantana* (sprouts) and seedlings in 2 times in 4th year @ 15% of unit cost establishment. | 41,842 | 128 |
| 5th Year | Maintenance Cost - II Year | Nursery maintenance, material cost, planting cost and other maintance works and clearing of fire line along fencing. | 26,028 | 74 |
| 6th Year | Maintenance Cost - III Year | Nursery maintenance, material cost, planting cost and other maintenance works, clearing of fire line along fencing. | 21,812 | 59 |
| 7th Year | Maintenance Cost - IV Year | Maintenance cost of fencing and clearing of fire line along fencing. | 8,588 | 23 |
| **Total Maintenance Cost** | | | **98,270** | **284** |
| **Total Cost of Plantation** | | | **3,19,094** | **898** |

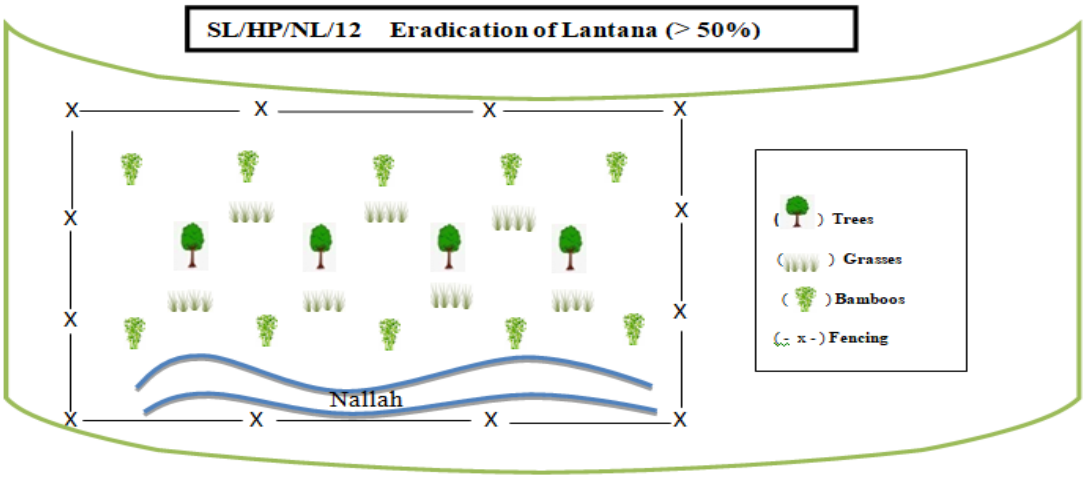



**Fig.1. 28 Plantation Design of Eradication of *Lantana* (> 50%) Model SL/HP/NL/12**

**Table 1.32 Cost norms and details of work of Control/ Removal of Invasive Species or <50% *Lantana* Model (SL/HP/NL/13)**

| Year | Item | Details of work | Amount (Rs/ha) | Man days |
|---|---|---|---|---|
| | Number of Plants (No.) | Plants/ Bamboo- 400 No., Grasses, sedges and forbs- 400 no. patches | | |
| 1st Year | Advance Work Labour Cost | Establishment of nursery | 3970 | 16 |
| 1st Year | Advance Work Labour Cost | *Lantana* removal by Cut Root Stock method and cleaning of *Lantana* (sprouts) and seedlings, one times (100%) and @15% one cut in I$^{st}$ year | 31501 | 126 |
| 2nd Year | Advance Work Labour Cost | Maintenance of nursery+ establishment of I$^{st}$ year maintenance | 5829 | 22 |
| 2nd Year | Advance Work Material | Cost of seeds, Farm Yard Manure (FYM), barbed wire and Reinforced Cement Concrete (RCC) poles | 54400 | 0 |
| 2nd Year | Advance Work Labour Cost | Site preparation includes *Lantana* removal by Cut Root Stock method and cleaning of *Lantana* (sprouts) and seedlings 3 times a year @15% in 2$^{nd}$ year @ 15% of unit cost establishment preparation inspection path, carriage of RCC poles, digging of holes for fixing poles, stretching and fixing of barbed wire | 62609 | 234 |
| 3rd Year | Advance Work Labour Cost | Maintenance of nursery for creation and maintenance works in 1$^{st}$ and 2$^{nd}$ year | 4772 | 17 |
| 3rd Year | Creation | Carriage of plants, lay out of pits and patches, pitting and planting of plants, patches and planting of herbs, preparation of strips including sowing in strips, weeding, mulching, *Lantana* removal by Cut Root Stock method and cleaning of *Lantana* (sprouts) and seedlings in 2 times in 3rd year @ 15% of unit cost establishment. | 49258 | 172 |
| **Total Establishment Cost** | | | **212339** | **587** |
| **MAINTENANCE** | | | | |
| 4th Year | Maintenance Cost - I Year i/c Material | Nursery maintenance, material cost, planting cost and other maintenance works, clearing of fire line along fencing, *Lantana* removal by cut root tock method and cleaning of *Lantana* (sprouts) and seedlings in 2 times in 4$^{th}$ year @ 15% of unit cost (estb) | 39675 | 123 |
| 5th Year | Maintenance Cost - II Year | Nursery maintenance, material cost, planting cost and other maintenance works and clearing of fire line along fencing | 25046 | 72 |

| | | | | |
|---|---|---|---|---|
| 6th Year | Maintenance Cost - III Year | Nursery maintenance, material cost, planting cost and other maintenance works clearing of fire line along fencing | 21372 | 58 |
| 7th Year | Maintenance Cost - IV Year | Maintenance cost of fencing and clearing of fire line along fencing | 8588 | 23 |
| **Total Maintenance Cost** | | | **94681** | **276** |
| **Total Cost of Plantation** | | | **307020** | **863** |

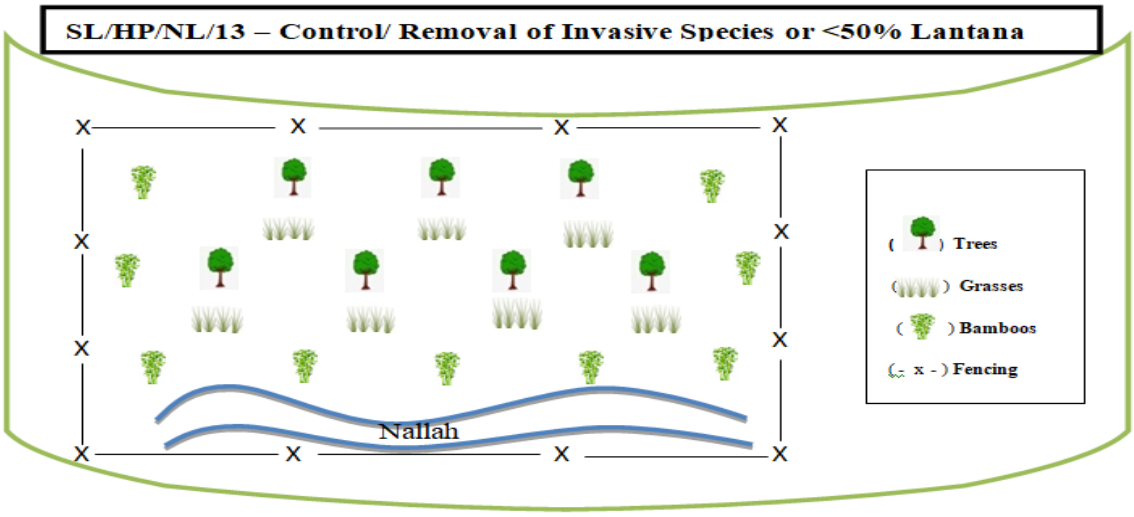



**Fig.1. 29 Plantation Design of Control/ Removal of Invasive Species or <50% *Lantana* Model SL/HP/NL/13**

**Table 1.33 Cost norms and details of work of Protection Model for Natural Regeneration Model (SL/HP/NL/14)**

| Year | Item | Details of work | Amount (Rs/ha) | Man days |
|---|---|---|---|---|
| | Number of Plants (No.) | Seeds Broadcasting - (2 kg for conifer and 15 kg for Broad leave) | | |
| 1st Year | I-Advance Work Material (Rs.) | Cost of seeds, Farm Yard Manure (FYM), Barbed wire and Reinforced Cement Concrete (RCC) poles | 50,400 | 0 |
| 1st Year | II-Advance Work Labour Cost (Rs.) | Site preparation, i/c survey and demarcation, debris collection and burning, preparation inspection path, carriage of RCC poles, digging of holes for Fixing poles, stretching and fixing of Barbed wire | 55,207 | 221 |
| 2nd Year | III-Creation (Rs.) | Cleaning and un-saleable thinning (non-commercial) in regeneration areas, climber cutting in the forests/ plantation area, broadcasting sowing in plantation/ regeneration area, preparation of fire lines 2.5 m wide, pruning of established saplings in | 22,694 | 85 |

| | | | | |
|---|---|---|---|---|
| | | plantation/regeneration 1/3 portion and burning/maintenance of lines 2.5 mt around the fencing | | |
| **Total Establishment Cost (Rs.)** | | | **1,28,301** | **306** |
| **MAINTENANCE** | | | | |
| 3rd Year | Maintenance Cost - I Year i/c Material (Rs.) | Cleaning and un-saleable thinning (non-commercial) in regeneration areas, climber cutting in the forests/ plantation area (50%), broadcasting sowing in plantation/regeneration area (50%), pruning of established saplings in plantation/ regeneration 1/12 portion and burning/ maintenance of lines 2.5 mt around the fencing (2 times) | 15,389 | 50 |
| 4th Year | Maintenance Cost - II Year (Rs.) | Cleaning and un-saleable thinning (non-commercial) in regeneration areas, climber cutting in the forests/ plantation area (30%), broadcasting sowing in plantation/regeneration area (30%), pruning of established saplings in plantation/ regeneration 1/15 portion and burning/maintenance of lines 2.5 mt around the fencing (2 times) | 14,216 | 44 |
| 5th Year | Maintenance Cost - III Year (Rs.) | Cleaning and un-saleable thinning (non-commercial) in regeneration areas, climber cutting in the forests/ plantation area (20%), broadcasting sowing in plantation/regeneration area (20%), pruning of established saplings in plantation/ regeneration 1/18 portion and burning/maintenance of lines 2.5 mt around the fencing (2 times) | 13,174 | 39 |
| 6th Year | Maintenance Cost - IV Year (Rs.) | Cleaning and un-saleable thinning (non-commercial) in regeneration areas, Climber cutting in the forests/ plantation area (15%), broadcasting sowing in plantation/regeneration area (15%) and burning/maintenance of lines 2.5 mt around the fencing (2 times) | 8,146 | 23 |
| **Total Maintenance Cost (Rs.)** | | | **50,925** | **156** |
| **Total Cost of Plantation** | | | **1,79,226** | **462** |

**Table 1.34 Cost norms and details of work of Fire Protection Model (SL/HP/NL/15)**

| Year | Item | Details of work | Amount (Rs) /ha | Man days |
|---|---|---|---|---|
| 1st Year | Establishment Cost | Cleaning of fire lines (2.5 meter width), control burning, engagement of fire watchers, constructions of ponds/ water harvesting structures, procurement of firefighting equipment's elide fire extinguishing balls and maintenance, awareness campaign and community awareness | 32,863 | 131 |
| **MAINTENANCE** | | | | |
| 2nd Year | Maintenance Cost - I Year i/c Material | Cleaning of fire lines (2.5 meter width), control burning, engagement of fire watchers, procurement of firefighting equipments / elide fire extinguishing balls and maintenance, awareness campaign and Community awareness | 24,462 | 91 |
| 3rd Year | Maintenance Cost - II Year | Cleaning of fire lines (2.5 meter width), control burning, engagement of fire watchers, procurement of firefighting equipments elide fire extinguishing balls and maintenance, awareness campaign and community awareness | 24,265 | 85 |
| 4th year | Maintenance Cost - III Year | Cleaning of fire lines (2.5 meter width), control burning, engagement of fire watchers, procurement of firefighting equipments / elide fire extinguishing balls and maintenance, awareness campaign and community awareness | 23,922 | 78 |
| 5th year | Maintenance Cost - IV Year (Rs.) | Cleaning of fire lines (2.5 meter width), control burning, engagement of fire watchers, procurement of firefighting equipments / elide fire extinguishing balls and maintenance, awareness campaign and community awareness | 23,411 | 71 |
| **Total Maintenance Cost (Rs.)** | | | **96,060** | **325** |
| **Total cost of model** | | | **1,28,923** | **456** |

**Table 1.35 Cost norms and details of Plantation by Eco-Task Force Work Model (SL/HP/NL/H/16)**

| Year | Item | Amount (Rs) |
|---|---|---|
| 1st Year | Establishment cost of Eco-Task force, cost of vehicle, equipment for plantation, fire fighting and protection | 7,00,00,000 |
| 2nd Year | Material cost of plantation (ha) and POL & Vehicle maintenance per year | 60,00,000 |
| 2nd Year | Salary and maintenance of Eco-Task Force per year | 3,00,00,000 |
| 3rd Year | Material, carriage and maintenance cost for plantation (ha) | 66,00,000 |
| 3rd Year | Salary and maintenance of Eco-Task Force Units | 3,15,00,000 |
| 4th Year | Material, carriage and maintenance cost for plantation (ha) | 72,00,000 |
| 4th Year | Salary and maintenance of Eco-Task Force Units | 3,20,00,000 |
| 5th Year | Material, carriage and maintenance cost for plantation (ha) | 80,00,000 |
| 5th Year | Salary and maintenance of Eco-Task Force Units | 3,30,00,000 |
| 6th Year | Material, carriage and maintenance cost for plantation (ha) | 90,00,000 |
| 6th Year | Cost of Salary and maintenance of Eco-Task Force Units | 3,40,00,000 |
| 7th Year | Material, carriage and maintenance cost for plantation (ha) | 24,00,000 |
| 7th Year | Cost of Salary and maintenance of Eco-Task Force Units | 3,50,00,000 |
| 8th Year | Material, carriage and maintenance cost for plantation (ha) | 18,00,000 |
| 8th Year | Cost of Salary and maintenance of Eco-Task Force Units | 3,50,00,000 |
| 9th Year | Material, carriage and maintenance cost for plantation (ha) | 8,00,000 |
| 9th Year | Cost of Salary and maintenance of Eco-Task Force Units | 3,50,00,000 |
| 10th Year | Material, carriage and maintenance cost for plantation (ha) | 4,00,000 |
| 10th Year | Cost of Salary and maintenance of Eco-Task Force Units | 3,50,00,000 |

| Grand Total | | 41,27,00,000 |
|---|---|---|
| **Total** | **Material cost including carriage** | **4,22,00,000** |
| **Total** | **Salary and maintenance of Eco-Task Force Units** | **37,05,00,000** |

### 1.6.2 Agriculture Landscapes

The Agriculture Landscapes are largely in the rural environment or matrix of the Riverscape. Agricultural models will be implemented in private farmland and community/panchayat land. Availability of land will be ascertained by local officials of State Forest Department based upon proposals from local farmers and communities. Plants will be supplied to farmers and local communities who will carry out planting. Maintenance cost will be given to the landowners based upon plant survival at the end of first, second, third and fourth year.

**Model – SL/HP/AL/01 Boundary Plantation Model**

This model will be implemented in agricultural land in temperate and sub-tropical zones in Himachal Pradesh. The area is mostly hilly for most of this zone with moderate to steep slopes. The sites proposed for this model are agricultural or horticultural lands where off season vegetables and fruit crops are grown; hence these sites possess better soil fertility and managerial care with occasional subsistence irrigation mostly available water judiciously divided among local communities collectively by them.

**List of Species for Plantation**

**Trees:** *Prunus armeniaca, Prunus mira, Prunus cerasifera, Prunus domestica, Prunus persica, Myrica esculenta, Diospyros lotus, Diospyros nigra, Diospyros kaki, Phyllanthus* emblica*, Hippophae salicifolia,Terminalia arjuna, Terminalia bellirica, Terminalia chebula, Toona ciliata, Acer* spp.*, Dalbergia sissoo, Senegalia catechu, Acer* spp.*, Morus alba, Salix* spp.*, Populus* spp.*, Grewia optiva, Celtis australis, Bauhinia* spp.*, Dendrocalamus* spp.*, Bambusa* spp.*, Sapindus mukorossi, Aegle marmelos,*etc.

**Shrubs:** *Drepanostachyum falcatum, Thamnocalamus spathiflorus, Hippophae rhamnoides* spp. *turkestanica, Buddleia* spp.*, Berberis* spp.*, Zanthoxylum armatum, Vitex negundo, Rosa* spp., etc.

**Model – SL/HP/AL/02 - Block Plantation Model**

This model will be implemented in Agricultural/ Horticultural land in temperate to sub-tropical zones in Himachal Pradesh. The area is hilly and the slope is moderate to gentle. The sites proposed for this model are agricultural/ horticultural/ grassland where grains, off season vegetables, stone fruit crops, grasses etc. are grown, hence these sites possess better soil fertility and managerial care with occasional subsistence irrigation mostly available water judiciously divided among local communities collectively by them.

**List of Species for Plantation**

**Trees:** *Prunus armeniaca, Prunus mira, Prunus cerasifera, Prunus domestica, Prunus persica, Myrica esculenta, Diospyros lotus, Diospyros nigra, Diospyros kaki, Phyllanthus* emblica*, Hippophae salicifolia,Terminalia arjuna, Terminalia bellirica, Terminalia chebula,*

*Toona ciliata, Acer* spp., *Dalbergia sissoo, Senegalia catechu, Morus alba, Salix* spp., *Populus* spp., *Grewia optiva, Celtis australis, Bauhinia* spp., *Dendrocalamus* spp., *Bambusa* spp., *Sapindus mukorossi, Aegle marmelos,* etc.

### 1.6.3 Urban Landscapes

Different types of sites would require varied interventions as per the context. The urban areas provide highly complex site conditions and a variety of peculiar problems. It is extremely important to select species, varieties and designs that show adaptability to such complex site conditions.

Accordingly, altogether four different models have been included in the DPR:

**(i)** Bio-remediation and Bio-filtration
**(ii)** Riverfront Development
**(iii)**Institutional Plantation
**(iv)**Eco-Park Development

#### 1.6.3.1 Bio-remediation and Bio-filtration

Under the Urban Landscape models, Bio-remediation and bio-filteration is one of the important Forestry Intervention activity proposed for rejuvenation of rivers/tributaries.

Varied anthropogenic activities and ever burgeoning population have resulted in deterioration of river ecosystems making them unfit for survival of indigenous biological forms. Rampant industrialization, improper agricultural methods, unchecked discharge of pollutants both organic and inorganic into water bodies, drains, nallahs, hillsides, rivulets and streams ultimately leads to the contamination of the river systems. Heavy metal effluents from the processing units of industrial agglomerations situated in the towns are refused in the River systems which degrade the quality of water, rendering of little or no use in the downstream.

Water bodies including rivers, lakes and streams have been heavily impacted due to the indiscriminate human activities and sometimes natural calamities and there is a great loss to their biodiversity or utility.

In this dismal scenario, cleaning of water bodies and removal of toxic pollutants from the river ecosystems to rejuvenate freshwater bodies by making them free of contaminants is urgently required.

In comparison to the conventional methods like physical, chemical and thermal processes, bio-remediation techniques involving biological systems such as microorganisms or their products and plants are sustainable, cost effective options for abatement of pollution of the water bodies. In bio-remediation, biological systems are applied for reclamation of the contaminated water by transformation of toxic pollutants into less hazardous or completely non-hazardous forms. The bio-remediation technology includes use of microorganisms or their enzymatic machineries, phyto-remediation (plants) and rhizo-remediation (plant and microbe interactions) techniques. Thus, Bio-remediation is an effective and eco-friendly technique for removing toxic pollutants from aquatic environment.

Water pollution from untreated municipal wastewater is an enormous problem in urban agglomerations. Low-cost, decentralized, wetland-based bio-filters have strong potential to dramatically improve the water quality. Well- designed bio-treatment systems with inclusion

of appropriate native species are ideal for removing pollutants from municipal wastewater. They can be applied extensively in rural areas, small towns, peri-urban areas of large cities, industrial townships or institutional campuses, as well as for certain types of industries such as agro-food/beverage, etc. The bio-filters are simple to construct, easy to operate, and cost effective. Major advantage of this method is that the pollutant is converted into bio-degradable waste which can decompose within a moderate time frame, thus producing no secondary pollutants.

Broadly, in this technique plants and microbes associated with plant root systems are used to remove the pollutants in the form of inorganic and organic wastes. Selection criteria of plants for achieving high efficiency are always important. For example, plants such as *Tecoma stans*, *Scirpus grossus, Eichhornia crassipes* (water hyacinth), *Spirodela polyrrhiza* (aquatic plant) have been found good for dye degradation.

Organic and inorganic substances released from various sources into the existing natural water bodies cause their contamination. Among various water pollutants, nitrogen compounds form a significant role in wastewater contamination due to increase in anthropogenic sources like agriculture. Release of nitrate into fresh water poses severe problems including eutrophication. Biological denitrification is one of the more versatile and promising methods for the treatment of nitrate contaminated waters.

The plants in bio-filters played a great role in removing phosphates, nitrates, nitrites and ammonia. Many substances harmful to people and animals are conducive to plant growth. Plants require ammonia, phosphates and nitrates, and most synthetic fertilizers. Duckweed, nut grass and water lilies are known to absorb these substances.

The pollution control board already released the list of Urban/ Semi Urban area which are polluting the rivers or their tributaries, so the areas are identified in the Riverscape accordingly, and one site can be termed as 1 hectare (virtually) and where possible Seechewal model of Punjab or its modification can also be adopted.

**Model: SL/ HP/UL/01 Bio-remediation and Bio-filtration**

The State Forest Department, municipal or Panchayat bodies have to adopt the suitable approach for bio-filter suiting to the specific requirements and site characteristics. The model will include the following activities.

1) Wastewater treatment through mechanical measures as per the site requirement.
2) Drainage line treatment by planting grasses, herbaceous vegetation and shrubs.
3) Bio-filters: Bio-filters may be of different types: Free floating macrophyte bio-filter, emergent macrophyte bio-filter, sub-merged macrophyte biofilter, multispecies algal biofilter.

**List of Species for Plantation**

*Tecoma stans, Scirpus grossus, Scirpus* spp., *Typha* spp., *Cyperus* spp., *Phragmitis* spp., *Eichhornia crassipes* (water hyacinth), *Spirodela polyrrhiza*, etc.

### 1.6.3.2 River Front Development

Many cities, towns and semi-urban areas are located along the Sutlej River and its tributaries. Urban and peri-urban area along the river may be developed to attract residents and visitors and provide them a grand sight of the river along with fresh air, mental peace, solace and spiritual fulfilment that would connect them with the river.

River front development envisages river bank plantation to stabilize it by protecting it from soil erosion. This involves covering the entire ground by intercepting the sunlight at various heights of canopy through multiple layers of vegetations. At the ground surface, the grasses or surface growers are allowed to cover and to bind the surface soil and control the surface soil erosion like sheet erosion, splash erosion and rill erosion. It also promotes the rain water percolation and minimizes the surface runoff. At the second layer of vegetation, small to medium sized herbs and shrubs are accommodated to intercept some amount of sunlight and slow down the speed and reduce the erosive force of rain drops falling directly from sky and/or upper layers of canopy thereby reducing soil erosion (splash erosion). At the third layer of canopy above the ground surface, small to medium sized trees or larger shrubs are accommodated to provide a dense crown cover. This comprises light loving plants having good timber value and multipurpose benefits like fodder, fuel etc. Scattered taller strong light demander trees may make one or two higher layers of canopy. Strong root binders are promoted on this type of site. Multi-tier planting methods are preferred. A basic support system may also be developed for the convenience of visitors.

The Riverfront of Sutlej and tributaries has different owners: farmers, Municipal Corporations, Panchayat, Irrigation department, Institutions, Forests department etc. and substantial portion are under private ownership. Suitable steps will be taken to ensure smooth coordination of the activities among different agencies.

In this model the river team has identified the major areas around district Headquarters or any other prominent places of religious importance in consultation with various stakeholders and area be decided as per availability at those places

One model for Riverfront development has been proposed. Site-specific activities will be carried out at different places commensurate with the local site conditions available for Riverfront development. Description of the model is given below:

**Model: SL/HP/ UL/02 Riverfront Development**

The proposed model of Riverfront development would involve plantation of avenue shrubs and trees along the Riverbank to stabilize the soil and protect the bank from erosion. It would also have beds of annual flowering plants and patches of grasses. The area is so developed that would provide a pleasing and relaxing environment to the visitors. It would be a typical landscaping area comprised of vegetation and non-vegetation components.

According to requirements following components need to be created for Riverfront development:

1. **Vegetation Part**: Grove consisting of shade trees, ornamental trees and bamboos, small herbal garden, climbers, hedges, grasses for lawn, etc.
2. **Non-vegetation Part**: Stairs, pathways, walking trails, stone pitching, benches, rain shelters, e-public utilities, parking area, information centre, refreshment area etc. as per the site-specific requirements.

The vegetation and non-vegetation components will be arranged in such a way to enhance the aesthetic beauty of Riverfront. Ornamental species will be planted according to their recommended spacing and site-specific suitability.

For using the available space economically and efficiently multi-tier planting methods will be used. Soil binding and water loving ornamental tree and shrub species are ideal choice for Riverbank planting. To bind the surface soil, grasses and surface growers will be allowed to cover the surface and protect soil from erosion especially during rainy season or River flooding. It will minimise soil loss through sheet erosion, splash erosion and rill erosion. It will also improve rainwater per collation or absorption. Besides this, small to medium sized herbs and shrubs will be accommodated at the second layer of vegetation to intercept some amount of sunlight and stop the fast/ forceful falling of rain drops directly from sky in turn which stop soil erosion (splash erosion). Small to medium sized ornamental trees or larger shrubs i.e. mainly light demanding plants will be accommodated at the third layer of canopy to cover the crown area. This layer will provide small timber, fuel, fodder and intangible benefits. The top canopy will be occupied by the strong light demanding species which are ultimately the dominant species on Riversides.

In this model the river team has identified the major areas around district Headquarters or any other prominent places of religions important with consultation of various stakeholders and area be decided as availability at those places

**List of Species for Plantation**

**Trees:** *Jacaranda mimosifolia, Grevillea robusta, Cassia fistula, Ficus rumphii, Azadirachta indica, Albizia chinensis, Albizia procera, Butea monosperma, Kigelia pinnata, Delonix regia, Dalbergia sissoo, Salix alba, Saraca asoca, Polyalthia longifolia, Callistemon citrinus, Syzygium cumini, Magnolia* spp.,*Michelia* spp., etc.

**Shrubs:** *Bougainvillea* spp., *Rosa* spp., *Nerium indicum, Nyctanthes arbor-tristis, Spiraea* spp., *Rosa* spp., *Jasminum* spp., etc.

### 1.6.3.3 Institutional Plantations

No. of Educational institutes, Hospitals, Government and Private Sector Offices, Factories, religious places, historical places, hotels, Guesthouses etc are located in the whole stretch on the bank of Sutlej and its tributaries. Many of such institutions and industries may have possibility to accommodate no. of trees of different sizes for beautifying the overall landscape. Tree/shrub/climber plantations will be encouraged on such lands within the project area. This would improve aesthetics, provide shade, produce non-wood and wood produce, reduce air, noise and dust pollution, harbour birds, reduce erosion, and create awareness about importance of trees. Some of the trees may serve religious purpose too and could be developed as small sacred grooves with the approval of management of such institutions.

The River team has consulted the secondary data of District wise/ Block wise in Riverscape regarding schools (Universities, Collages, Corporate/ Factory, Big hotels, Corporations, other NGO's, the Railways). Total numbers be worked out and 20% of those can be taken in this component and individual institution would be taken as one hectare (virtual) for calculating budgetary provision. The forest department and commissioner of the district can be taken on board for providing the land for institutions for establishing plantations under this model. The

budgetary provision for those institutions can be distributed in three years in equal proportion or in the ratio of 30:30:40 in each year.

One model has been proposed for institutional and industrial estate plantation. Site-specific activities will be carried out according to the site conditions. Description of the model is given below:

**Model: SL/HP/ UL/03 Institution Plantation**

Under this model mainly ornamental, shade and fruit plants will be encouraged for planting. Evergreen plants especially Silver oak (*Grevillea robusta*) will be preferred so that the leaves do not shed during winter months when air pollution is usually high in plains. Plantation of forest species will be raised near the vicinity of various institutions and industries at 3m x 3m. Pit size of 45 cm x 45 cm x 45 cm will be used for plantation. Pit size of 45 cm x 45 cm x 45 cmwill be used for plantation. After land development, pit digging etc. plants mainly of broadleaved species *Syzygium cumini, Anthocephalus cadamba, Dalbergia sissoo, Melia composita, Pongamia pinnata, Holoptelia integrifolia, Acacia nilotica*, etc. will be planted. The initiative will beautify the area, create awareness among people associated with institution and industries and promote environmental services, besides providing economic returns from under-utilized land.

**List of Species for Plantation**

**Trees:** *Cedrus deodara, Aesculus indica, Prunus* spp., *Quercus* spp., *Bambusa* spp., *Dendrocalamus* spp., *Syzygium cumini, Anthocephalus cadamba, Dalbergia sissoo, Melia composita, Morus* spp., *Thuja orientalis, Cryptomeria japonica, Araucaria araucana, Cupressus torulosa, Cupressus sempervirens, Jacaranda mimosifolia, Grevillea robusta, Albizia chinensis, Albizia procera, Delonix regia, Salix alba, Saraca asoca, Polyalthia longifolia, Callistemon citrinus, Kigelia pinnata*, etc.

**1.6.3.4 Eco-park Development**

Development of some sites of Urban Landscape into Eco-park is an important activity keeping in view the growing population and settlements in urban areas. Actually, landscaping and beautification is proposed to be done for urban and peri-urban Landscapes of frequent public visitation to bring forth aesthetics and entertainment coupled with natural awareness. The natural layout of the land will be manoeuvred in such a way that the aesthetic beauty will be enhanced without much investment by greening the blank areas. Landscaped area will be designed to afford good soil, moisture and biodiversity conservation, in addition to improvement in aesthetic values.

The river team has consulted various stakeholders having land for developing Eco park development which can be near any urban/ semi urban area. The availability of land should be taken after consultation with respective stakeholders that can be anything from 0.5 hact – 2 hact.

One model has been proposed for Eco-park development. Site-specific activities will be carried out at different places in harmony with the selected site conditions. Description of the model is given below:

**Model: SL/HP/ UL/04 Eco-Park Development**

An Eco-Park will be better equipped than Riverfront development to facilitate visitors. An Eco-Park will have both vegetation and non vegetation components. Even in the Eco-Parks the proportion of ornamental plants will be relatively more than in the Riverfront Development Model.

According to requirement list of components to be created under this model

1. **Vegetation part**: Miscellaneous ornamental plant species e.g. trees, shrubs, herbs, creepers, hanging plants etc.
2. **Non-vegetation part**: Fencing, stairs, pathways, walking trails, stone pitching, rain shelter, e-public utilities, benches parking area, information centre, children playing area, pond beautification, lands scaping etc as per site-specific requirements.

**List of Species for Plantation**

**Trees:** *Cedrus deodara, Aesculus indica, Platanus orientalis, Magnolia grandiflora, Jacaranda mimosifolia, Grevillea robusta, Albizia chinensis, Albizia procera, Delonix regia, Butea monosperma, Thuja orientalis, Cryptomeria japonica, Araucaria araucana, Cupressus torulosa, Cupressus sempervirens, Dalbergia sissoo, Morus* spp. *Salix* spp., *Saraca asoca, Polyalthia longifolia, Callistemon citrinus, Syzygium cumini,* etc.

**Shrubs:** *Bougainvillea* spp., *Rosa* spp., *Nerium indicum, Euphorbia pulcherrima, Cactus monacantha, Rosa* spp., *Nyctanthes arbor-tristis, Spiraea* spp., etc.

### 1.6.4 Conservation Interventions

Three types of Conservation Interventions *viz*., (a) Soil and Water Conservation, (b) Riparian Wildlife Management, and (c) Wetland Management are being proposed for implementation by two State level IAs. Proposed Conservation Interventions will be implemented at the State and local field levels. Details of these Conservation Interventions are given in Volume I of the DPR.

### 1.6.5 Supporting Activities

A number of supporting activities, viz., Policy level interventions, concurrent research, capacity building, awareness, monitoring, and evaluation are considered vital for successful and effective execution of the proposed Forestry Interventions. The strategies and specific interventions for these important supporting activities are given in Volume I of the DPR.

A multi-tiered mechanism has been suggested for monitoring of the project. The structure of the mechanism has been shown in the Fig.1.30.

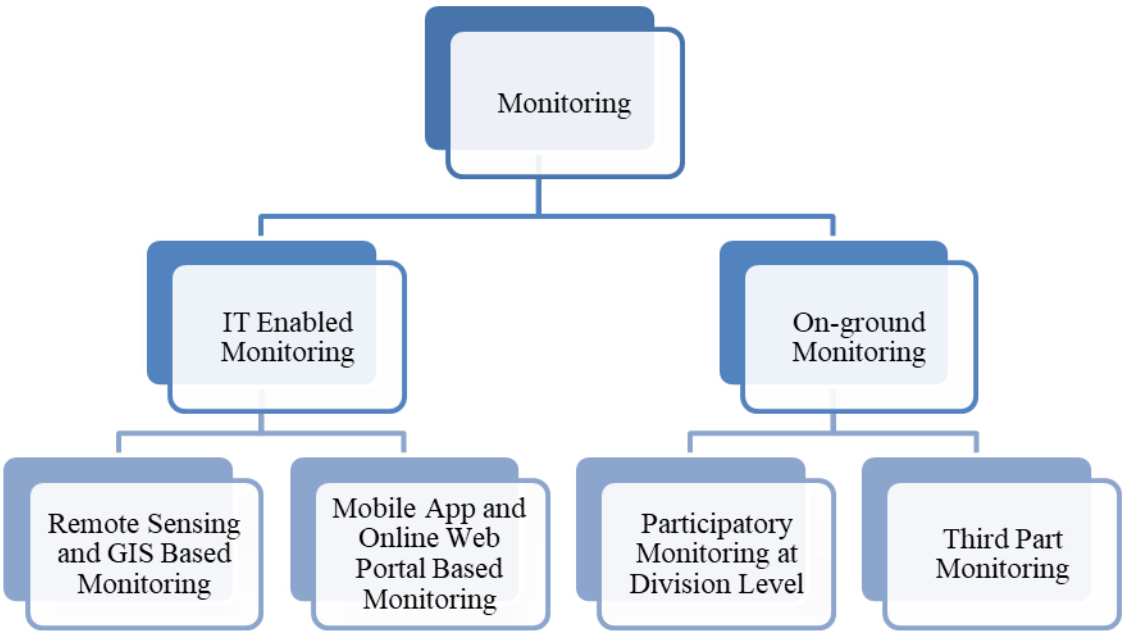



**Fig.1. 30 Multi-Tiered Monitoring Mechanism for Proposed Forestry Interventions in Sutlej Riverscape**

## 1.7 Physical and Financial Targets

The physical and financial projections of all the five interventions to be undertaken for the cost duration as well as various Divisions are given in Table 1.36 - 1.57 given below and the consent for availability of land for proposed Forestry Interventions have been obtained from PCCF (HoFF), Himachal Pradesh Forest Department (Annexure at page No. 256).

**Table 1.36– Component/ Activity Wise Budget Allocation for Himachal Pradesh**

| Sr. No. | Component/ Activity | Amount (Rs. in Crore) | Allocation (%) |
|---|---|---|---|
| A. | Implementation of Forestry Interventions in Himachal Pradesh of Sutlej Riverscape (A1+A2)+(C1+C3) | **680.82** | **94.46** |
| **A.1** | **Plantations and Treatment Models in Three Categories of Landscape** | **423.5** | 58.76 |
| A.1.1 | Natural Landscapes | 303.37 | |
| A.1.2 | Eco -Task Force | 44.86 | |
| A.1.3 | Agriculture Landscapes | 10.1 | |
| A.1.4 | Urban Landscapes | 65.17 | |
| **A.2** | **Conservation Interventions** | **144.08** | 19.99 |
| A.2.1 | Soil and Moisture Conservation | 113.05 | |
| A.2.2 | Riverine and Riparian Wildlife Management | 27.43 | |
| A.2.3 | Wetland Management (Natural and Artificial) | 3.6 | |
| **A.3** | **Supporting Activities** | **29.99** | **4.16** |
| A.3.1 | Policy Level Interventions | 0.21 | |
| A.3.2 | Research Activities | 2.66 | |

| | | | |
|---|---|---|---|
| A.3.3 | Capacity Development | 7.86 | |
| A.3.4 | Awareness | 7.07 | |
| A.3.5 | Participatory Monitoring | 0.99 | |
| A.3.6 | Cost of PMUs of Two State Level Implementing Agencies | 10.51 | |
| A.3.7 | Evaluation | 0.63 | |
| A.3.8 | Contingency and Miscellaneous Activities | 0.05 | |
| **B.** | **Strengthening Knowledge Management and National Capacity for Forestry Interventions and Conservation of Riverscapes** | 0.00 | 0.00 |
| **C.** | **DPR – Phase II (Maintenance phase) Including Scaling Up and Replication of Successful Models of Forestry Interventions** | **9.98** | |
| C.1 | Maintenance Cost of A.1 and A.2 (Cost of Phase II) | 84.86 | 11.77 |
| C.2 | Maintenance Cost of A.3 | **9.98** | **1.38** |
| C.3 | Scaling Up and Replication of Successful Models of Forestry Interventions (5% of A.1 and A.2) | 28.38 | 3.94 |
| **D.** | **National Coordination for Forestry Interventions and Riverscape Conservation** | 0.00 | 0.00 |
| | **Total Phase I (A+B+D)** | **597.57** | |
| | **Total Project Cost (Phase I+II) (A+B+C+D)** | **720.79** | **100** |

**Table 1.37 – Year-Wise Breakup of Extent Coverage of Area* for Proposed Forestry Interventions in Himachal Pradesh**

| Year | Period | Plantation and Treatment Models | | | | Conservation Intervention | | |
|---|---|---|---|---|---|---|---|---|
| | | Natural Landscape (ha) | Eco-Task Force (ha) | Agriculture Landscape (ha) | Urban Landscape (ha) | Soil and Moisture Conservation Measures ($m^3$) | Riverine and Riparian Wildlife Management (ha) | Wetland Conservation (ha) |
| **A. Phase I (Implementation Phase)** | | | | | | | | |
| I | Est. | 3725 | 0 | 807 | 298.77 | 122481 | 247 | 40 |
| II | Est. | 3900 | 400 | 744 | 321.75 | 140134 | 30 | 0 |
| | Maint | 3725 | 0 | 807 | 298.77 | 0 | 247 | 40 |
| III | Est. | 3317 | 400 | 713 | 320 | 123823 | 0 | 0 |
| | Maint. | 7625 | 400 | 1551 | 620.52 | 0 | 277 | 40 |
| IV | Est. | 2515 | 400 | 0 | 0 | 111375 | 0 | 0 |
| | Maint. | 10942 | 800 | 2264 | 940.52 | 0 | 277 | 40 |
| V | Est. | 2211 | 400 | 0 | 0 | 82710 | 0 | 0 |
| | Maint. | 13457 | 1200 | 1457 | 641.75 | 0 | 277 | 40 |
| **Total Phase I** | **Est.** | **15668** | **1600** | **2264** | **940.52** | **580523** | **277** | **40** |
| | **Maint.** | **13457** | **1200** | **2264** | **940.52** | **0** | **277** | **40** |
| **B. Phase II (Maintenance Phase)** | | | | | | | | |
| **VI** | Est. | 0 | 400 | 0 | 0 | 0 | 0 | 0 |
| | Maint. | 11943 | 1600 | 713 | 320 | 0 | 30 | 0 |
| **VII** | Est. | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | Maint. | 7913 | 1600 | 0 | 0 | 0 | 0 | 0 |
| **VIII** | Est. | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | Maint. | 4556 | 1200 | 0 | 0 | 0 | 0 | 0 |
| **IX** | Est. | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | Maint. | 2086 | 800 | 0 | 0 | 0 | 0 | 0 |
| **X** | Est. | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | Maint. | 0 | 400 | 0 | 0 | 0 | 0 | 0 |
| **Total Phase II** | **Est.** | **0** | **400** | **0** | **0** | **0** | **0** | **0** |
| | **Maint.** | **12933** | **2000** | **713** | **320** | **0** | **30** | **0** |

| Year | Period | Plantation and Treatment Models | | | | Conservation Intervention | | |
|---|---|---|---|---|---|---|---|---|
| | | Natural Landscape (ha) | Eco-Task Force (ha) | Agriculture Landscape (ha) | Urban Landscape (ha) | Soil and Moisture Conservation Measures ($m^3$) | Riverine and Riparian Wildlife Management (ha) | Wetland Conservation (ha) |
| **Grand Total Phase I and Phase II** | **Est.** | **15668** | **2000** | **2264** | **940.52** | **580523** | **277** | **40** |
| | **Maint.** | **15668** | **2000** | **2264** | **940.52** | **0** | **277** | **40** |

* The consent for availability of land for proposed Forestry Interventions have been obtained from PCCF (HoFF), Himachal Pradesh Forest Department (Annexure at page No. 256).

**Table 1.38 – Year-Wise Breakup of Cost for Proposed Forestry Interventions in Himachal Pradesh**

| Year | Period | Plantation and Treatment Models | | | | Conservation Intervention | | |
|---|---|---|---|---|---|---|---|---|
| | | Natural Landscape (Rs. in Lakhs) | Eco - Task Force (Rs. in Lakhs) | Agriculture Landscape (Rs. in Lakhs) | Urban Landscape (Rs. in Lakhs) | Soil and Moisture Conservation Measures (Rs. in Lakhs) | Riverine and Riparian Wildlife Management (Rs. in Lakhs) | Wetland Conservation (Rs. in Lakhs) |
| **B. Phase I (Implementation Phase)** | | | | | | | | |
| I | Est. | 3566.49 | 1400.00 | 147.00 | 1509.55 | 2435.04 | 790.40 | 112.00 |
| II | Est. | 8268.95 | 120.00 | 130.14 | 1684.10 | 2982.58 | 96.00 | 0.00 |
| | Maint. | 717.01 | 600.00 | 78.54 | 452.87 | 0.00 | 691.60 | 100.00 |
| III | Est. | 6085.24 | 132.00 | 121.89 | 832.00 | 2662.44 | 0.00 | 0.00 |
| | Maint. | 1289.08 | 630.00 | 153.73 | 807.14 | 0.00 | 553.30 | 64.00 |
| IV | Est. | 4202.81 | 144.00 | 0.00 | 0.00 | 1876.74 | 0.00 | 0.00 |
| | Maint. | 2194.84 | 640.00 | 229.75 | 812.87 | 0.00 | 353.40 | 48.00 |
| V | Est. | 1298.94 | 160.00 | 0.00 | 0.00 | 1347.88 | 0.00 | 0.00 |
| | Maint. | 2713.95 | 660.00 | 149.56 | 419.03 | 0.00 | 258.30 | 36.00 |

| Year | Period | Plantation and Treatment Models | | | | Conservation Intervention | | |
|---|---|---|---|---|---|---|---|---|
| | | Natural Landscape (Rs. in Lakhs) | Eco - Task Force (Rs. in Lakhs) | Agriculture Landscape (Rs. in Lakhs) | Urban Landscape (Rs. in Lakhs) | Soil and Moisture Conservation Measures (Rs. in Lakhs) | Riverine and Riparian Wildlife Management (Rs. in Lakhs) | Wetland Conservation (Rs. in Lakhs) |
| **Total Phase I** | **Est.** | **23422.38** | **1956.00** | **398.76** | **4025.65** | **11304.69** | **886.40** | **112.00** |
| | **Maint.** | **6914.87** | **2530.00** | **611.58** | **2491.91** | **0.00** | **1856.60** | **248.00** |
| **B. Phase II (Maintenance Phase)** | | | | | | | | |
| VI | Est. | 0.00 | 180.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| | Maint. | 2367.52 | 680.00 | 74.72 | 124.80 | 0.00 | 27.00 | 0.00 |
| VII | Est. | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| | Maint. | 1379.55 | 748.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| VIII | Est. | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| | Maint. | 604.62 | 736.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| IX | Est. | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| | Maint. | 139.28 | 716.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| X | Est. | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| | Maint. | 0.00 | 708.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| **Total Phase II** | **Est.** | 0.00 | **180**.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| | **Maint.** | **4491.39** | **3588.00** | **74.72** | **124.80** | **0.00** | **27.00** | **0.00** |
| **Grand Total Phase I and Phase II** | **Est.** | **23422.38** | **2136.00** | **398.76** | **4025.65** | **11304.70** | **886.40** | **112.00** |
| | **Maint.** | **11406.26** | **6118.00** | **686.30** | **2616.71** | **0.00** | **1883.60** | **248.00** |
| **Grand Total** | | **34828.75** | **8254.00** | **1085.06** | **6642.36** | **11304.70** | **2770.00** | **360.00** |

## Table 1.39 – Division Wise Proposed Extent of Plantations in Natural Landscapes in Himachal Pradesh

| Sr.No. | Division | Year | | | | | | | | | Year | | | | | | Grand Total |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Phase I (Extent in ha) | | | | | | | | | Phase II (Extent in ha) | | | | | | |
| | | I | II | III | IV | | V | | Phase 1 | | VI | VII | VIII | IX | X | Phase II | |
| | | Establishment (Nursery raising for 3rd year creation) * | Establishment (Nursery raising for 4th year Creation) * | Establishment (i/c creation for 1st year plantation) | Establishment (i/c creation for 2nd year plantation) | Maintenance (Maintance of plantation 3rd year) | Establishment (i/c creation for 3rd year plantation | Maintenance (Maint of plantation 3rd year and 4th year) | Estb. | Maint. | Maint. | Maint. | Maint. | Maint. | Maint. | Maint. | | |
| 1 | Anni | 75 | 168 | 75 | 168 | 75 | 240 | 243 | 483 | 243 | 483 | 483 | 408 | 240 | 0 | 483 | 483 |
| 2 | Bilaspur | 644 | 219 | 644 | 219 | 644 | 410 | 863 | 1273 | 863 | 1273 | 1273 | 629 | 410 | 0 | 1273 | 1273 |
| 3 | Hamirpur | 215 | 0 | 215 | 0 | 215 | 205 | 215 | 420 | 215 | 420 | 420 | 205 | 205 | 0 | 420 | 420 |
| 4 | Karsog | 238 | 110 | 238 | 110 | 238 | 183 | 348 | 531 | 348 | 531 | 486 | 293 | 143 | 0 | 531 | 531 |
| 5 | Kinnaur | 235 | 50 | 235 | 50 | 235 | 45 | 285 | 330 | 285 | 330 | 280 | 60 | 0 | 0 | 330 | 330 |
| 6 | Kotgarh | 115 | 85 | 115 | 85 | 115 | 0 | 200 | 200 | 200 | 200 | 200 | 85 | 0 | 0 | 200 | 200 |
| 7 | Kunihar | 45 | 215 | 45 | 215 | 45 | 0 | 260 | 260 | 260 | 260 | 260 | 215 | 0 | 0 | 260 | 260 |
| 8 | Nachan | 0 | 240 | 0 | 240 | 0 | 120 | 240 | 360 | 240 | 360 | 360 | 360 | 120 | 0 | 360 | 360 |
| 9 | Nalagarh | 437 | 550 | 437 | 550 | 437 | 200 | 987 | 1187 | 987 | 1187 | 1187 | 750 | 200 | 0 | 1187 | 1187 |
| 10 | Rampur | 115 | 45 | 115 | 45 | 115 | 50 | 160 | 210 | 160 | 210 | 175 | 60 | 10 | 0 | 210 | 210 |
| 11 | Shimla | 0 | 130 | 0 | 130 | 0 | 0 | 130 | 130 | 130 | 130 | 130 | 130 | 0 | 0 | 130 | 130 |
| 12 | Solan | 35 | 0 | 35 | 0 | 35 | 0 | 35 | 35 | 35 | 35 | 35 | 0 | 0 | 0 | 35 | 35 |
| 13 | Spiti Wildlife | 25 | 200 | 25 | 200 | 25 | 100 | 225 | 325 | 225 | 325 | 325 | 200 | 100 | 0 | 325 | 325 |
| 14 | Suket | 23 | 85 | 23 | 85 | 23 | 260 | 108 | 368 | 108 | 368 | 368 | 345 | 260 | 0 | 368 | 368 |
| 15 | Theog | 0 | 135 | 0 | 135 | 0 | 130 | 135 | 265 | 135 | 265 | 265 | 265 | 130 | 0 | 265 | 265 |
| 16 | Una | 125 | 283 | 125 | 283 | 125 | 268 | 408 | 676 | 408 | 676 | 676 | 551 | 268 | 0 | 676 | 676 |
| **Total** | | **2327** | **2515** | **2327** | **2515** | **2327** | **2211** | **4842** | **7053** | **4842** | **7053** | **6923** | **4556** | **2086** | **0** | **7053** | **7053** |

## Table 1.40– Division Wise Projected Cost of Plantations in Natural Landscapes in Himachal Pradesh

| Sr.No | Division | Year | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | Phase I (Rs.in Lakhs) | | | | | | | | |
| | | I | II | III | IV | | V | | Total | |
| | | Establishment (Nursery raising for 3rd year creation) | Establishment(Advance work for 3rd year plantation and Nursery raising for 4th year Creation) | Establishment (i/c creation cost for 3rd year, Advance cost of 4th year and nursery cost of 5th year plantation) | Establishment (i/c creation cost for 4th year, Advance cost of 5th year) | Maintenance (Maint cost of plantation 3rd year maint, maint cost of nursery) | Establishment (i/c creation cost for 5th year | Maintenance (Maint. Cost of plantation 3rd year and 4th year maint, maint cost of nursery) | Estb. | Maint. |
| 1 | Anni | 8.45 | 120.87 | 312.71 | 427.26 | 29.00 | 146.94 | 80.98 | 1016.20 | 109.98 |
| 2 | Bilaspur | 110.92 | 810.07 | 678.00 | 615.29 | 244.31 | 232.51 | 255.66 | 2446.80 | 499.97 |
| 3 | Hamirpur | 17.96 | 267.14 | 151.69 | 255.78 | 84.30 | 130.99 | 67.59 | 823.56 | 151.88 |
| 4 | Karsog | 35.09 | 332.61 | 309.05 | 324.95 | 83.10 | 108.31 | 99.27 | 1110.00 | 182.37 |
| 5 | Kinnaur | 26.20 | 325.88 | 183.49 | 84.96 | 64.26 | 10.47 | 56.53 | 630.98 | 120.79 |
| 6 | Kotgarh | 10.90 | 158.04 | 190.81 | 58.75 | 43.99 | 0.00 | 64.06 | 418.50 | 108.05 |
| 7 | Kunihar | 16.86 | 129.86 | 299.15 | 123.24 | 18.83 | 0.00 | 100.09 | 569.10 | 118.91 |
| 8 | Nachan | 0.00 | 26.69 | 356.47 | 326.94 | 0.00 | 76.68 | 89.95 | 786.78 | 89.95 |
| 9 | Nalagarh | 45.60 | 582.47 | 908.61 | 523.31 | 155.56 | 98.79 | 313.66 | 2158.80 | 469.22 |
| 10 | Rampur | 13.19 | 155.91 | 124.36 | 86.23 | 33.43 | 14.48 | 35.29 | 394.17 | 68.73 |
| 11 | Shimla | 0.00 | 15.42 | 176.12 | 87.58 | 0.00 | 0.00 | 48.18 | 279.13 | 48.18 |
| 12 | Solan | 2.94 | 41.78 | 18.11 | 0.00 | 12.00 | 0.00 | 9.68 | 62.83 | 21.68 |
| 13 | Spiti Wildlife | 0.00 | 63.05 | 323.88 | 157.52 | 7.00 | 105.39 | 70.12 | 649.83 | 77.12 |
| 14 | Suket | 1.93 | 37.08 | 146.09 | 371.50 | 9.15 | 144.47 | 37.17 | 701.07 | 46.32 |
| 15 | Theog | 0.00 | 13.50 | 209.82 | 289.10 | 0.00 | 95.89 | 50.00 | 608.30 | 50.00 |
| 16 | Una | 9.99 | 184.88 | 426.71 | 470.40 | 42.06 | 134.02 | 135.84 | 1226.00 | 177.90 |
| **Total** | | **300.03** | **3265.25** | **4815.07** | **4202.81** | **826.99** | **1298.94** | **1514.07** | **13882.05** | **2341.05** |

| Year | | | | | Grand Total | | |
|---|---|---|---|---|---|---|---|
| Phase II (Rs. in Lakhs) | | | | | | | |
| VI | VII | VIII | IX | Total | Rs. In lakhs | | |
| Maint. | Maint. | Maint. | Maint. | Maint. | Estb. | Maint. | Total Cost |
| 138.78 | 89.92 | 50.45 | 11.40 | 290.56 | 1016.20 | 400.54 | 1416.80 |
| 364.13 | 221.36 | 114.90 | 34.01 | 734.39 | 2446.80 | 1234.36 | 3681.20 |
| 137.05 | 83.81 | 53.60 | 17.61 | 292.05 | 823.56 | 443.93 | 1267.50 |
| 134.64 | 75.14 | 36.47 | 6.28 | 252.53 | 1110.00 | 434.90 | 1544.90 |
| 47.51 | 12.45 | 2.60 | 0.00 | 62.57 | 630.98 | 183.36 | 814.33 |
| 47.58 | 24.38 | 3.70 | 0.00 | 75.65 | 418.50 | 183.70 | 602.21 |
| 65.22 | 50.07 | 17.26 | 0.00 | 132.56 | 569.10 | 251.47 | 820.57 |
| 97.45 | 76.91 | 32.77 | 10.31 | 217.43 | 786.78 | 307.38 | 1094.20 |
| 320.52 | 217.57 | 92.28 | 17.18 | 647.54 | 2158.80 | 1116.76 | 3275.50 |
| 35.76 | 17.13 | 4.32 | 0.86 | 58.07 | 394.17 | 126.80 | 520.97 |
| 29.18 | 23.18 | 3.56 | 0.00 | 55.92 | 279.13 | 104.10 | 383.23 |
| 8.02 | 3.01 | 0.00 | 0.00 | 11.03 | 62.83 | 32.71 | 95.53 |
| 101.85 | 70.40 | 26.37 | 0.73 | 199.35 | 649.83 | 276.47 | 926.31 |
| 118.16 | 85.93 | 59.68 | 17.12 | 280.9 | 701.07 | 327.22 | 1028.30 |
| 76.10 | 48.67 | 21.72 | 0.76 | 147.25 | 608.30 | 197.25 | 805.55 |
| 197.44 | 149.20 | 84.94 | 23.02 | 454.59 | 1226.00 | 632.49 | 1858.50 |
| **1919.39** | **1249.13** | **604.62** | **139.28** | **3912.39** | **13882.05** | **6253.44** | **20135.6** |

## Table 1.41– Division Wise Proposed Extent (in ha) for Fire Protection and Natural Regeneration in Himachal Pradesh

| Sr | Division | YEAR | | | | | | | | | | | | | | | | | Grand Total |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Phase I (Area in ha) | | | | | | | | | | | Phase II (Area in ha) | | | | | | |
| | | I | II | | III | | IV | | V | | Phase I | | VI | | VII | | Phase II | | |
| | | Estb | Estb | Maint | Estb | Maint | Estb | Maint | Estb | Maint | Estb | Maint | Estb | Maint | Estb | Maint | Estb | Maint | |
| 1 | Anni | 250 | 200 | 250 | 0 | 450 | 0 | 450 | 0 | 450 | 450 | 450 | 0 | 200 | 0 | 0 | 0 | 200 | 450 |
| 2 | Bilaspur | 350 | 300 | 350 | 0 | 650 | 0 | 650 | 0 | 650 | 650 | 650 | 0 | 300 | 0 | 0 | 0 | 300 | 650 |
| 3 | Hamirpur | 300 | 300 | 300 | 0 | 600 | 0 | 600 | 0 | 600 | 600 | 600 | 0 | 300 | 0 | 0 | 0 | 300 | 600 |
| 4 | Karsog | 100 | 200 | 100 | 130 | 300 | 0 | 430 | 0 | 430 | 430 | 430 | 0 | 330 | 0 | 130 | 0 | 460 | 430 |
| 5 | Kinnaur | 100 | 300 | 100 | 200 | 400 | 0 | 600 | 0 | 600 | 600 | 600 | 0 | 500 | 0 | 200 | 0 | 700 | 600 |
| 6 | Kotgarh | 105 | 200 | 105 | 180 | 305 | 0 | 485 | 0 | 485 | 485 | 485 | 0 | 380 | 0 | 180 | 0 | 560 | 485 |
| 7 | Kunihar | 150 | 0 | 150 | 180 | 150 | 0 | 330 | 0 | 330 | 330 | 330 | 0 | 180 | 0 | 180 | 0 | 360 | 330 |
| 8 | Nachan | 280 | 300 | 280 | 0 | 580 | 0 | 580 | 0 | 580 | 580 | 580 | 0 | 300 | 0 | 0 | 0 | 300 | 580 |
| 9 | Nalagarh | 300 | 300 | 300 | 0 | 600 | 0 | 600 | 0 | 600 | 600 | 600 | 0 | 300 | 0 | 0 | 0 | 300 | 600 |
| 10 | Rampur | 250 | 300 | 250 | 0 | 550 | 0 | 550 | 0 | 550 | 550 | 550 | 0 | 300 | 0 | 0 | 0 | 300 | 550 |
| 11 | Shimla | 450 | 300 | 450 | 300 | 750 | 0 | 1050 | 0 | 1050 | 1050 | 1050 | 0 | 600 | 0 | 300 | 0 | 900 | 1050 |
| 12 | Solan | 280 | 300 | 280 | 0 | 580 | 0 | 580 | 0 | 580 | 580 | 580 | 0 | 300 | 0 | 0 | 0 | 300 | 580 |
| 13 | Suket | 260 | 300 | 260 | 0 | 560 | 0 | 560 | 0 | 560 | 560 | 560 | 0 | 300 | 0 | 0 | 0 | 300 | 560 |
| 14 | Theog | 250 | 300 | 250 | 0 | 550 | 0 | 550 | 0 | 550 | 550 | 550 | 0 | 300 | 0 | 0 | 0 | 300 | 550 |
| 15 | Una | 300 | 300 | 300 | 0 | 600 | 0 | 600 | 0 | 600 | 600 | 600 | 0 | 300 | 0 | 0 | 0 | 300 | 600 |
| **Total** | | **3725** | **3900** | **3725** | **990** | **7625** | **0** | **8615** | **0** | **8615** | **8615** | **8615** | **0** | **4890** | **0** | **990** | **0** | **5880** | **8615** |

## Table 1.42-Division Wise Proposed Cost Extent for Fire Protection and Natural Regeneration in Himachal Pradesh

| Sr | Division | YEAR | | | | | | | | | | | | | | | | | Grand Total |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Phase I | | | | | | | | | | | Phase II | | | | | | |
| | | I | II | | III | | IV | | V | | Phase I | | VI | | VII | | Phase II | | |
| | | Estb | Estb | Maint | Estb | Maint | Estb | Maint | Estb | Maint | Estb | Maint | Estb | Maint | Estb | Maint | Estb | Maint | |
| 1 | Anni | 225.31 | 256.60 | 47.54 | 0.00 | 76.37 | 0.00 | 72.11 | 0.00 | 61.98 | 481.91 | 258.00 | 0.00 | 16.29 | 0.00 | 0.00 | 0.00 | 16.29 | 756.20 |
| 2 | Bilaspur | 258.17 | 384.90 | 72.00 | 0.00 | 116.03 | 0.00 | 110.25 | 0.00 | 98.56 | 643.07 | 396.84 | 0.00 | 24.44 | 0.00 | 0.00 | 0.00 | 24.44 | 1064.35 |
| 3 | Hamirpur | 289.46 | 384.90 | 55.24 | 0.00 | 98.87 | 0.00 | 92.92 | 0.00 | 79.22 | 674.36 | 326.25 | 0.00 | 24.44 | 0.00 | 0.00 | 0.00 | 24.44 | 1025.05 |
| 4 | Karsog | 32.86 | 256.60 | 24.46 | 166.79 | 55.05 | 0.00 | 72.36 | 0.00 | 68.24 | 456.25 | 220.11 | 0.00 | 33.42 | 0.00 | 17.13 | 0.00 | 50.55 | 726.91 |
| 5 | Kinnaur | 32.86 | 384.90 | 24.46 | 256.60 | 70.44 | 0.00 | 97.35 | 0.00 | 91.36 | 674.36 | 283.61 | 0.00 | 50.79 | 0.00 | 26.35 | 0.00 | 77.14 | 1035.11 |
| 6 | Kotgarh | 34.51 | 256.60 | 25.69 | 230.94 | 56.26 | 0.00 | 81.25 | 0.00 | 76.52 | 522.05 | 239.72 | 0.00 | 40.00 | 0.00 | 23.71 | 0.00 | 63.71 | 825.48 |
| 7 | Kunihar | 192.45 | 0.00 | 23.08 | 230.94 | 21.32 | 0.00 | 47.46 | 0.00 | 37.81 | 423.39 | 129.67 | 0.00 | 23.71 | 0.00 | 23.71 | 0.00 | 47.42 | 600.48 |
| 8 | Nachan | 263.80 | 384.90 | 52.16 | 0.00 | 96.03 | 0.00 | 90.28 | 0.00 | 77.59 | 648.70 | 316.06 | 0.00 | 24.44 | 0.00 | 0.00 | 0.00 | 24.44 | 989.20 |
| 9 | Nalagarh | 289.46 | 384.90 | 55.24 | 0.00 | 98.87 | 0.00 | 92.92 | 0.00 | 79.22 | 674.36 | 326.25 | 0.00 | 24.44 | 0.00 | 0.00 | 0.00 | 24.44 | 1025.05 |
| 10 | Rampur | 225.31 | 384.90 | 47.54 | 0.00 | 91.76 | 0.00 | 86.33 | 0.00 | 75.15 | 610.21 | 300.78 | 0.00 | 24.44 | 0.00 | 0.00 | 0.00 | 24.44 | 935.43 |
| 11 | Shimla | 386.47 | 384.90 | 87.39 | 384.90 | 130.25 | 0.00 | 169.59 | 0.00 | 149.36 | 1156.27 | 536.59 | 0.00 | 63.96 | 0.00 | 39.52 | 0.00 | 103.48 | 1796.34 |
| 12 | Solan | 263.80 | 384.90 | 52.16 | 0.00 | 96.03 | 0.00 | 90.28 | 0.00 | 77.59 | 648.70 | 316.06 | 0.00 | 24.44 | 0.00 | 0.00 | 0.00 | 24.44 | 989.20 |
| 13 | Suket | 257.23 | 384.90 | 47.27 | 0.00 | 91.17 | 0.00 | 85.50 | 0.00 | 72.91 | 642.13 | 296.85 | 0.00 | 24.44 | 0.00 | 0.00 | 0.00 | 24.44 | 963.42 |
| 14 | Theog | 225.31 | 384.90 | 47.54 | 0.00 | 91.76 | 0.00 | 86.33 | 0.00 | 75.15 | 610.21 | 300.78 | 0.00 | 24.44 | 0.00 | 0.00 | 0.00 | 24.44 | 935.43 |
| 15 | Una | 289.46 | 384.90 | 55.24 | 0.00 | 98.87 | 0.00 | 92.92 | 0.00 | 79.22 | 674.36 | 326.25 | 0.00 | 24.44 | 0.00 | 0.00 | 0.00 | 24.44 | 1025.05 |
| **Total** | | **3266.46** | **5003.70** | **717.01** | **1270.17** | **1289.08** | **0.00** | **1367.85** | **0.00** | **1199.88** | **9540.33** | **4573.82** | **0.00** | **448.13** | **0.00** | **130.42** | **0.00** | **578.55** | **14692.70** |

**Table 1.43– Division Wise Proposed Area for Natural Landscape (including Fire Protection and Natural Regeneration) in Himachal Pradesh**

| Sr.No. | Division | Phase I (Area in ha) | | | | | | | | | | | Phase II (Area in ha) | | | | | Grand Total |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | I | II | | III | | IV | | V | | Phase I | | VI | VII | VIII | IX | Phase II | |
| | | Estb | Estb | Maint | Estb | Maint | Estb | Maint | Estb | Maint | Estb | Maint | Maint | Maint | Main | Main | Maint | |
| 1. | Anni | 325 | 368 | 250 | 75 | 450 | 168 | 525 | 240 | 693 | 933 | 693 | 683 | 483 | 408 | 240 | 683 | 933 |
| 2. | Bilaspur | 994 | 519 | 350 | 644 | 650 | 219 | 1294 | 410 | 1513 | 1923 | 1513 | 1573 | 1273 | 629 | 410 | 1573 | 1923 |
| 3. | Hamirpur | 515 | 300 | 300 | 215 | 600 | 0 | 815 | 205 | 815 | 1020 | 815 | 720 | 420 | 205 | 205 | 720 | 1020 |
| 4. | Karsog | 338 | 310 | 100 | 368 | 300 | 110 | 668 | 183 | 778 | 961 | 778 | 861 | 616 | 293 | 143 | 991 | 961 |
| 5. | Kinnaur | 335 | 350 | 100 | 435 | 400 | 50 | 835 | 45 | 885 | 930 | 885 | 830 | 480 | 60 | 0 | 1030 | 930 |
| 6. | Kotgarh | 220 | 285 | 105 | 295 | 305 | 85 | 600 | 0 | 685 | 685 | 685 | 580 | 380 | 85 | 0 | 760 | 685 |
| 7. | Kunihar | 195 | 215 | 150 | 225 | 150 | 215 | 375 | 0 | 590 | 590 | 590 | 440 | 440 | 215 | 0 | 620 | 590 |
| 8. | Nachan | 280 | 540 | 280 | 0 | 580 | 240 | 580 | 120 | 820 | 940 | 820 | 660 | 360 | 360 | 120 | 660 | 940 |
| 9. | Nalagarh | 737 | 850 | 300 | 437 | 600 | 550 | 1037 | 200 | 1587 | 1787 | 1587 | 1487 | 1187 | 750 | 200 | 1487 | 1787 |
| 10. | Rampur | 365 | 345 | 250 | 115 | 550 | 45 | 665 | 50 | 710 | 760 | 710 | 510 | 175 | 60 | 10 | 510 | 760 |
| 11. | Shimla | 450 | 430 | 450 | 300 | 750 | 130 | 1050 | 0 | 1180 | 1180 | 1180 | 730 | 430 | 130 | 0 | 1030 | 1180 |
| 12. | Solan | 315 | 300 | 280 | 35 | 580 | 0 | 615 | 0 | 615 | 615 | 615 | 335 | 35 | 0 | 0 | 335 | 615 |
| 13. | Suket | 283 | 385 | 260 | 23 | 560 | 85 | 583 | 260 | 668 | 928 | 668 | 668 | 368 | 345 | 260 | 668 | 928 |
| 14. | Theog | 250 | 435 | 250 | 0 | 550 | 135 | 550 | 130 | 685 | 815 | 685 | 565 | 265 | 265 | 130 | 565 | 815 |
| 15. | Una | 425 | 583 | 300 | 125 | 600 | 283 | 725 | 268 | 1008 | 1276 | 1008 | 976 | 676 | 551 | 268 | 976 | 1276 |
| 16. | Spiti Wildlife | 25 | 200 | 0 | 25 | 0 | 200 | 25 | 100 | 225 | 325 | 225 | 325 | 325 | 200 | 100 | 325 | 325 |
| **TOTAL** | | **6052** | **6415** | **3725** | **3317** | **7625** | **2515** | **10942** | **2211** | **13457** | **15668** | **13457** | **11943** | **7913** | **4556** | **2086** | **12933** | **15668** |

## Table 1.44-Division Wise Proposed Cost for Natural Landscape (including Fire Protection and Natural Regeneration) in Himachal Pradesh

| Sr.No. | DIVISION | Phase I | | | | | | | | | | | Phase II | | | | | Grand Total |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | I | II | | III | | IV | | V | | Phase I | | VI | VII | VIII | IX | Phase II | |
| | | Estb | Estb | Maint | Estb | Maint | Estb | Maint | Estb | Maint | Estb | Maint | Maint | Maint | Maint | Maint | Maint | |
| 1. | Anni | 233.76 | 377.47 | 47.54 | 312.71 | 76.37 | 427.26 | 101.11 | 146.94 | 142.96 | 1498.11 | 367.98 | 155.07 | 89.92 | 50.45 | 11.40 | 306.85 | **2173.00** |
| 2. | Bilaspur | 369.09 | 1194.97 | 72.00 | 678.00 | 116.03 | 615.29 | 354.56 | 232.51 | 354.22 | 3089.87 | 896.81 | 388.57 | 221.36 | 114.90 | 34.01 | 758.83 | **4745.55** |
| 3. | Hamirpur | 307.42 | 652.04 | 55.24 | 151.69 | 98.87 | 255.78 | 177.22 | 130.99 | 146.81 | 1497.92 | 478.13 | 161.49 | 83.81 | 53.60 | 17.61 | 316.49 | **2292.55** |
| 4. | Karsog | 67.95 | 589.21 | 24.46 | 475.84 | 55.05 | 324.95 | 155.46 | 108.31 | 167.51 | 1566.25 | 402.48 | 168.06 | 92.27 | 36.47 | 6.28 | 303.08 | **2271.81** |
| 5. | Kinnaur | 59.06 | 710.78 | 24.46 | 440.09 | 70.44 | 84.96 | 161.61 | 10.47 | 147.89 | 1305.34 | 404.40 | 98.30 | 38.80 | 2.60 | 0.00 | 139.71 | **1849.44** |
| 6. | Kotgarh | 45.41 | 414.64 | 25.69 | 421.75 | 56.26 | 58.75 | 125.24 | 0.00 | 140.58 | 940.55 | 347.77 | 87.58 | 48.09 | 3.70 | 0.00 | 139.36 | **1427.69** |
| 7. | Kunihar | 209.31 | 129.86 | 23.08 | 530.09 | 21.32 | 123.24 | 66.29 | 0.00 | 137.90 | 992.49 | 248.58 | 88.93 | 73.78 | 17.26 | 0.00 | 179.98 | **1421.05** |
| 8. | Nachan | 263.80 | 411.59 | 52.16 | 356.47 | 96.03 | 326.94 | 90.28 | 76.68 | 167.54 | 1435.48 | 406.01 | 121.89 | 76.91 | 32.77 | 10.31 | 241.87 | **2083.40** |
| 9. | Nalagarh | 335.06 | 967.37 | 55.24 | 908.61 | 98.87 | 523.31 | 248.48 | 98.79 | 392.88 | 2833.16 | 795.47 | 344.96 | 217.57 | 92.28 | 17.18 | 671.98 | **4300.55** |
| 10. | Rampur | 238.50 | 540.81 | 47.54 | 124.36 | 91.76 | 86.23 | 119.76 | 14.48 | 110.44 | 1004.38 | 369.51 | 60.20 | 17.13 | 4.32 | 0.86 | 82.51 | **1456.40** |
| 11. | Shimla | 386.47 | 400.32 | 87.39 | 561.02 | 130.25 | 87.58 | 169.59 | 0.00 | 197.54 | 1435.40 | 584.77 | 93.14 | 62.70 | 3.56 | 0.00 | 159.40 | **2179.57** |
| 12. | Solan | 266.74 | 426.68 | 52.16 | 18.11 | 96.03 | 0.00 | 102.28 | 0.00 | 87.27 | 711.53 | 337.74 | 32.46 | 3.01 | 0.00 | 0.00 | 35.47 | **1084.73** |
| 13. | Suket | 259.16 | 421.98 | 47.27 | 146.09 | 91.17 | 371.50 | 94.65 | 144.47 | 110.08 | 1343.20 | 343.17 | 142.60 | 85.93 | 59.68 | 17.12 | 305.34 | **1991.72** |
| 14. | Theog | 225.31 | 398.40 | 47.54 | 209.82 | 91.76 | 289.10 | 86.33 | 95.89 | 125.15 | 1218.51 | 350.78 | 100.54 | 48.67 | 21.72 | 0.76 | 171.69 | **1740.98** |
| 15. | Una | 299.45 | 569.78 | 55.24 | 426.71 | 98.87 | 470.40 | 134.98 | 134.02 | 215.06 | 1900.36 | 504.15 | 221.88 | 149.20 | 84.94 | 23.02 | 479.03 | **2883.55** |
| 16. | Spiti Wildlife | 0.00 | 63.05 | 0.00 | 323.88 | 0.00 | 157.52 | 7.00 | 105.39 | 70.12 | 649.83 | 77.12 | 101.85 | 70.40 | 26.37 | 0.73 | 199.35 | **926.31** |
| **Total** | | **3566.49** | **8268.95** | **717.01** | **6085.24** | **1289.08** | **4202.81** | **2194.84** | **1298.94** | **2713.95** | **23422.38** | **6914.87** | **2367.52** | **1379.55** | **604.62** | **139.28** | **4490.94** | **34828.30** |

## Table 1.45 – Division Wise Proposed Extent of Plantations in Agriculture Landscapes in Himachal Pradesh

| Sr. No | Division | YEAR | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Phase I ( Extent of Area in ha) | | | | | | | | | Phase I | | Phase II | Phase II | Total Area |
| | | I | II | | III | | IV | | V | | Total (ha) | | VI | | ha |
| | | Estb | Estb | Maint | Estb | Maint | Estb | Maint | Estb | Maint | Estb | Maint | Maint | Total | |
| 1 | Anni | 50 | 50 | 50 | 90 | 100 | 0 | 190 | 0 | 140 | 190 | 190 | 90 | 90 | 190 |
| 2 | Bilaspur | 24 | 24 | 24 | 24 | 48 | 0 | 72 | 0 | 48 | 72 | 72 | 24 | 24 | 72 |
| 3 | Hamirpur | 65 | 63 | 65 | 20 | 128 | 0 | 148 | 0 | 83 | 148 | 148 | 20 | 20 | 148 |
| 4 | Karsog | 10 | 40 | 10 | 72 | 50 | 0 | 122 | 0 | 112 | 122 | 122 | 72 | 72 | 122 |
| 5 | Kinnaur | 50 | 50 | 50 | 47 | 100 | 0 | 147 | 0 | 97 | 147 | 147 | 47 | 47 | 147 |
| 6 | Kotgarh | 60 | 60 | 60 | 50 | 120 | 0 | 170 | 0 | 110 | 170 | 170 | 50 | 50 | 170 |
| 7 | Kunihar | 88 | 50 | 88 | 35 | 138 | 0 | 173 | 0 | 85 | 173 | 173 | 35 | 35 | 173 |
| 8 | Nachan | 50 | 58 | 50 | 50 | 108 | 0 | 158 | 0 | 108 | 158 | 158 | 50 | 50 | 158 |
| 9 | Nalagarh | 72 | 62 | 72 | 50 | 134 | 0 | 184 | 0 | 112 | 184 | 184 | 50 | 50 | 184 |
| 10 | Rampur | 60 | 60 | 60 | 50 | 120 | 0 | 170 | 0 | 110 | 170 | 170 | 50 | 50 | 170 |
| 11 | Shimla | 40 | 0 | 40 | 0 | 40 | 0 | 40 | 0 | 0 | 40 | 40 | 0 | 0 | 40 |
| 12 | Solan | 60 | 60 | 60 | 60 | 120 | 0 | 180 | 0 | 120 | 180 | 180 | 60 | 60 | 180 |
| 13 | Suket | 60 | 65 | 60 | 60 | 125 | 0 | 185 | 0 | 125 | 185 | 185 | 60 | 60 | 185 |
| 14 | Theog | 58 | 50 | 58 | 47 | 108 | 0 | 155 | 0 | 97 | 155 | 155 | 47 | 47 | 155 |
| 15 | Una | 60 | 52 | 60 | 58 | 112 | 0 | 170 | 0 | 110 | 170 | 170 | 58 | 58 | 170 |
| **Total** | | **807** | **744** | **807** | **713** | **1551** | 0 | **2264** | 0 | **1457** | **2264** | **2264** | **713** | **713** | **2264** |

**Table 1.46 –Division Wise Projected Cost of Plantations in Agriculture Landscapes in Himachal Pradesh**

| S. No | Division | Year | | | | | | | | | | | | Total Cost in lakh Phase I and II |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Phase I (Rs. in Lakhs) | | | | | | | | | | Phase II | | |
| | | I | II | | III | | IV | | V | | Total | | VI | Total |
| | | Estb | Estb | Maint | Estb | Maint | Estb | Maint | Estb | Maint | Estb | Maint | Maint | Maint |
| 1 | Anni | 8.40 | 8.40 | 4.50 | 12.00 | 9.31 | 0.00 | 16.39 | 0.00 | 12.02 | 28.80 | 42.22 | 7.36 | 7.36 | 78.38 |
| 2 | Bilaspur | 6.84 | 6.84 | 3.66 | 6.84 | 7.58 | 0.00 | 11.77 | 0.00 | 8.11 | 20.52 | 31.12 | 4.19 | 4.19 | 55.83 |
| 3 | Hamirpur | 11.70 | 12.69 | 6.26 | 9.60 | 13.49 | 0.00 | 19.58 | 0.00 | 13.27 | 33.99 | 52.60 | 5.88 | 5.88 | 92.47 |
| 4 | Karsog | 4.80 | 3.60 | 2.57 | 15.06 | 4.68 | 0.00 | 13.06 | 0.00 | 10.84 | 23.46 | 31.15 | 9.23 | 9.23 | 63.84 |
| 5 | Kinnaur | 6.45 | 8.40 | 3.45 | 6.96 | 8.19 | 0.00 | 12.49 | 0.00 | 9.13 | 21.81 | 33.26 | 4.27 | 4.27 | 59.34 |
| 6 | Kotgarh | 9.30 | 9.30 | 4.98 | 8.40 | 10.31 | 0.00 | 15.53 | 0.00 | 10.51 | 27.00 | 41.33 | 5.15 | 5.15 | 73.48 |
| 7 | Kunihar | 11.04 | 8.40 | 5.91 | 3.15 | 10.82 | 0.00 | 13.27 | 0.00 | 6.95 | 22.59 | 36.95 | 1.93 | 1.93 | 61.47 |
| 8 | Nachan | 8.40 | 12.24 | 4.50 | 8.40 | 11.36 | 0.00 | 16.66 | 0.00 | 12.31 | 29.04 | 44.83 | 5.15 | 5.15 | 79.02 |
| 9 | Nalagarh | 15.06 | 10.26 | 8.06 | 8.40 | 14.12 | 0.00 | 19.61 | 0.00 | 11.10 | 33.72 | 52.89 | 5.15 | 5.15 | 91.76 |
| 10 | Rampur | 9.30 | 9.30 | 4.98 | 8.40 | 10.31 | 0.00 | 15.53 | 0.00 | 10.51 | 27.00 | 41.33 | 5.15 | 5.15 | 73.48 |
| 11 | Shimla | 19.20 | 0.00 | 10.27 | 0.00 | 10.99 | 0.00 | 11.76 | 0.00 | 0.00 | 19.20 | 33.02 | 0.00 | 0.00 | 52.22 |
| 12 | Solan | 9.30 | 9.30 | 4.98 | 9.30 | 10.31 | 0.00 | 16.01 | 0.00 | 11.03 | 27.90 | 42.33 | 5.70 | 5.70 | 75.93 |
| 13 | Suket | 9.30 | 13.65 | 4.98 | 9.30 | 12.64 | 0.00 | 18.50 | 0.00 | 13.69 | 32.25 | 49.81 | 5.70 | 5.70 | 87.76 |
| 14 | Theog | 8.34 | 8.40 | 4.46 | 6.96 | 9.28 | 0.00 | 13.65 | 0.00 | 9.13 | 23.70 | 36.52 | 4.27 | 4.27 | 64.49 |
| 15 | Una | 9.30 | 9.36 | 4.98 | 9.12 | 10.34 | 0.00 | 15.94 | 0.00 | 10.96 | 27.78 | 42.22 | 5.59 | 5.59 | 75.59 |
| **Total** | | **146.73** | **130.14** | **78.54** | **121.89** | **153.73** | **0.00** | **229.75** | **0.00** | **149.56** | **398.76** | **611.58** | **74.72** | **74.72** | **1085.06** |

**Table 1.47 – Division Wise Proposed Extent of Plantations in Urban Landscapes in Himachal Pradesh**

| Sr. No | Division | Phase I: Year Wise Area (ha) | | | | | | | Phase I Total Area (ha) | | Phase II Area (ha) | Phase II Total Area (ha) | Grand Total Area (ha) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | I | II | | III | | IV | V | | | VI | | |
| | | Estb | Estb | Maint | Estb | Maint | Maint | Maint | Estb | Maint | Maint | Maint | Estb. |
| 1 | Anni | 21.12 | 18 | 21.12 | 15 | 39.12 | 54.12 | 33 | 54.12 | 54.12 | 15 | 15 | 54.12 |
| 2 | Bilaspur | 11.25 | 15.8 | 11.25 | 15 | 27.05 | 42.05 | 30.8 | 42.05 | 42.05 | 15 | 15 | 42.05 |
| 3 | Hamirpur | 19.2 | 20 | 19.2 | 20 | 39.2 | 59.2 | 40 | 59.2 | 59.2 | 20 | 20 | 59.2 |
| 4 | Karsog | 21.2 | 18 | 21.2 | 16 | 39.2 | 55.2 | 34 | 55.2 | 55.2 | 16 | 16 | 55.2 |
| 5 | Kinnaur | 19.2 | 20.65 | 19.2 | 20 | 39.85 | 59.85 | 40.65 | 59.85 | 59.85 | 20 | 20 | 59.85 |
| 6 | Kotgarh | 21.2 | 15 | 21.2 | 16 | 36.2 | 52.2 | 31 | 52.2 | 52.2 | 16 | 16 | 52.2 |
| 7 | Kunihar | 21.1 | 20 | 21.1 | 20 | 41.1 | 61.1 | 40 | 61.1 | 61.1 | 20 | 20 | 61.1 |
| 8 | Nachan | 11.2 | 20 | 11.2 | 20 | 31.2 | 51.2 | 40 | 51.2 | 51.2 | 20 | 20 | 51.2 |
| 9 | Nalagarh | 21.2 | 20.4 | 21.2 | 20 | 41.6 | 61.6 | 40.4 | 61.6 | 61.6 | 20 | 20 | 61.6 |
| 10 | Rampur | 21.2 | 12.75 | 21.2 | 20 | 33.95 | 53.95 | 32.75 | 53.95 | 53.95 | 20 | 20 | 53.95 |
| 11 | Shimla | 20.7 | 21 | 20.7 | 20 | 41.7 | 61.7 | 41 | 61.7 | 61.7 | 20 | 20 | 61.7 |
| 12 | Shimla Urban | 21.2 | 20 | 21.2 | 20 | 41.2 | 61.2 | 40 | 61.2 | 61.2 | 20 | 20 | 61.2 |
| 13 | Solan | 21.25 | 20.5 | 21.25 | 20 | 41.75 | 61.75 | 40.5 | 61.75 | 61.75 | 20 | 20 | 61.75 |
| 14 | Suket | 21.2 | 19 | 21.2 | 18 | 40.2 | 58.2 | 37 | 58.2 | 58.2 | 18 | 18 | 58.2 |
| 15 | Theog | 13.25 | 40 | 13.25 | 40 | 53.25 | 93.25 | 80 | 93.25 | 93.25 | 40 | 40 | 93.25 |
| 16 | Una | 13.3 | 20.65 | 13.3 | 20 | 33.95 | 53.95 | 40.65 | 53.95 | 53.95 | 20 | 20 | 53.95 |
| **Total** | | **298.77** | **321.75** | **298.77** | **320** | **620.52** | **940.52** | **641.75** | **940.52** | **940.52** | **320** | **320** | **940.52** |

## Table 1.48 – Division Wise Projected Cost of Plantations in Urban Landscapes in Himachal Pradesh

| Sr. No. | Division | Phase I: Year Wise Cost (Rs.in Lakhs) | | | | | | | Total Phase I (Rs.in Lakhs) | | Phase II (Rs.in Lakhs) | Total Phase II (Rs.in Lakhs | Total of Phase I and Phase II (Rs.in Lakhs) | | Grand Total (Rs.in Lakhs) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | I | II | | III | | IV | V | | | VI | | | | |
| | | Estb | Estb | Maint | Estb | Maint | Maint | Maint | Estb | Maint | Maint | Maint | Estb. | Maint | |
| 1 | Anni | 85.00 | 46.80 | 25.50 | 39.00 | 31.04 | 33.81 | 14.82 | 170.80 | 105.17 | 5.85 | 5.85 | 170.80 | 111.02 | 281.82 |
| 2 | Bilaspur | 112.25 | 159.00 | 33.68 | 39.00 | 70.15 | 60.34 | 31.65 | 310.25 | 195.82 | 5.85 | 5.85 | 310.25 | 201.67 | 511.92 |
| 3 | Hamirpur | 91.80 | 52.00 | 27.54 | 52.00 | 33.96 | 39.77 | 18.20 | 195.80 | 119.47 | 7.80 | 7.80 | 195.80 | 127.27 | 323.07 |
| 4 | Karsog | 97.00 | 46.80 | 29.10 | 41.60 | 33.44 | 36.39 | 15.34 | 185.40 | 114.27 | 6.24 | 6.24 | 185.40 | 120.51 | 305.91 |
| 5 | Kinnaur | 91.80 | 149.50 | 27.54 | 52.00 | 63.21 | 59.27 | 32.83 | 293.30 | 182.85 | 7.80 | 7.80 | 293.30 | 190.65 | 483.95 |
| 6 | Kotgarh | 97.00 | 39.00 | 29.10 | 41.60 | 31.10 | 34.83 | 14.17 | 177.60 | 109.20 | 6.24 | 6.24 | 177.60 | 115.44 | 293.04 |
| 7 | Kunihar | 82.00 | 52.00 | 24.60 | 52.00 | 32.00 | 38.30 | 18.20 | 186.00 | 113.10 | 7.80 | 7.80 | 186.00 | 120.90 | 306.90 |
| 8 | Nachan | 71.00 | 52.00 | 21.30 | 52.00 | 29.80 | 36.65 | 18.20 | 175.00 | 105.95 | 7.80 | 7.80 | 175.00 | 113.75 | 288.75 |
| 9 | Nalagarh | 97.00 | 112.00 | 29.10 | 52.00 | 53.00 | 52.55 | 27.20 | 261.00 | 161.85 | 7.80 | 7.80 | 261.00 | 169.65 | 430.65 |
| 10 | Rampur | 97.00 | 143.70 | 29.10 | 52.00 | 62.51 | 58.89 | 31.96 | 292.70 | 182.46 | 7.80 | 7.80 | 292.70 | 190.26 | 482.96 |
| 11 | Shimla | 114.30 | 202.00 | 34.29 | 52.00 | 83.46 | 73.15 | 40.70 | 368.30 | 231.60 | 7.80 | 7.80 | 368.30 | 239.40 | 607.70 |
| 12 | Shimla Urban | 97.00 | 52.00 | 29.10 | 52.00 | 35.00 | 40.55 | 18.20 | 201.00 | 122.85 | 7.80 | 7.80 | 201.00 | 130.65 | 331.65 |
| 13 | Solan | 104.50 | 127.00 | 31.35 | 52.00 | 59.00 | 56.68 | 29.45 | 283.50 | 176.48 | 7.80 | 7.80 | 283.50 | 184.28 | 467.78 |
| 14 | Suket | 97.00 | 196.80 | 29.10 | 46.80 | 78.44 | 67.95 | 38.88 | 340.60 | 214.37 | 7.02 | 7.02 | 340.60 | 221.39 | 561.99 |
| 15 | Theog | 83.70 | 104.00 | 25.11 | 104.00 | 47.94 | 64.56 | 36.40 | 291.70 | 174.01 | 15.60 | 15.60 | 291.70 | 189.61 | 481.31 |
| 16 | Una | 91.20 | 149.50 | 27.36 | 52.00 | 63.09 | 59.18 | 32.83 | 292.70 | 182.46 | 7.80 | 7.80 | 292.70 | 190.26 | 482.96 |
| **Total** | | **1509.55** | **1684.10** | **452.87** | **832.00** | **807.14** | **812.87** | **419.03** | **4025.65** | **2491.91** | **124.80** | **124.80** | **4025.65** | **2616.71** | **6642.36** |

**Table 1.49 – Division Wise Proposed Extent for Soil and Moisture Conservation (Area in $m^3$) for Himachal Pradesh**

| Sr. No | Division | Phase I: Year Wise Area ($m^3$) | | | | | Grand Total Extent ($m^3$) |
|---|---|---|---|---|---|---|---|
| | | I | II | III | IV | V | |
| | | Estb | Estb | Estb | Estb | Estb | Estb |
| 1 | Anni | 6710 | 9485 | 7025 | 5570 | 1905 | 30695 |
| 2 | Bilaspur | 6360 | 13322 | 10632 | 7245 | 5220 | 42779 |
| 3 | Hamirpur | 1420 | 3080 | 1750 | 920 | 525 | 7695 |
| 4 | Karsog | 7470 | 4800 | 2215 | 1380 | 1330 | 17195 |
| 5 | Kinnaur | 14085 | 15140 | 11900 | 15830 | 8160 | 65115 |
| 6 | Kotgarh | 7150 | 6320 | 12030 | 4780 | 6970 | 37250 |
| 7 | Kunihar | 14665 | 16920 | 16470 | 17190 | 11640 | 76885 |
| 8 | Nachan | 720 | 2550 | 2900 | 4650 | 2325 | 13145 |
| 9 | Nalagarh | 7891 | 6512 | 6631 | 6940 | 5790 | 33764 |
| 10 | Rampur | 13450 | 13170 | 9340 | 11010 | 7400 | 54370 |
| 11 | Shimla | 10040 | 14565 | 11865 | 8780 | 6560 | 51810 |
| 12 | Shimla Urban | 2060 | 1750 | 2810 | 2090 | 1570 | 10280 |
| 13 | Solan | 10570 | 12220 | 10995 | 10055 | 8385 | 52225 |
| 14 | Suket | 8500 | 8120 | 4080 | 3770 | 5570 | 30040 |
| 15 | Theog | 3410 | 3320 | 2750 | 2500 | 3110 | 15090 |
| 16 | Una | 7980 | 8860 | 10430 | 8665 | 6250 | 42185 |
| **Total** | | **122481** | **140134** | **123823** | **111375** | **82710** | **580523** |

## Table 1.50 – Division Wise Projected Cost for Soil and Moisture Conservation (Rs. in Lakhs) in Himachal Pradesh

| Sr. No | Division | Phase I: Year Wise Cost (Rs. in Lakhs) | | | | | Phase I Total Cost (Rs. in Lakhs) |
|---|---|---|---|---|---|---|---|
| | | I | II | III | IV | V | |
| | | Estb | Estb | Estb | Estb | Estb | Estb |
| 1 | Anni | 151.41 | 176.29 | 145.24 | 82.47 | 55.03 | 610.44 |
| 2 | Bilaspur | 54.68 | 284.75 | 176.32 | 110.84 | 61.61 | 688.20 |
| 3 | Hamirpur | 19.76 | 61.55 | 32.54 | 27.47 | 2.82 | 144.14 |
| 4 | Karsog | 146.11 | 81.84 | 45.86 | 27.79 | 16.79 | 318.39 |
| 5 | Kinnaur | 238.37 | 210.45 | 170.16 | 140.92 | 113.94 | 873.84 |
| 6 | Kotgarh | 87.51 | 78.09 | 67.74 | 129.54 | 56.01 | 418.89 |
| 7 | Kunihar | 414.32 | 377.14 | 455.26 | 339.94 | 201.81 | 1788.47 |
| 8 | Nachan | 10.71 | 59.46 | 101.61 | 45.74 | 68.88 | 286.40 |
| 9 | Nalagarh | 65.39 | 236.71 | 144.80 | 112.88 | 88.24 | 648.02 |
| 10 | Rampur | 358.95 | 357.70 | 308.76 | 205.76 | 157.04 | 1388.21 |
| 11 | Shimla | 214.06 | 325.39 | 299.93 | 193.62 | 130.21 | 1163.21 |
| 12 | Shimla Urban | 51.90 | 56.10 | 47.06 | 32.94 | 56.10 | 244.10 |
| 13 | Solan | 193.53 | 275.53 | 260.75 | 166.20 | 111.49 | 1007.50 |
| 14 | Suket | 201.50 | 153.30 | 118.77 | 100.22 | 96.88 | 670.67 |
| 15 | Theog | 48.55 | 52.93 | 82.53 | 50.60 | 57.13 | 291.74 |
| 16 | Una | 178.33 | 195.37 | 205.15 | 109.84 | 73.95 | 762.64 |
| **Total** | | **2435.08** | **2982.60** | **2662.48** | **1876.77** | **1347.93** | **11304.86** |

**Table 1.51 – Division Wise Proposed Extent (in ha) for Riverine and Riparian Wetland Management and Wildlife Conservation in Himachal Pradesh**

| Sr. No | Division | Phase I: Year Wise Extent of Area (ha) | | | | | | | | | Phase I Total | | Phase II Year Wise Extent of Area (ha) | | | Grand Total (ha) Phase I and Phase II |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | I | II | | III | | IV | | V | | | | VI | VII | Total | |
| | | Estb | Estb | Maint | Estb | Maint | Estb | Maint | Estb | Maint | Estb | Maint | Maint | Maint | Total | |
| 1 | Hamirpur WLS (Bilaspur) | 34 | 0 | 34 | 0 | 34 | 0 | 34 | 0 | 34 | 34 | 34 | 0 | 0 | **0** | 34 |
| 2 | Sarahan Wildlife | 73 | 0 | 73 | 0 | 73 | 0 | 73 | 0 | 73 | 73 | 73 | 0 | 0 | **0** | 73 |
| 3 | Shimla WL | 65 | 0 | 65 | 0 | 65 | 0 | 65 | 0 | 65 | 65 | 65 | 0 | 0 | **0** | 65 |
| 4 | Spiti Wildlife | 75 | 0 | 75 | 0 | 75 | 0 | 75 | 0 | 75 | 75 | 75 | 0 | 0 | **0** | 75 |
| 5 | W L Kullu | 0 | 30 | 0 | 0 | 30 | 0 | 30 | 0 | 30 | 30 | 30 | 30 | 0 | **50** | 30 |
| **Total** | | **247** | **30** | **247** | **0** | **277** | **0** | **277** | **0** | **277** | **277** | **277** | **30** | **0** | **30** | **277** |

**Table 1.52 – Division Wise Projected Cost (Rs. in Lakhs) for Riverine and Riparian Wetland Management and Wildlife Conservation in Himachal Pradesh**

| Sr. No. | Division | Phase I: Year Wise Cost (Rs. in Lakhs) | | | | | | | | | | | Phase II: Year Wise Cost (Rs. in Lakhs) | | | Total Cost Phase I and II (Rs in Lakh) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | I | II | | III | | IV | | V | | Total | | VI | VII | Total (Rs in Lakh) | |
| | | Estb | Estb | Maint | Estb | Maint | Estb | Maint | Estb | Maint | Estb | Maint | Maint | Maint | | |
| 1 | **Hamirpur WLS (Bilaspur)** | 108.80 | 0.00 | 95.20 | 0.00 | 64.60 | 0.00 | 40.80 | 0.00 | 30.60 | 108.80 | 231.20 | 0.00 | 0.00 | 0.00 | 340.00 |
| 2 | **Sarahan Wildlife** | 233.60 | 0.00 | 204.40 | 0.00 | 138.70 | 0.00 | 87.60 | 0.00 | 65.70 | 233.60 | 496.40 | 0.00 | 0.00 | 0.00 | 730.00 |
| 3 | **Shimla WL** | 208.00 | 0.00 | 182.00 | 0.00 | 123.50 | 0.00 | 78.00 | 0.00 | 58.50 | 208.00 | 442.00 | 0.00 | 0.00 | 0.00 | 650.00 |
| 4 | **Spiti Wildlife** | 240.00 | 0.00 | 210.00 | 0.00 | 142.50 | 0.00 | 90.00 | 0.00 | 67.50 | 240.00 | 510.00 | 0.00 | 0.00 | 0.00 | 750.00 |
| 5 | **W L Kullu** | 0.00 | 96.00 | 0.00 | 0.00 | 84.00 | 0.00 | 57.00 | 0.00 | 36.00 | 96.00 | 177.00 | 27.00 | 0.00 | 27.00 | 300.00 |
| **Total** | | **790.40** | **96.00** | **691.60** | **0.00** | **553.30** | **0.00** | **353.40** | **0.00** | **258.30** | **886.40** | **1856.60** | **27.00** | **0.00** | **27.00** | **2770.00** |

**Table 1.53 – Division Wise Proposed Extent (in ha) for Wetland Conservation in Himachal Pradesh**

| Sr. No | Division | Phase I: Year Wise Extent of Area (ha) | | | | | | | | | Phase I Total | | Phase II Year Wise Extent of Area (ha) | | | Grand Total (ha) Phase I and Phase II |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | I | II | | III | | IV | | V | | | | VI | VII | Total | |
| | | Estb | Estb | Maint | Estb | Maint | Estb | Maint | Estb | Maint | Estb | Maint | Maint | Maint | Total | |
| 1 | Sarahan Wildlife | 15 | 0 | 15.00 | 0 | 15 | 0 | 15 | 0 | 15 | 15 | 15 | 0 | 0 | 0 | 15 |
| 2 | Shimla WL | 10 | 0 | 10.00 | 0 | 10 | 0 | 10 | 0 | 10 | 10 | 10 | 0 | 0 | 0 | 10 |
| 3 | Spiti Wildlife | 15 | 0 | 15.00 | 0 | 15 | 0 | 15 | 0 | 15 | 15 | 15 | 0 | 0 | 0 | 15 |
| **Total** | | **40** | **0** | **40** | **0** | **40** | **0** | **40** | **0** | **40** | **40** | **40** | 0 | 0 | 0 | 40 |

**Table 1.54– Division Wise Projected Cost (Rs. in Lakhs) for Wetland Conservation in Himachal Pradesh**

| Sr. No. | Division | Phase I: Year Wise Cost (Rs. in Lakhs) | | | | | | | | | | | Phase II: Year Wise Cost (Rs. in Lakhs) | | | Total Cost Phase I and II (Rs in Lakh) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | I | II | | III | | IV | | V | | Total | | VI | VII | Total (Rs in Lakh) | |
| | | Estb | Estb | Maint | Estb | Maint | Estb | Maint | Estb | Maint | Estb | Maint | Maint | Maint | | |
| **1** | Sarahan Wildlife | 42.00 | 0.00 | 37.50 | 0.00 | 24.00 | 0.00 | 18.00 | 0.00 | 13.50 | 42.00 | 93.00 | 0.00 | 0.00 | 0.00 | 135.00 |
| **2** | Shimla WL | 28.00 | 0.00 | 25.00 | 0.00 | 16.00 | 0.00 | 12.00 | 0.00 | 9.00 | 28.00 | 62.00 | 0.00 | 0.00 | 0.00 | 90.00 |
| **3** | Spiti Wildlife | 42.00 | 0.00 | 37.50 | 0.00 | 24.00 | 0.00 | 18.00 | 0.00 | 13.50 | 42.00 | 93.00 | 0.00 | 0.00 | 0.00 | 135.00 |
| **Total** | | **112.00** | **0.00** | **100.00** | **0.00** | **64.00** | **0.00** | **48.00** | **0.00** | **36.00** | **112.00** | **248.00** | **0.00** | **0.00** | **0.00** | **360.00** |

**Table 1.55– Model/ Activity Wise Area and Cost for Forestry Intervention in Himachal Pradesh**

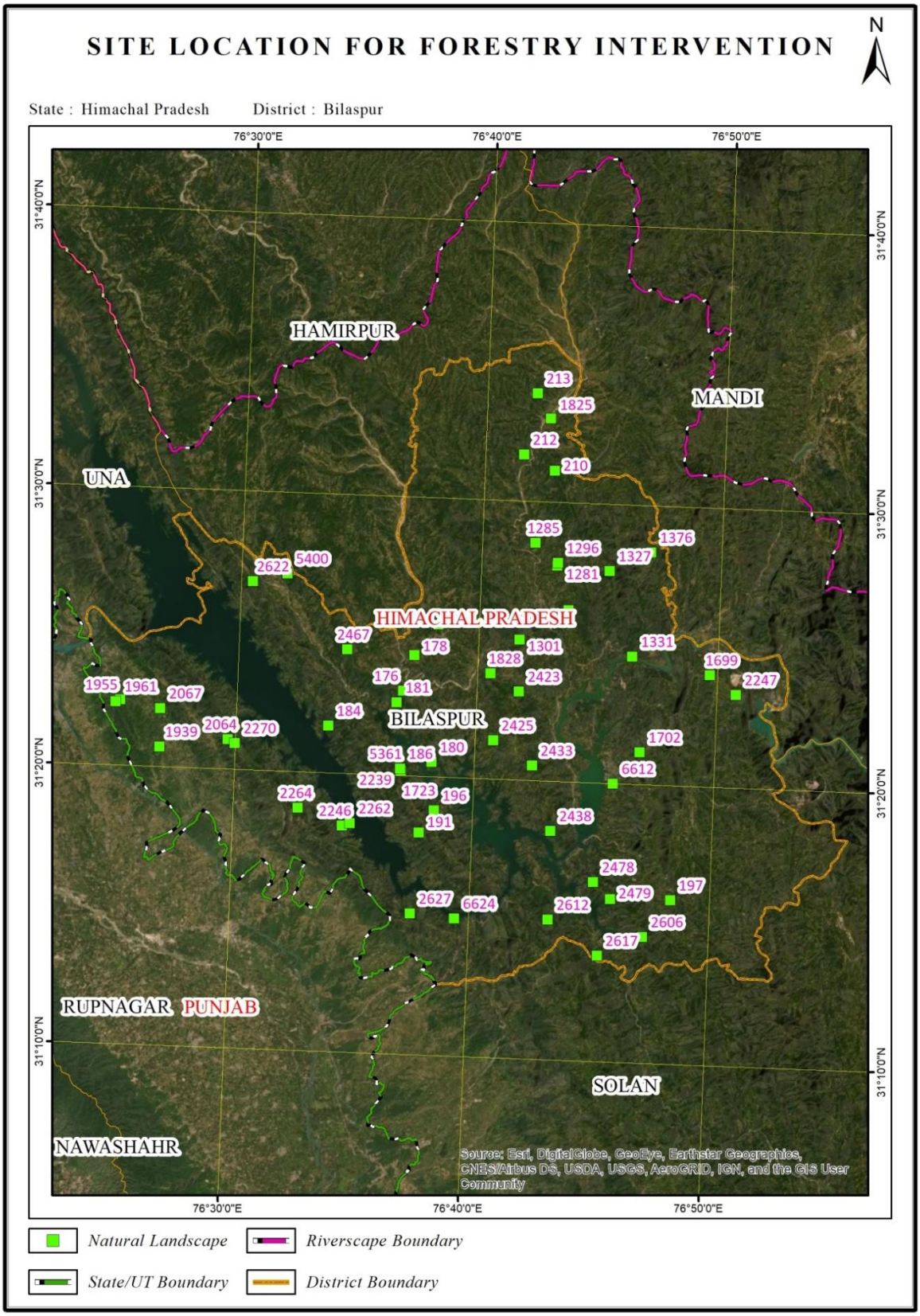
| State | Landscape | Model/ Activity | Area (ha) | Cost (Rs. in Crore) |
|---|---|---|---|---|
| **Himachal Pradesh** | **Natural** | SL/HP/NL/01 - Cold Desert Greening | 100 | 386.78 |
| | | SL/HP/NL/02 - Cold Desert Conservation | 100 | 255.09 |
| | | SL/HP/NL/03 - Alpine Conservation | 60 | 144.46 |
| | | SL/NL/H/04 - Sub-Alpine Enrichment | 315 | 600.97 |
| | | SL/NL/H/05 - Dry Temperate Conifer Forest Enrichment | 10 | 35.75 |
| | | SL/NL/H/06 - Temperate Conifer Forest | 681 | 2070.12 |
| | | SL/NL/H/07 - Temperate Mixed Forest | 665 | 2026.54 |
| | | SL/HP/NL/08 - Pasture and Grazing Land Development | 185 | 420.97 |
| | | SL/HP/NL/09 - Himalayan Chir Pine Forest | 1442 | 4375.86 |
| | | SL/HP/NL/10 - Himalayan Mixed Forest | 820 | 2238.19 |
| | | SL/HP/NL/11 - Sub-Tropical Dry Deciduous Forest | 2039 | 5471.16 |
| | | SL/HP/NL/12 - Eradication of Lantana (> 50%) | 576 | 1822.03 |
| | | SL/HP/NL/13 - Control/ Removal of Invasive Species or <50% Lantana | 60 | 184.21 |
| | | SL/HP/NL/14 - Protection Model for Natural Regeneration | 7030 | 12649.30 |
| | | SL/HP/NL/15 - Fire Protection Model | 1585 | 2043.40 |
| | **Eco -Task Force** | SL/HP/NL/16 - Eco -Task Force | 2000 | 8254.00 |
| | **Agriculture** | SL/HP/AL/01 - Boundary Plantation Model | 1764 | 432.0275 |
| | | SL/HP/AL/02 - Block Plantation Model | 500 | 652.91 |
| | **Urban** | SL/HP/UL/01 - Bioremediation and Bio filtration | 17.25 | 426.95 |
| | | SL/HP/UL/02 - Riverfront Development | 4.75 | 1175.64 |
| | | SL/HP/UL/03 - Institution Plantation | 914 | 3921.06 |
| | | SL/HP/UL/04- Eco-Park Development | 4.52 | 1118.71 |
| | **Conservation Interventions** | SL/HP/CI/01- Brushwood Interventions | 126990 | 380.99 |
| | | SL/HP/CI/02- Dry Stone Activities | 181641 | 3269.54 |
| | | SL/HP/CI/03- Crate Wire Activity | 122031 | 5491.41 |
| | | SL/HP/CI/04- Water Pond | 120865 | 423.14 |
| | | SL/HP/CI/05- Silt Detention Dam Type Activity | 28996 | 1739.76 |
| | **Other Interventions** | SL/HP/CI/06 Riverine and Riparian Management | 277 | 2770.00 |
| | | SL/HP/CI/07 Wetland Management | 40 | 360.00 |

**Table 1.56– Year-Wise Breakup ofProjected Cost on Supporting Activities in Himachal Pradesh**

| Sr. No. | Activity | Year | | | | | | | | | | | | Grand Total |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | (Rs. in lakh) | | | | | | | | | | | Total | (Cost Rs. in lakh) |
| | | Phase I | | | | | Total | Phase II | | | | | Phase II | Phase I+II |
| | | I | II | III | IV | V | Phase I | I | II | III | IV | V | | |
| 1 | **Policy Level Interventions** | 4.82 | 3.77 | 3.95 | 4.14 | 4.35 | **21.03** | 2.26 | 0.00 | 0.00 | 0.00 | 0.00 | 2.26 | **23.28** |
| 2 | **Research Activities** | 48.19 | 50.60 | 53.13 | 55.79 | 58.58 | **266.29** | 30.75 | 32.29 | 33.91 | 35.60 | 37.38 | 169.93 | **436.22** |
| 3 | **Capacity Development** | 151.00 | 142.80 | 169.94 | 157.44 | 165.31 | **786.49** | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | **786.49** |
| 4 | **Awareness** | 128.00 | 134.40 | 141.12 | 148.18 | 155.58 | **707.28** | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | **707.28** |
| 5 | **Participatory Monitoring** | 24.10 | 21.69 | 19.52 | 17.57 | 15.81 | **98.68** | 14.23 | 12.81 | 11.53 | 10.37 | 9.34 | 58.27 | **156.94** |
| 6 | **Cost of PMUs of State Level Implementing Agencies** | 240.96 | 188.25 | 197.50 | 207.21 | 217.41 | **1051.34** | 112.82 | 106.54 | 100.53 | 94.86 | 89.51 | 504.27 | **1555.60** |
| 7 | **Evaluation** | 0.00 | 0.00 | 62.67 | 0.00 | 0.00 | **62.67** | 105.13 | 0.00 | 0.00 | 0.00 | 155.56 | 260.69 | **323.37** |
| 8 | **Contingency and Miscellaneous Activities** | 1.20 | 0.94 | 0.99 | 1.04 | 1.09 | **5.26** | 0.56 | 0.53 | 0.50 | 0.47 | 0.45 | 2.52 | **7.78** |
| **Grand Total** | | **598.27** | **542.44** | **648.82** | **591.36** | **618.13** | **2999.02** | **265.75** | **152.17** | **146.47** | **141.31** | **292.24** | **997.94** | **3996.96** |

**Table 1.57– Year-Wise Projected Cost of State Project Management Unit of Himachal Pradesh**

| Sr.No. | Activities | Year (Cost Rs. in lakh) | | | | | | | | | | | Total Phase II | Grand Total (Cost Rs. in lakh) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Phase I | | | | | Total | Phase II | | | | | | |
| | | I | II | III | IV | V | Phase I | VI | VII | VIII | IX | X | | |
| **1** | Project Staff - Salary and Wages ( PED+PEO+SPA+JPA2+PA 2+PM+OA3+A3+DEO for each Division-15) and 50% staff in Phase II | 150.60 | 158.13 | 166.04 | 174.34 | 183.06 | **832.16** | 96.10 | 90.82 | 85.82 | 81.10 | 76.64 | **430.49** | **1262.65** |
| **2** | Office Expenses (including executing Divisions) | 15.06 | 1.58 | 1.66 | 1.74 | 1.83 | **21.88** | 0.96 | 0.91 | 0.86 | 0.81 | 0.77 | **4.30** | **26.18** |
| **3** | POLand maintence (including executing Divisions) | 15.06 | 1.58 | 1.66 | 1.74 | 1.83 | **21.88** | 0.96 | 0.82 | 0.60 | 0.41 | 0.23 | **3.01** | **24.89** |
| **4** | Travel Expenses (including executing Divisions) | 15.06 | 15.81 | 16.60 | 17.43 | 18.31 | **83.22** | 9.61 | 9.08 | 8.58 | 8.11 | 7.66 | **43.05** | **126.27** |
| **5** | Equipment – Office and Field | 7.53 | 0.08 | 0.08 | 0.08 | 0.08 | **7.83** | 0.08 | 0.08 | 0.08 | 0.08 | 0.08 | **0.38** | **8.21** |
| **6** | Purchase of Equipment - Computer, RS and GIS and IT and maintenance | 15.06 | 3.01 | 3.01 | 3.01 | 3.01 | **27.11** | 0.15 | 0.15 | 0.15 | 0.15 | 0.15 | **0.75** | **27.86** |
| **7** | Furniture and Fixtures | 15.06 | 0.15 | 0.15 | 0.15 | 0.15 | **15.66** | 0.15 | 0.15 | 0.15 | 0.15 | 0.15 | **0.75** | **16.42** |
| **8** | Contingency and Miscellaneous | 7.53 | 7.91 | 8.30 | 8.72 | 9.15 | **41.61** | 4.81 | 4.54 | 4.29 | 4.06 | 3.83 | **21.52** | **63.13** |
| **Grand Total** | | **240.96** | **188.25** | **197.50** | **207.21** | **217.41** | **1051.34** | **112.82** | **106.54** | **100.53** | **94.86** | **89.51** | **504.27** | **1555.60** |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RUPNAGAR
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NAWASHAHR
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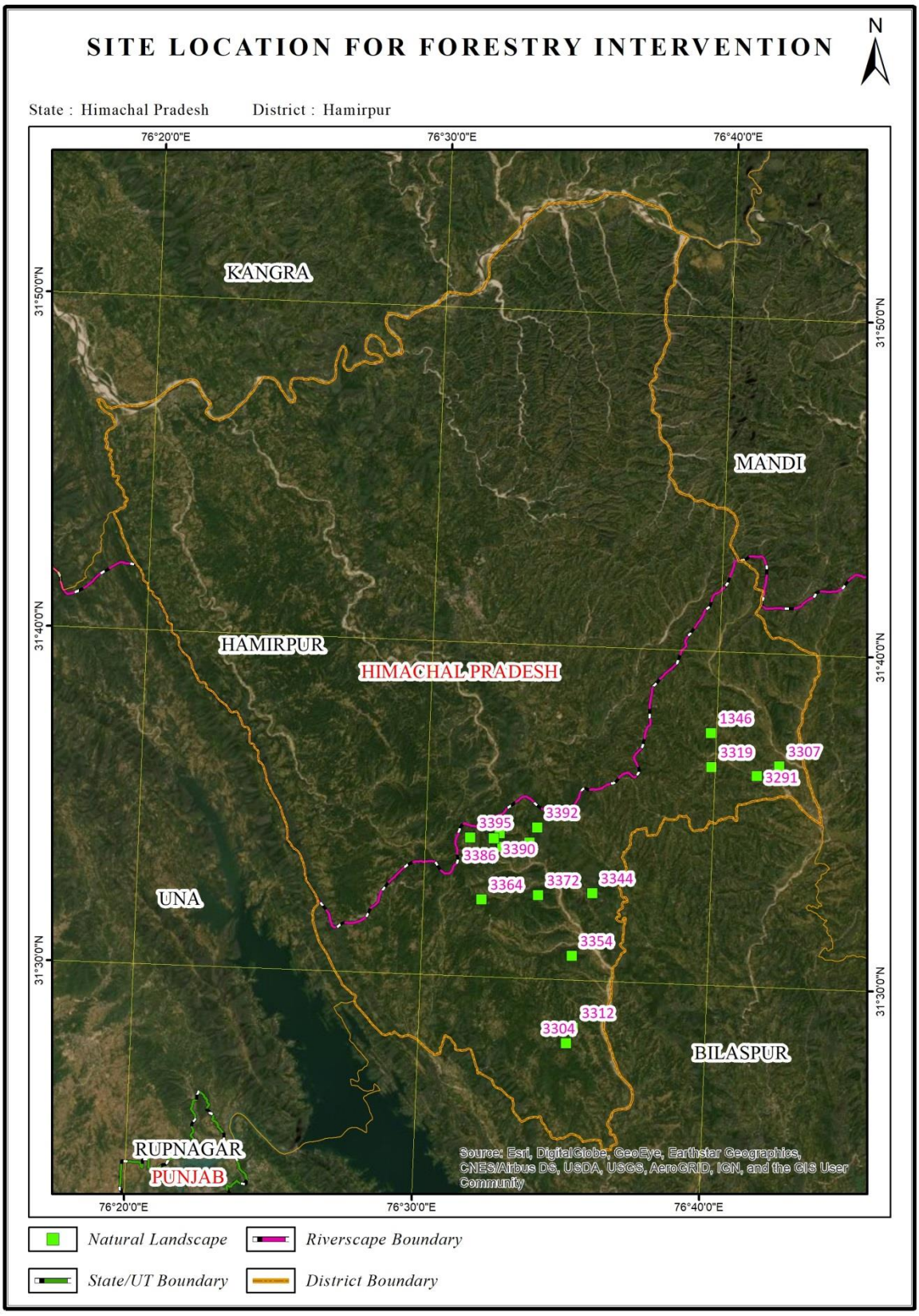
Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community
Natural Landscape
Riverscape Boundary
State/UT Boundary
District Boundary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MANDI
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HIMACHAL PRADESH
UNA
BILASPUR
RUPNAGAR
PUNJAB
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3291
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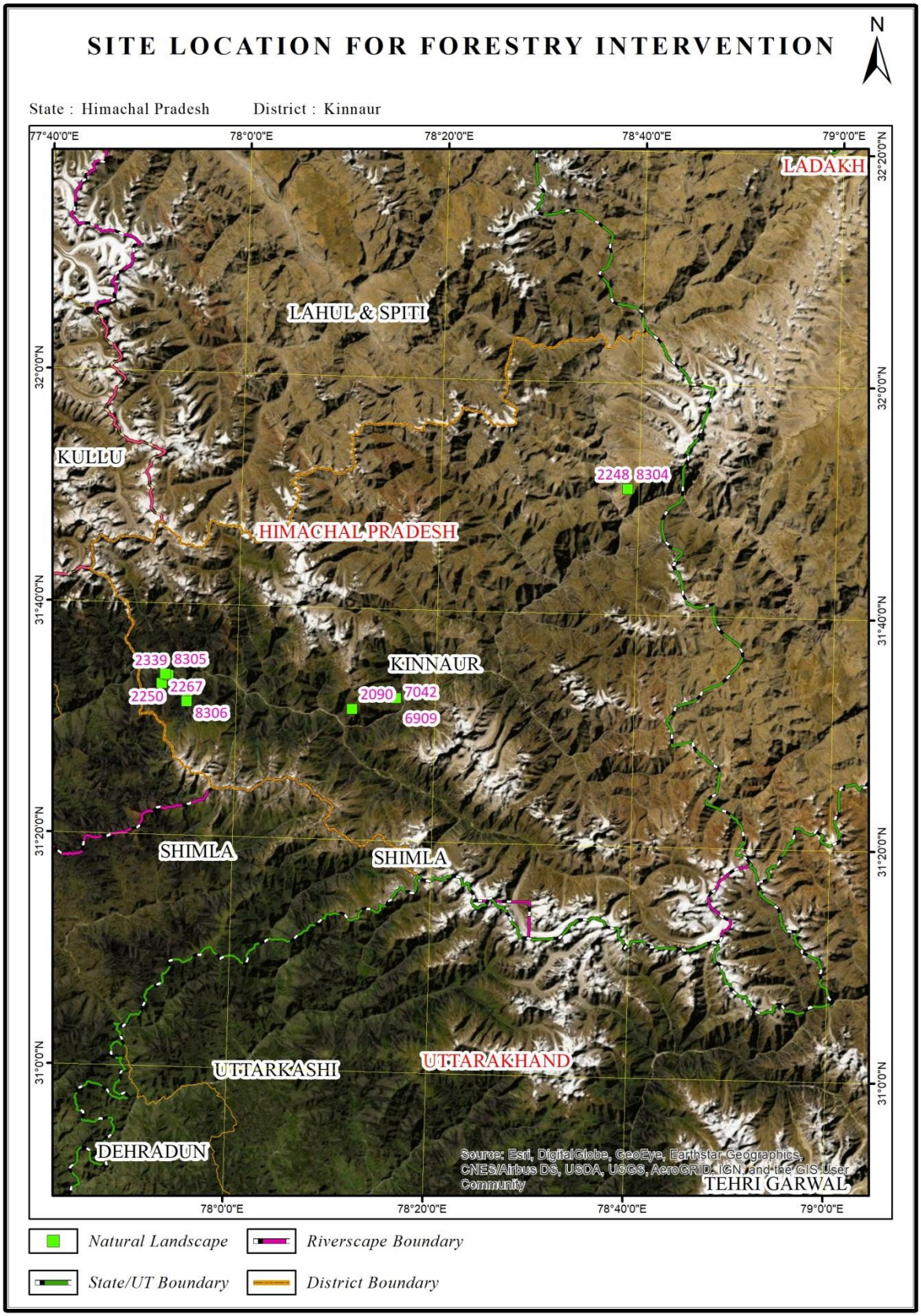
Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community
Natural Landscape
Riverscape Boundary
State/UT Boundary
District Boundary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KINNAUR
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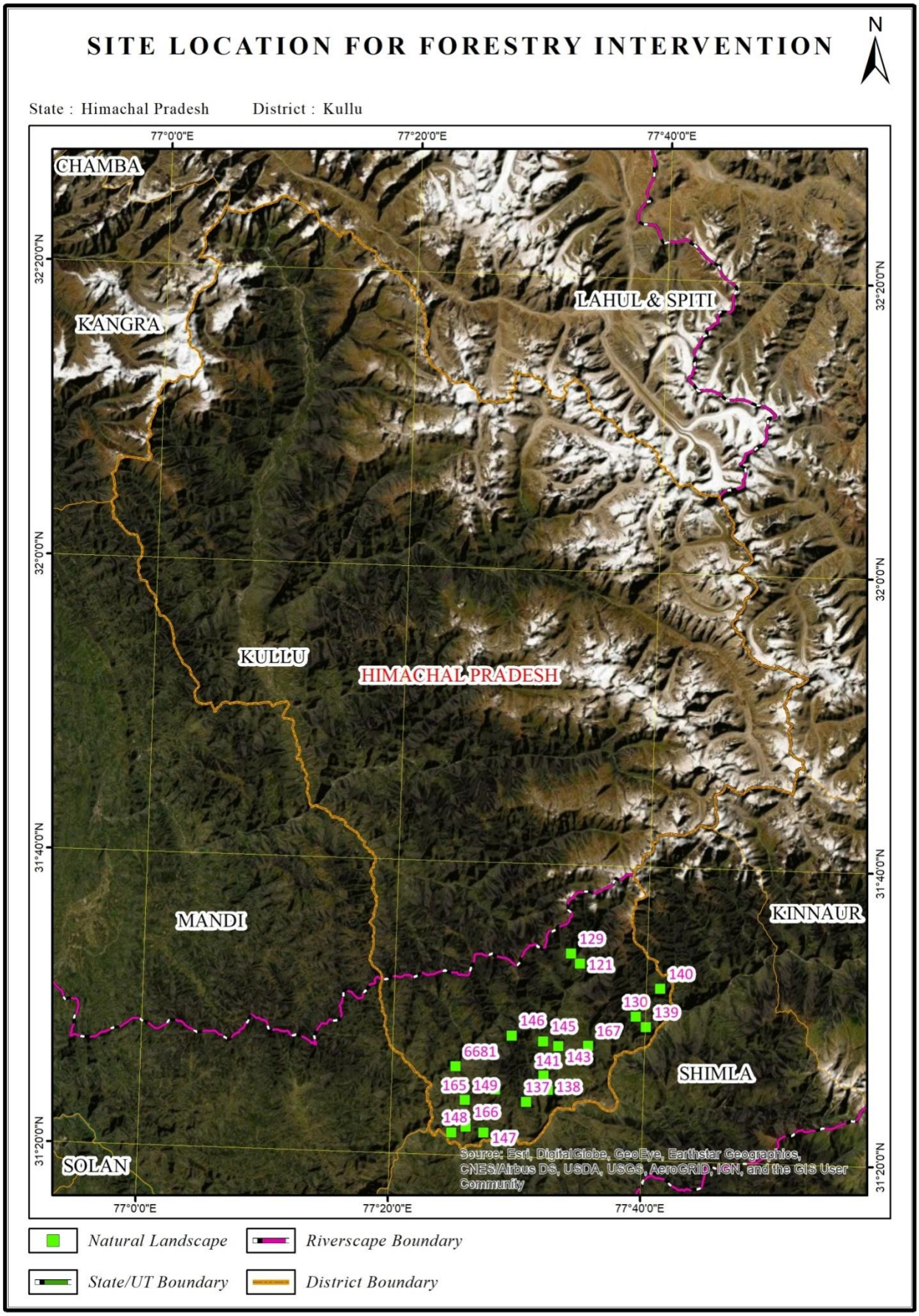
Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community
Natural Landscape
Riverscape Boundary
State/UT Boundary
District Boundary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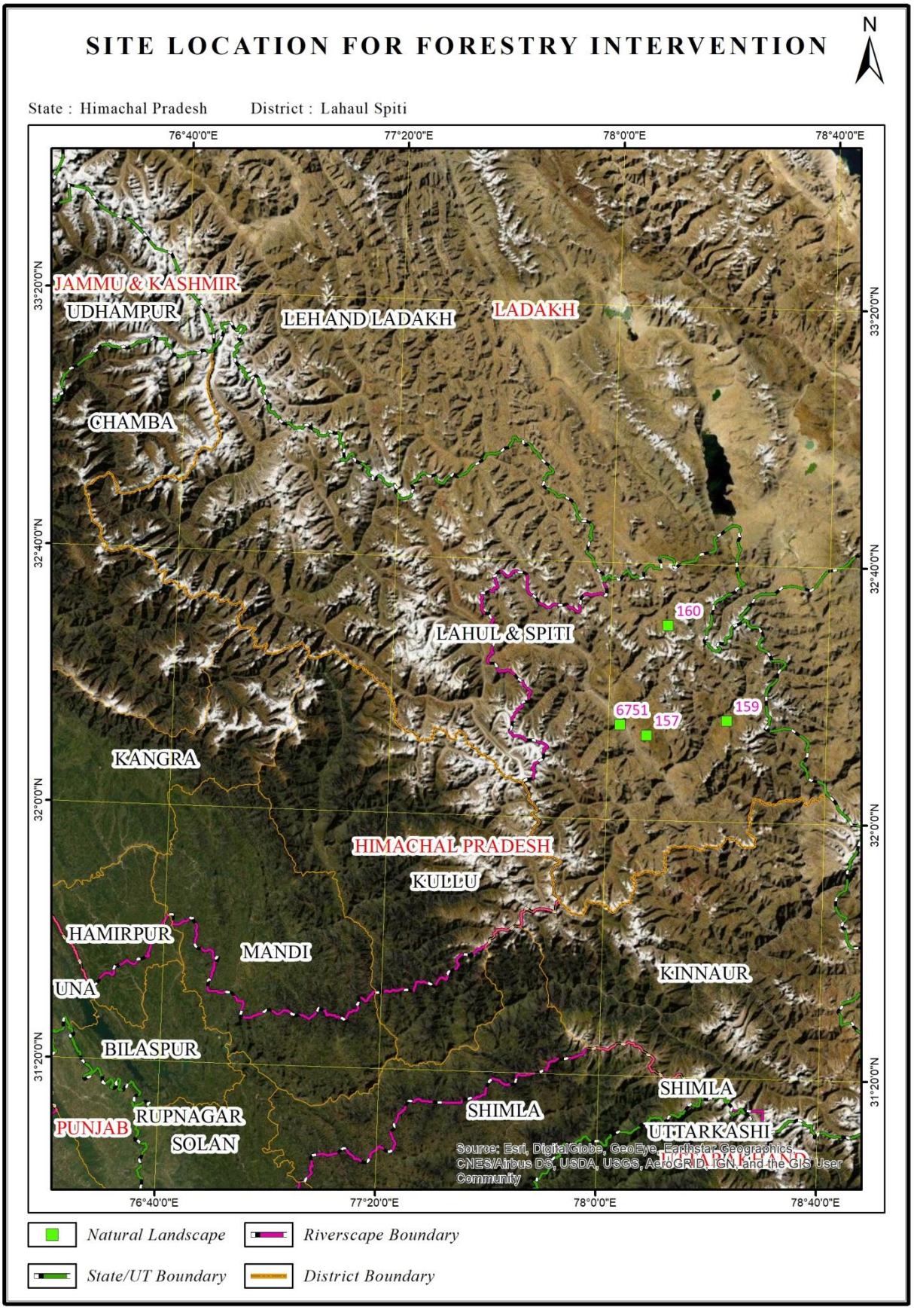
Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community
Natural Landscape
Riverscape Boundary
State/UT Boundary
District Boundary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UDHAMPUR
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LADAKH
CHAMBA
LAHUL & SPITI
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HIMACHAL PRADESH
KULLU
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KINNAUR
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SHIMLA
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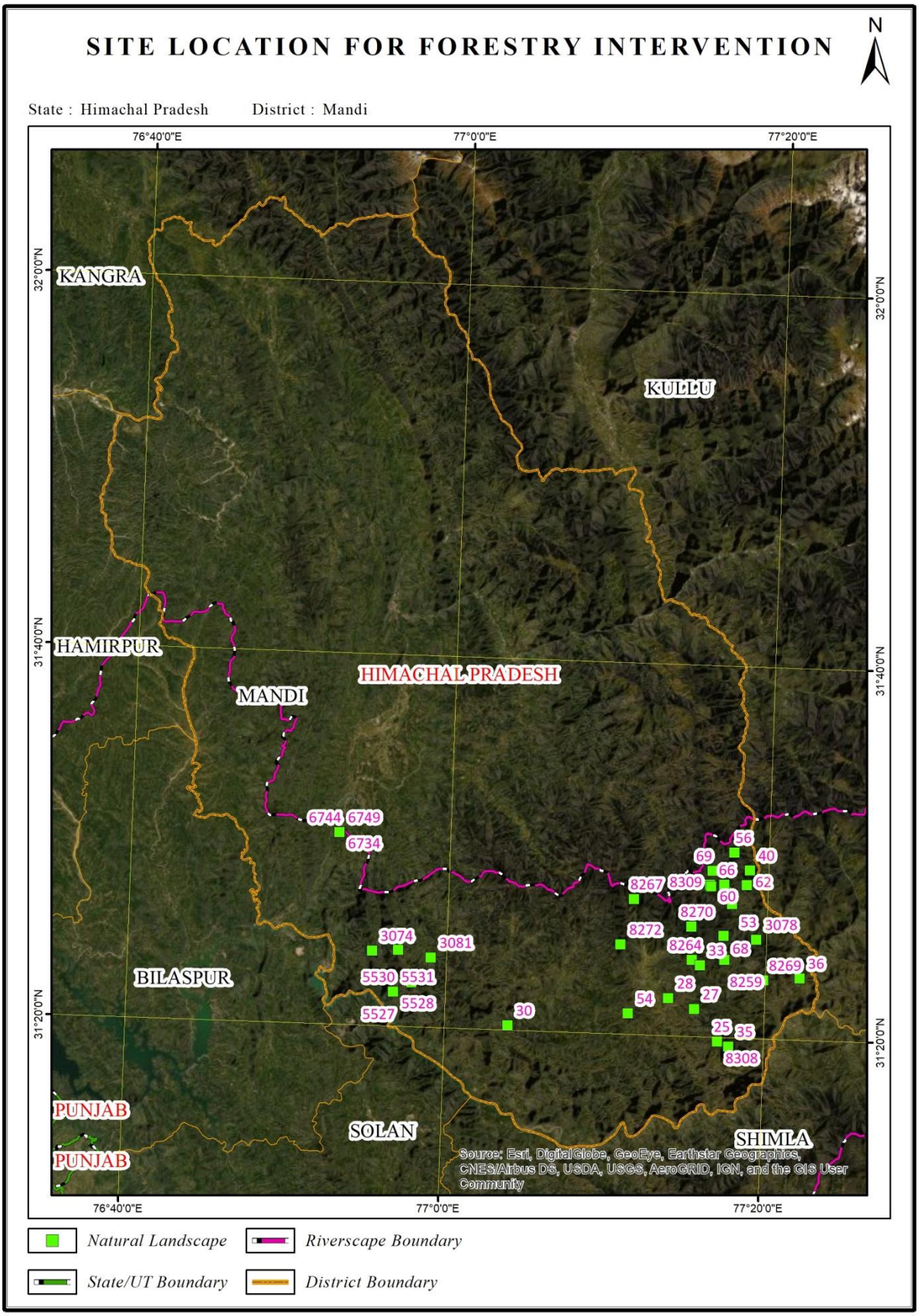
RUPNAGAR
PUNJAB
SOLAN
UTTARKASHI
UTTARAKHAND
Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community
Natural Landscape
Riverscape Boundary
State/UT Boundary
District Boundary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Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community
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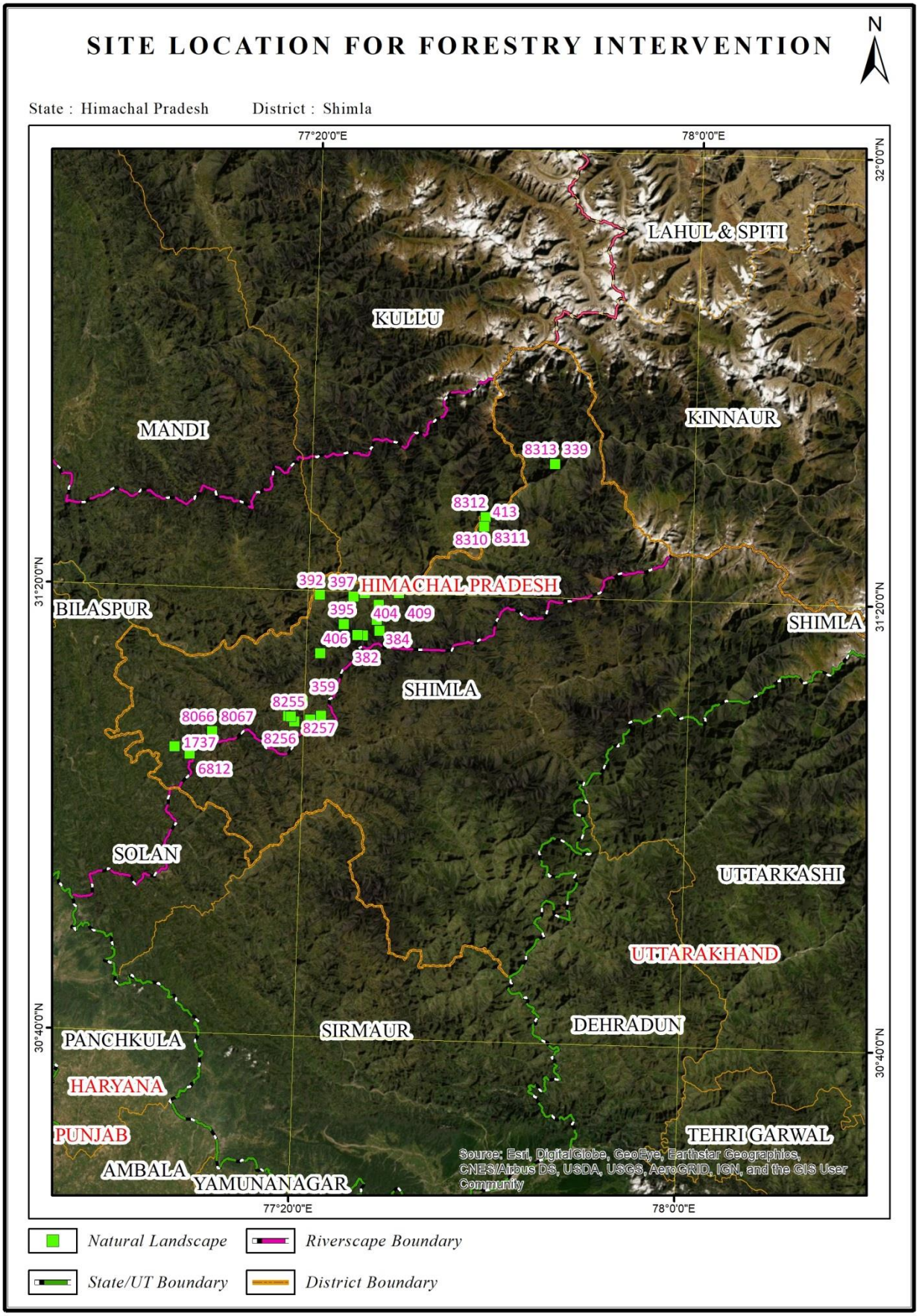
Riverscape Boundary
State/UT Boundary
District Boundary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District : Shimla
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KULLU
MANDI
KINNAUR
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8312
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8311
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HIMACHAL PRADESH
BILASPUR
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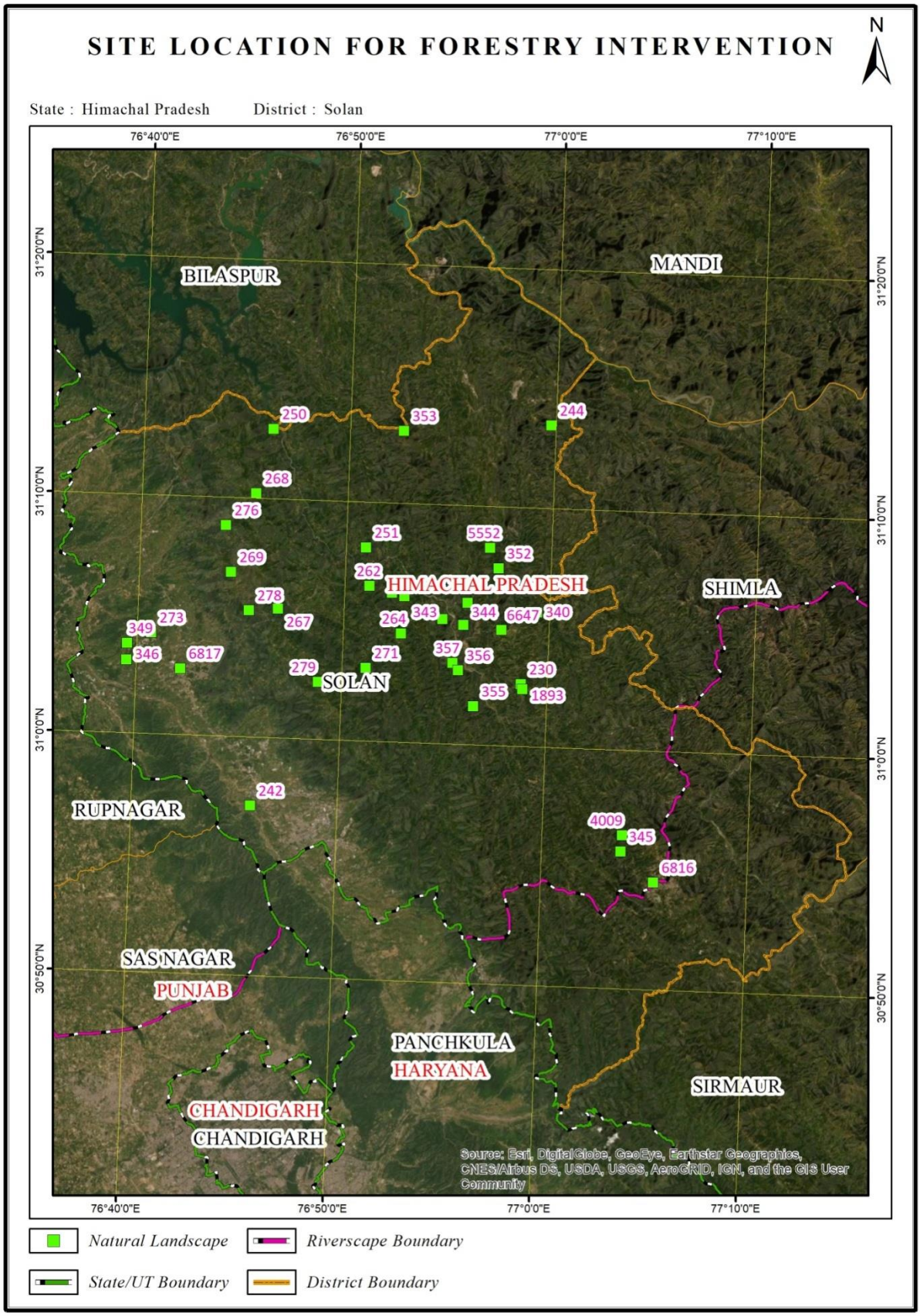
8257
1737
8256
6812
SOLAN
UTTARKASHI
UTTARAKHAND
SIRMAUR
DEHRADUN
PANCHKULA
HARYANA
PUNJAB
TEHRI GARWAL
AMBALA
YAMUNANAGAR
Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community
Natural Landscape
Riverscape Boundary
State/UT Boundary
District Boundary


SITE LOCATION FOR FORESTRY INTERVENTION
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District : Solan
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77°0'0"E
77°10'0"E
31°20'0"N
31°10'0"N
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30°50'0"N
BILASPUR
MANDI
SHIMLA
HIMACHAL PRADESH
SOLAN
RUPNAGAR
SAS NAGAR
PUNJAB
PANCHKULA
HARYANA
CHANDIGARH
CHANDIGARH
SIRMAUR
250
353
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264
343
344
6647
340
273
349
346
6817
271
357
356
279
230
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1893
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4009
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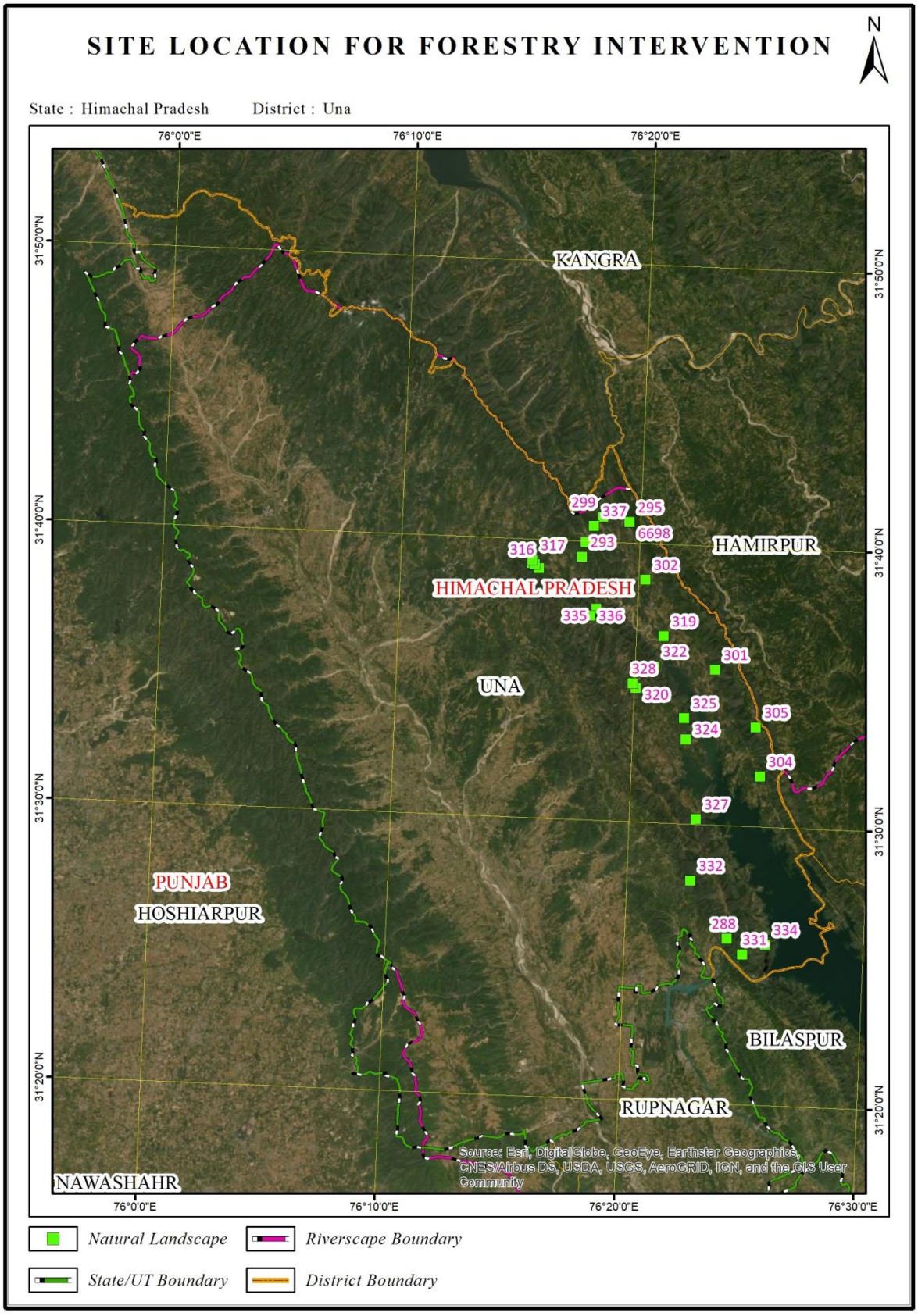
Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community
Natural Landscape
Riverscape Boundary
State/UT Boundary
District Boundary


SITE LOCATION FOR FORESTRY INTERVENTION
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District : Una
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HAMIRPUR
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UNA
PUNJAB
HOSHIARPUR
BILASPUR
RUPNAGAR
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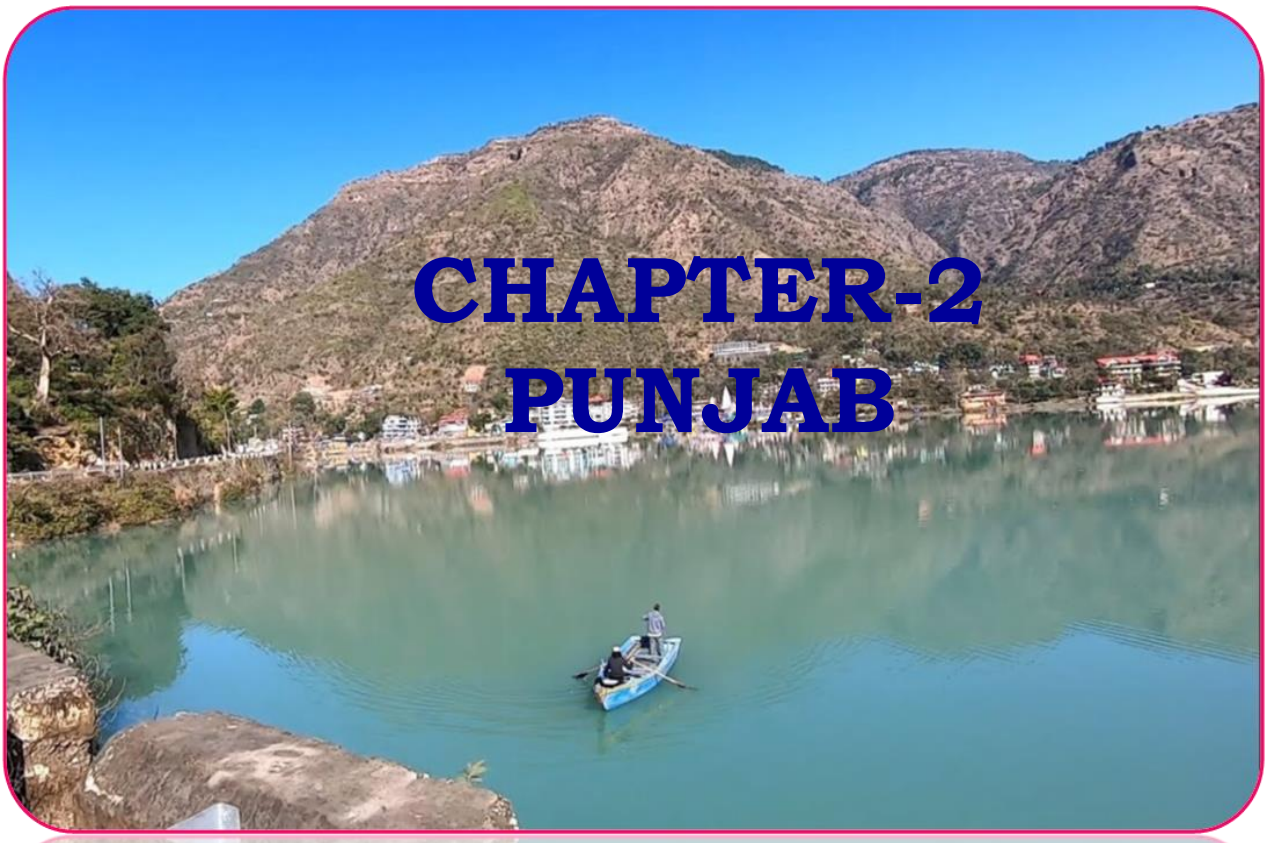
Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community
Natural Landscape
Riverscape Boundary
State/UT Boundary
District Boundary



# CHAPTER-2
# PUNJAB

# Chapter 2
# Punjab

## 2.1 Introduction

The State of Punjab situated in the north-western part of India, covers an area of 50,362 km$^2$ and represents 1.53% of the total geographical area of the country. It is bordered by Himachal Pradesh to the east, Haryana to the south and south east, Rajasthan to the southwest and Pakistan to the west (Fig.2.1). In the north, Punjab is bounded by the Jammu and Kashmir (J&K, UT). The term Punjab comprises of two words: '*Punj'* meaning five and '*ab*' meaning water, thus, the land of five rivers i.e., Sutlej, Beas, Ravi, Chenab and Jhelum, principal rivers of the Indus River System. After the partition of India in 1947, the larger unified province of Punjab during the British India was divided. The western portion of unified Punjab province went to Pakistan while the eastern part of Punjab became one of the States of the independent Indian Republic. In September, 1966, the Indian State of Punjab was reorganized carving out a new state of Haryana; some territory was transferred to Himachal Pradesh, then a Union Territory; and the city of Chandigarh became a Union Territory to serve as the capital of both the residual Punjab and Haryana. Thus, the present Indian State of Punjab mainly comprises fertile alluvial plains while along the north eastern part of the State bordering Himachal Pradesh runs the belt of Outer Himalaya or low Shivalik hills. Now, only two major rivers (i.e., Sutlej and Beas) flow through the Punjab and one major river (Ravi) flows on its northern border. Roughly triangular in shape, Punjab has a sensitive location and has great significance from the point of view of socio-economic development and defense (Gosal, 2004). The State is blessed with rich natural and cultural diversity.


**Source:** Aggarwal and Garg, 2015

**Fig. 2.1- Map of Punjab**

## 2.2 State Profile

### 2.2.1 Geographical Extent

Punjab, among the smaller States of India is located between 29º30º- 32º32º N latitudes and 73º54º - 76º50º E longitudes. Physiographically, the State is situated in the north-western part of India sharing a 300 km long international border with Pakistan in the west. The State has 22 districts, 81 tehsils, 168 statutory towns and 69 census towns and about 12,858 villages, with the area being generally plain (180 - 320 m amsl) except for the Sub-Himalayan Shivalik foothills in the north-eastern border (300 - 800 m amsl). Punjab is predominantly an agrarian State and more than 60% of the population lives in the rural areas. The State is sub-divided into three parts, Malwa, Majha and Doaba. Malwa region constitutes majority of the region in the State and comprises of cities like Ludhiana, Patiala, Bhatinda and Mohali, whereas Majha embraces modern districts of Amritsar, Gurdaspur and Tarn Taran. Doaba region, predominantly alluvial plains between two rivers is considered among the most fertile regions of the world. In spite of many upheavals, the State has achieved tremendous success in the economic and agriculture development. About, 84% area of the State is under intensive cultivation, with a cropping intensity of 184%. The State enjoys the distinction of being the food bowl of the country and has the country's highest per capita income.

### 2.2.2 Geology, Topography and Soil

**Geology**

Punjab, "The Land of Agriculture", as its name suggest most of land is used for agriculture all year round, but now a days many industries like thermal power plants, fertilizer plants, chemical factories and cement factories are well established. The soil in the plains is mainly alluvial and suitable for cultivation. The allunial soil of the Punjab Plains is the main factor responsible for making current land suitable for cultivation. However, the tedium of its well reconstructed fields is broken in patches by water courses, wetlands and sandbanks beside extended green, slopes of the Shivalik hills to the northeastern border of Himachal Pradesh. The size of the alluvium decreases to the south where the depth of the basement is narrow and shallow. These particles of alluvium vary in age from the upper Pleistocene to the present, and are usually divided into old and new alluvium and consist of clay, gravel, sand, silky sands and clay in *kankar* size. In the western and southern-western parts, the alluvium is blown by the wind resulted in formation of beautiful, colorful dunes of sand. The area is also close to the Trans-Aravalli Vindhya basin of the Rajasthan. The highest part of the Aravalli-Delhi plateau is about 400m deep pass through the Sirsa-Mansa and Faridkot regions. The basement rocks rapidly go down from Tusam to Batinda, while to the east of Sirsa, rocks of the Malani suite, granite and rhyolites and quartzite of Delhi are encountered below the quaternary sediments. In Zira, near Ferozpur, granites found at a depth of more than 700 m beneath the Shivalik sediments. The maximum depth to the basement of the Punjab plains is between 4 - 5 km and the depth increases somewhat below the Shivalik range.

## Topography

Undivided Punjab lying between the Yamuna River on the east and the Indus River on the west, and fringed by a dissected foot-hill zone and the Shivalik foothills in the north-east and the north, Punjab is an extensive alluvial plain gently sloping from about 350 m amsl in the northeast and the north to about 180 m, amsl in the southwest and the south. The south-western fringe of the region is desertic and undulating, but has gradually been becoming level with the extension of cultivation and irrigation. The region primarily, is a great mass of alluvium brought down by the rivers. In between the Yamuna and the Sutlej Rivers in the current Indian Punjab, the Ghaggar River and its tributaries have contributed to the same process of alluviation in what is now called the Malwa tract. With about 90% of the total area as plain comprising the low-lying floodplains along the rivers and the monotonously flat upland plains between them, the region is an extensive level tract of land. In general, Punjab is a predominantly flat and featureless land form; however, it presents a varied relief when viewed from micro-regional levels. The entire landscape of Punjab can be segregated into the following landform types described below (Gosal, 2004):

### (a) Shivalik Hills

Punjab is bordered by the Shivalik hills on its north-west, north and north-east along the foothills of the Himalaya. They are fairly wide in the north-west and the north, and are only a narrow zone in the north-east. The Shivaliks are formed of Mio-Pleistocene sands, gravels and conglomerates. The hills generally range between 300 - 1,000 m amsl and provide a sharp contrast to the predominantly level topography in much of the region. They are quite denuded and dissected by discontinuous series of longitudinal valleys (*duns*) and generally covered with only scrub and stunted vegetation.

### (b) Dissected Foot-Hill Zone

Along the foothills of the Shivaliks, stretches a narrow 10 km - 15 km wide dissected undulating zone with seasonal streams, locally called *Chos*. These *Chos* are closely spaced and do not run for long distances, but cause large scale soil and gully erosion. This tract of the Shivalik foothill zone is locally called the *Kandi* Tract.

## Upland Plains

The Punjab plains gradually slope westward forming the interfluvial tract formed as a result of the westward shift of the Sutlej River. The major rivers that flows from the Himalaya results in formation of upland plains that are made of old alluvium. The plains in general look flat and featureless, slope from the north-east to the south-west. As a result of the shifting of the rivers course to the west, leaving mounds of sand in its earlier course, there is a discontinuous chain of sand dunes to the south of the Sutlej River flood plain formed in the Malwa Tract. The western Malwa Tract, which was strewn with sand-dunes in early 1950s, has now been levelled and brought under cultivation with the help of canal and tube well irrigation, now looks like any other well-developed plain area. The southern part of west Punjab which have a much drier climate than their counterparts on the east side have relatively different surface conditions.

**(c) Floodplains**

The floodplains are formed by the new alluvium deposited by floods in rivers during the annual rainy season. These floodplains areas along the rivers are parallel strips of not more than 10 to 15 km width. Formerly, these plains were wetlands, but now almost all of them are heavily cultivated areas. As the rivers shifted their course to varying degrees to the west, therefore, the western banks are steep leaving little scope for their development. On the other hand, the floodplains on the east side of the rivers are comparatively very wider. The Sutlej floodplains begin at the enterence point of the river in Punjab near Ropar and extended upto the Fazilka in the Ferozepur region. These are wider on the south side of the river than on the north because of the change in direction towards westward. A part of the floodplain is also lies between the Sutlej River and the Buddha Nallah, i.e., an old tributary of the Sutlej River. The presence of the remains of the oxbow lake between the old course and the present one provides evidence of the shifting of the river course to the west. An extensive floodplain region is formed near Harike Pattan where Sutlej joins the Beas (Table 2.1). The Beas Flood forms a large part of the Dasuya region in the Hoshiarpur region and the western part of Kapurthala. Due to the westword shift of the Beas, the floodplain is much wider on the east side of the river than on the west.

**Table 2. 1 Summary of the Rivers of Punjab**

| River | Length (km) | Place of Origin | Confluence |
|---|---|---|---|
| Sutlej | 1,500 | Rakshastal Lake in Tibet | Sutlej has confluence with Chenab River in Pakistan |
| Beas | 470 | Beas Kund, Kullu district in Himachal Pradesh | Beas River joins Sutlej River at Harike in Tarn Taran district |
| Ravi | 720 | Kangra district of Himachal Pradesh | Ravi River joins Chenab River in Pakistan |

**Soil**

Different workers classified soil under various categories in Punjab State. However, the soils of Punjab can be broadly classified under eight major categories and these are briefly described below:

**(a) Floodplain/Bet soils:** Floodplains are *Khadar* soils of periodically flooded or old floodplain areas of various rivers, streams or *chos* of the State. These occur in the form of elonagated belts on the both side of the river channel such as those of Sutlej, Ravi, Beas and the Ghagghar Rivers.

**(b) Loamy soils:** This type of soil is very productive and fertile soil group of the state, which is found predominantly in the Nawanshahr district, larger parts of Nakodar tehsil of Jalandhar district, Phagwara and central parts of Kapurthala district.

**(c) Sandy soils:** In the south-western and south-central Punjab covering the districts of Bhatinda, Mansa, southern parts of Ferozepur and Muktsar districts, larger parts of Sangrur, south-central parts of Patiala district and some patches of Ludhiana district, these are found the arid soils.

**(d) Desert soils:** Formed under arid and hot climate with thin cover or scrub vegetation the soils belong to the arid zone spreading over south-western parts of the State in Abohar tehsil and some area of Firozpur district, Muktsar district, large parts of Bhatinda and Mansa districts and some patches in Sangrur and Ludhiana districts.This soil group covers more than 11% of the total area of the State.

**(e) Kandi soils:** These soils are found in the areas of Pathankot, larger parts of Hoshiarpur, Nawanshahr and Ropar districts and have a sandy, sandy loam, silt loam and clay-silt to gravelly texture

**(f) Sierozems:** These soils are found in eastern half of the Malwa plains in Ludhiana district, northern and central parts of Sangrur, Fatehgarh Sahib and Rajpura districts, western parts of Patiala district and some areas of Faridkot districts.Sierozems are grey soils of semi-arid parts of Punjab with an average annual rainfall of 50 -70 cm and air temperature ranging between 24°C - 25°C. They have grass and deciduous vegetation and cover nearly 25% area of the State.

**(g) Grey-brown podzolic and forest soils:** In some blocks of Gurdaspur district and Shivalik hill zone of Hoshiarpur, Nawanshahr and Ropar districts, reddish brown to olive brown in colour stony, gravelly and sandy soils, are found. These soils have developed under shrub and deciduous forests, steep slopes and rugged topography, much water erosion and less hot temperature conditions.

**(h) Sodic and saline soils:** On account of climate and topography, anthropogenic activities and mismanagement, soils suffer from various kinds and degree of degradation, particularly salinity and sodicity. The pH values are generally 7.3 to 8.5 and the soils are neutral in reaction. Sodic soils have a higher percentage of sodium (>15%) salt and high pH value of above 8.5 and strong alkaline reaction (ENVIS, 2015).

### 2.2.3 Climate

In conformity with its inland position and tropical and sub-tropical location, Punjab is characterized by a continental, semi-arid to sub-humid climate. It is also bounded by western Himalaya in the north and the Great Indian (Thar) desert in the south and south-west which mainly determine its climatic conditions. It receives south-easterly current of the summer monsoon coming over the Bay of Bengal. Thus, the climate of Punjab is greatly influenced by these factors. Its climatic rhythm, as of other parts of India, is defined by the change of seasons. The contrast between summer and winter is well marked, and these two primary

seasons are associated with two main crop seasons of Kharif and Rabi in monsoon and winter season, respectively. The summers are extremely hot and winters slightly cool. The mean monthly maximum temperature (June) is as high as 42°C while the mean monthly minimum temperature (January) is as low as 4.7°C. The mean annual rainfall is 705 mm, which varies from 1,200 mm at Pathankot to less than 300 mm at Abohar, representing the wettest and driest stations, respectively. Hence, the climate of the State can be considered as predominantly semi-arid to monsoon types. The mean annual rainfall varies from less than 300 mm to about 1,400 mm per annum. According to the Thornthwaite (1948) classification system, the State of Punjab can be divided in to six climate zones (Sehgal, 1970):

**i.** Arid and Hot zone
**ii.** Semi-arid (dry) and Hot zone
**iii.** Semi-arid (dry) and Less-hot zone
**iv.** Semi-arid (semi-dry) and Less-hot zone
**v.** Semi-arid (Sub-moist) and Less-hot zone
**vi.** Sub- humid (dry) and Less-hot zone

### 2.2.4 River system

**River System**

Earlier prior to the partition of the country, the unified Punjab was drained by five perennial rivers, numerous seasonal streams like the Ghaggar and hundreds of gullies. The discharge of these perennial rivers is subject to wide fluctuations ranging from a flush during the monsoons to a low current during late winters. The perennial rivers are not dependent on monsoon rainfall alone for their water supply, but also get supply from the melting of the Himalayan glaciers (Gosal, 2004). However, in the current state of Punjab Sutlej, Beas, Ravi and Ghaggar Rivers and streams are the part of drainage system.

**Sutlej River**

The Sutlej River originates from Rakshastal near Mansarovar Lake in Tibet at an elevation of 4,633 m amsl. This 1,450 km long river follows a north-westerly course along the slopes of Kailash Mountains before entering the Shipki La in Himachal Pradesh. Here, it bends southwest and makes its way through the mountainous and hill topography till it enters the Shivalik foothills near Nangal, where the Bhakra dam has been constructed across the river. At this point, the river flows with northwest-southeast orientation through the Jaswan dun between two ranges of the Shivalik hills in Ropar district. At Ropar, it pierces through the hills and enters the plains proper, and here it takes a sharp westward turn. The Sutlej separates the Bist Doab in the north from the Malwa Tract in the south. At Harike, it is joined by the Beas River from where it adopts a south-westerly course. It marks the boundary between the erstwhile east and western Punjab from nearby Ferozepur to Fazilka for about 120 km. From there, it follows a south-westerly course to meet the combined course of Ravi, Chenab and Jhelum Rivers. This meeting point of the combined Sutlej and Beas Rivers and

that of the Ravi, Chenab and Jhelum Rivers is called the Panjnad (five Rivers) at the extreme end of Bahawalpur district of Pakistan. Some 70 km downstream, the combined waters of the five Rivers, join the Indus a little above Mithankot, now in Pakistan.

The State of Punjab owes a lot of its prosperity to the Sutlej River. The Bhakhra dam on the river not only provides the precious hydro-electric power but also saves the State from floods. The Nangal Barrage canal originated at Nangal, the Sirhind and the Bist Doab canals starting from Ropar, the Sirhind feeder and Indira Gandhi (Rajasthan) canal with their source at Harike and the Bikaner canal with its headworks at Hussainwala, all derive water from this river.

### Other Important Drainages of Punjab

### Ghaggar

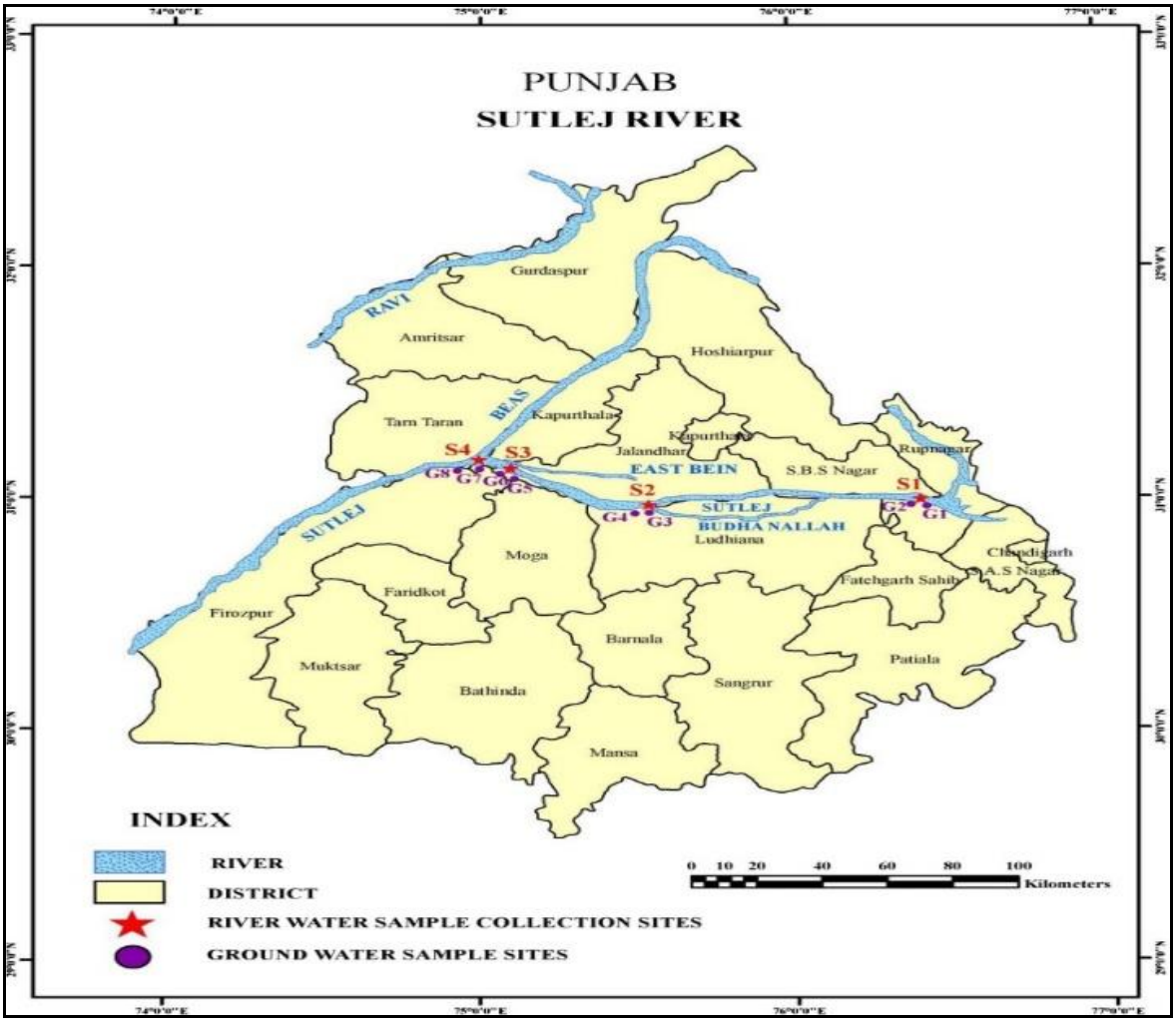
In addition to its prominent rivers, there is another historically important stream, the Ghaggar also called Sarasvati, which has been closely linked with the physiographic and cultural evolution of the part of the Punjab plains. Ghaggar takes its origin from the lower Himalaya in Sirmaur district and is an inland and largely a seasonal stream. After a short journey, it enters the plains near Mubarakpur and traverses through the eastern part of Patiala district, the southern section of Sangrur district and the lower tip of Mansa district. It finally leaves Punjab and moves into Rajasthan to lose itself in the sands near Hanumangarh.

### Buddha Nallah

A seasonal stream which runs through the Malwa region of Punjab and after passing through the highly populated district of Ludhiana, it drains into the Sutlej River.

### Seasonal Streams (*Chos*)

In addition to the main drainage described above, scores of seasonal streams present another notable feature of the Punjab drainage system. These seasonal streams infest the area immediately south of the Shivalik hills. Most of them start from the southern slopes of these hills, dissect their way through the foothill zone for 10 km-20 Km and soon exhaust themselves dry, or fall in some nearby river or in one of its tributaries.




(Source: Sharma *et al*., 2017)

**Fig.2. 1 River System of Punjab**

### 2.2.5 Hydrology

Perennial rivers *viz*., Sutlej, Beas, and Ravi and ephemeral Ghaggar River drain the State of Punjab. It is predominantly an agriculture State with a vast network of canal system for irrigation. Its surface water resources are being fully utilized, and to meet the growing demand of water for irrigation and other diverse purposes, the ground water is being exploited extensively. It is facing the problem of 'Falling ground water level' in about 80% of the State. The annual normal rainfall is around 550 mm in the plains and 890 mm in the sub-mountainous regions near lower Shivaliks in the east. Rain is primarily provided by the south-west monsoon during the months of June-September.

**Canal Irrigation System**

Punjab's Canal irrigation systems include Sirhind Canal System, Bist Doab Canal System, Bhakhra Main Line (BML) Canal System, Upper Bari Doab Canal System, Kashmir Canal, Ferozepur Feeder/Sirhind Feeder System, Eastern Canal System, Makhu Canal System, Shahnehar Canal System and the Kandi Canal System. The Rajasthan Feeder and the Bikaner

Canal carrying water from the Ravi-Beas and Sutlej specifically in Rajasthan also operate at considerable length over the Punjab Territory.

### 2.2.6 Water Resources Issues

Punjab, predominantly an agricultural State of India, is facing a severe water crisis due to lesser annual rainfall than normal (700 mm) since 1998. Further, Punjab is not getting adequate amount of river water due to political reasons like Indus Water Treaty, damming and diversion of river water, water issues with Haryana, Rajasthan, and the Central Government. However, the irrigation water demand (4.45 m ham) is significantly more than total irrigation water availability (3.04 m ham). Hence, in most parts of the State, groundwater is being overexploited for irrigation and apart from this water scarcity; water quality is also being deteriorated and, in several pockets, not suitable for drinking. Basic groundwater parameters such as salinity, electrical conductivity (EC), chloride ($Cl^-$), and nitrate ($NO_3^-$) have surpassed the maximum permissible limit in most of the parts of this State. Even toxic heavy metals (i.e., Selenium, Uranium, Arsenic, and Lead) and pesticides have also been reported in groundwater samples of several regions of the State. Intake of this contaminated water is affecting the villager's health, especially in the Malwa region.

### 2.2.7 Forests and Vegetation

The term 'Recorded Forest Area (RFA)' refers to all the geographic areas recorded as 'forests' in the government records. RFAs are largely consists of Reserved Forests (RFs), Protected Forests (PFs), and Un-demarcated Forests (UDFs) or Unclassified Forests constituted as per the provisions of the Indian Forest Act, 1927. The situation of forests in terms of RFA in the alluvial plains of Punjab was dismaying in proportion to its larger size (Fig. 2.2). This agriculture dominated State just contributed a small proportion i.e., 6.12% of RFA of the geographical area of the State while the State represented a minuscule RFA i.e. 0.40% of the overall extent of the country (Table 2.2).

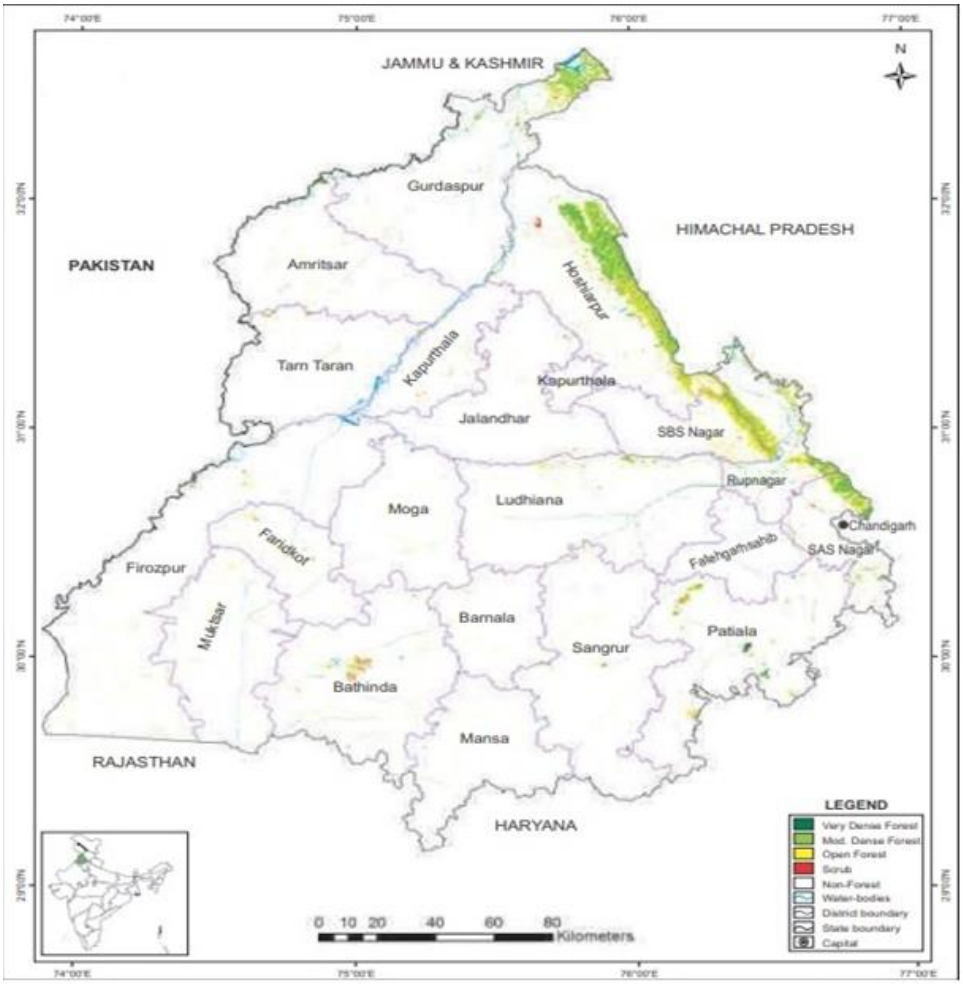
**Table 2.2 Recorded Forest Areas (RFAs) in Punjab**

| Sr. No. | Geographical Area of the State ($km^2$) | Reserved Forest ($km^2$) | Protected Forest ($km^2$) | Unclassed Forest ($km^2$) | Forest Recorded Area ($km^2$) | Representation of RFA of the States' Geographical Area (%) | % of India's Forest Area (%) |
|---|---|---|---|---|---|---|---|
| **1** | 50,362 | 44 | 1,137 | 1,903 | 3,084 | 6.12 | 0.40 |

(Source: FSI, 2019)

The term 'Forest Cover' refers to all land more than 1 ha in area with a tree canopy more than 10% irrespective of land use, ownership and legal status. The close scrutiny of information on forest cover provided by FSI (2019) revealed that out of the total estimated forest cover of 1,849 $km^2$ in the State, a small area (8 $km^2$) was under the category of Very Dense Forests (VDFs) (lands with tree canopy density of >70%) while as much as 1,040 $km^2$ area of forests

was under the category of the Open Forests (lands with tree canopy density of 10% to <40%). The Moderately Dense Forests (MDFs) with >40% and <70% canopy density covered 801 $km^2$ of total forest cover of the State (Fig.2.3). A meager extent of just 8 $km^2$ of VDFs in Punjab justify improvement of forests by way of protection, massive plantation and interventions like assisted natural regeneration and gap planting (Table 2.3).



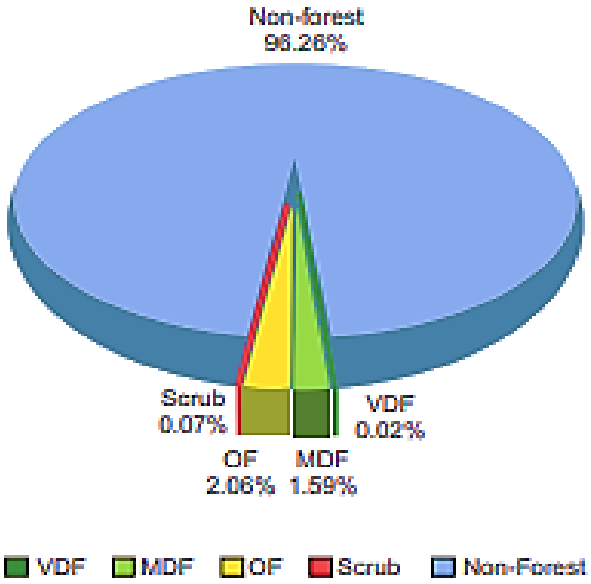

**(Source: FSI, 2019)**

**Fig.2. 2 Forest Cover in Punjab**

**Table 2.3 Forest Cover in Punjab**

| Sr.No. | Geographical Area ($km^2$) | VDFs ($km^2$) | MDFs ($km^2$) | OF ($km^2$) | Total Forest Cover ($km^2$) | Representative of Geographical Area (%) | Tree Cover ($km^2$) | Total Forest and Tree Cover ($km^2$) | Scrub ($km^2$) |
|---|---|---|---|---|---|---|---|---|---|
| 1 | 50,362 | 8 | 801 | 1,040 | 1,849 | 3.67 | 1,592 | 3,441 | 33 |

(Source: FSI, 2019)




(Source: FSI, 2019)

**Fig.2. 3 Forest Cover in Different Classes in Punjab**

**Tree Outside Forests (TOFs)**

Tree cover in small tree patches (<1 ha in extent) outside the recorded forest area and usually those lie in village woodlots, orchids, homesteads, urban areas, industrial plantations, and compact blocks along roads, canals, railway lines, etc., as well as scattered trees are of immense value as they provide multiple benefits. Owing to mapping limitations, isolated small tree patches (<1 ha) are excluded from 'Forest Cover', however, their contribution is captured in the form of tree cover. The State which was deficient in the actual forest cover had greater representation of tree cover to the extent of 1,592 $km^2$ (FSI, 2019).

**Growing Stock**

The FSI-2019 also provided the insight on the growing stock in the RFA and TOF (Table 2.4). Punjab had the growing stock in RFAs to the tune of 11.12 million $m^3$while the State contributed 18.56 million $m^3$ of growing stock in TOF (FSI, 2019) (Table 2.4).

**Table 2.4 Growing Stock in Punjab**

| Sr.No. | Geographical Area of the State ($km^2$) | Recorded Forest Area ($km^2$) | % of India's Forest Area (%) | States' Geographical Area (%) | Growing Stock in RFA (M $m^3$) | Growing Stock in TOF (M $m^3$) |
|---|---|---|---|---|---|---|
| 1 | 50,362 | 3,084 | 0.40 | 6.12 | 11.12 | 18.56 |

(Source: FSI, 2019)

Above revelations with regard to the lower extent of RFA, legal categories of forests, forest cover, representation of canopy density classes, and contribution to the growing stock of RFA and TOFs in Punjab noticeably explained that the overall situation of forests in the State is not very sound. These observations provide ample clues that there is enormous scope not only to enhance the forest extent in this State located along the course of SutlejRiver but also to improve the quality of forests.

**Forest Change in the State**

The spatio-temporal changes in forest cover between two consecutive assessment periods reflect the change on the ground during the intervening period and provide an insight on the forest dynamics in human dominated landscape. A comparison of total forest cover and forest canopy density classes in two consecutive assessment periods (2017 and 2019) in the State provided noteworthy observations (Table 2.5). Accordingly, the State registered slight increase in forest cover in 2019 than the previous biennial assessment. There was no change in the extent of VDF between two consecutive assessments of 2017 and 2019. In case of MDFs, the State recorded slight decline in MDFs over two-year intervening period. The extent of Open Forests was enhanced in the State in comparison to the previous biennial assessment.

**Table 2.5 Comparison in Forest Cover and Canopy Density Classes in Punjab Between two Consecutive Assessments of 2017 and 2019**

| Sr. No. | Geographical Area ($km^2$) | 2017 Assessment | | | | 2019 Assessment | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | Total Forest Cover ($km^2$) | VDF ($km^2$) | MDF ($km^2$) | OF ($km^2$) | Total Forest Cover ($km^2$) | VDF ($km^2$) | MDF ($km^2$) | OF ($km^2$) |
| 1 | 50,362 | 1,837 | 8 | 806 | 1,023 | 1,849 | 8 | 801 | 1,040 |

(Source: FSI, 2017 and 2019)

The Department of Forests and Wildlife Preservation, Punjab is making efforts to increase the forest cover in accordance with the National Forest Policy, 1988. Simultaneously, measures are being taken to protect and conserve the existing tree species and wild fauna to arrest and reverse ecological degradation. The current forest cover of the State is 1,837 $km^2$, which is 3.65% of the State's geographical area. Plains of Punjab do not have any thick forest; the only available patches are of grass, herbs and shrubs.

### 2.2.8 Forest Types of Punjab

Based on Champion and Seth (1968) classification of forest types, the State has Seven types of forests, which have been briefly described below:

- **Northern Dry Mixed Deciduous Forests:** Here, the vegetation is xerophytic in nature and there is a preponderance of species like *Senegalia catechu, Leucaena leucocephala, A. nilotica, Anogeissus latifolia, Buchanania lanzan,* etc.
- **Dry Deciduous Scrubs:** Mostly found in the *Kandi* tract, consisting of *Nyctanthes arbor-tristis, Carissa opaca, Grewia tenax,* etc. Plantations of economically important species like *Senegalia catechu* and *Eulaliopsis binata* have also been undertaken in these areas.

- **Khair-Sissoo Forests:** These forests are found scattered in nature along the streams. These are mostly man-made forests as a result of plantings in the foothills along *cho*s (streams) and *Mand* areas with Khair (*Senegalia catechu*), Sissoo (*Dalbergia sissoo*) and *Eucalyptus* hybrids. Groves of mango are found in these forests.
- ***Butea monosperma* Forests and Saline/Alkaline Scrub Savannah**: This forest has been converted into plantations of commercial species like *Eucalyptus* spp., *Dalbergia sissoo, Senegalia catechu, Morus alba,* etc. Small patches of natural vegetation survive in village wastelands in the plains.
- **Dry Bamboo Brakes:** These are found in certain parts of Hoshiarpur and Roopnagar districts bordering Himachal Pradesh and also Gurdaspur. The forests of Karanpur and Bindraban in Dasuya Forest Division are mainly bamboo areas where *Dendrocalamus strictus* occurs gregariously. The other associates are: *Lannea grandis, Diospyros montana, Butea monosperma, Holoptelea integrifolia* and *Cassia fistula*.
- **Shivalik Chir Pine Forests:** *Pinus roxburghii* (Chir Pine) found in elevations above 850 m in parts of Bari Khad, Dehrian, Chattarpur, Dhar, Dunera and Nurpur Bedi Forests (TERI, 2002). Associated species are *Terminalia alata, T. bellerica, T. chebula, Anogeisus latifolia, Phyllanthus emblica, Cassia fistula*, etc.
- **Ravine Thorn Forests:** These types of forests are found on plateau surface, valleys, ravines and on rugged surfaces. Surface of these forests are sandy (morum), dry, stony and rugged. In these forests mainly shrubs are found with scattered small-sized trees. These forests have very low density. Some important species are *Senegalia catechu* Willd. *Bombax ceiba* Linn., *Capparis sepiaria* Linn., *Carissa opaca* Stapf ex Haines, *Cassia fistula* Linn., *Diospyros cordifolia* Roxb., *Gmelina asiatica* Linn., *Holoptelea integrifolia* (Roxb.) Plankh., *Nvctanthes arbortrestis* Linn., *Prosopis cineraria* (Linn.) Druce, *Strebulus asper* Lour. *Xeromphis spinosa* (Thumb.) Keay., *Zizyphus* spp., etc.

### 2.2.9 Agro-ecosystem

Details on land use pattern in the State are provided in Table 2.6. Punjab with net area sown to the extent of 82.23% and cropping intensity of around 191% with over 99% of the cultivatable area with assured irrigation holds place of pride among the Indian States for its outstanding achievements in agriculture as well as horticulture development (Table 2.6). The State comprising only 1.54% of the total geographical area of the country contributes 13-14% towards the total food grain production of the country. The other categories i.e., land not available for cultivation and forests occupy 10.25% and 5.86% area, respectively. Besides these, the other categories are insignificant in Punjab and the land use categories show big imbalances for the State. For example, the extent of forests is very low as the stipulated (33%) or even in comparison to the country's recorded forest or forest cover. Presently natural resources especially water, soil and air of Punjab are degrading day by day, which is perhaps due to these imbalances in land use categories (Singh, 2015).

There are three types of agro-climatic zones i.e., arid irrigated zone, sub-mountain zone and the central zone (Fig. 2.4).


Source: ENVIS, 2015

**Fig.2. 4 Agro-Climatic Zones of Punjab**

**Table 2.6 Land Use and Land Cover of Punjab**

| Sr. No | Land Use and Land Cover of Punjab | Area in '000 ha | Percentage (%) |
|---|---|---|---|
| **1.** | Net area sown in Punjab | 4169 | 82.83 |
| **2.** | Forests | 295 | 5.86 |
| **3.** | Not available for cultivation | 516 | 10.25 |
| **4.** | Permanent pasture and grazing land | 7 | 0.14 |
| **5.** | Land under miscellaneous tree crops and groves | 5 | 0.10 |

| | | | |
|---|---|---|---|
| **6.** | Cultural wasteland | 3 | 0.06 |
| **7.** | Fallow land other than current fallow | 0 | 0.00 |
| **8.** | Current fallows | 37 | 0.74 |
| **9.** | Reporting area for land utilization | **5033** | **100** |

**(Source:** Land use statistics, Ministry of Agriculture, GOI, 2008-09)

Agriculture is the largest occupation and source of livelihood to most people in Punjab. The State has made unparalleled progress in the agriculture since the advent of green revolution in the mid-60s with traditional agriculture progressively giving way to modern and commercial agriculture. The State known as 'Granary of India' has played key role in transforming India from grain importing nation to self-reliant and export surplus nation. The State has highest yield of rice, being 4.41t/ha while the yield in case of wheat has been 5.04 t/ha. The State contributed 46.4% of wheat and 29% of rice to central pool during the year 2016-17. The stunning rise of food grain production from 11.92 MT in 1980-81 to 29.44 MT in 2013-14 was attributed to intensive use of farm chemicals. It is also worth mentioning here that 85% of water consumption in the State is accounted by the agriculture sector. Canals provide about 27% irrigation while tube wells contribute 73% irrigation. The number of tube wells has increased considerably in past decades. The groundwater is being overexploited to meet the increasing demand of water for irrigation. The present groundwater development in the State is 170% with groundwater in 80% geographical area of the State is over exploited. Farm mechanization has played a key role to bring a significant improvement in agriculture productivity in the State. Undoubtedly, the State has immensely helped the country in bringing the self-reliance in food grain production and made significant contribution to the country's as well as State's economy. However, from the perspective of Rivers, excessive groundwater abstraction and decline of water quality due to chemical pollutants are important concerns.

### 2.2.10 Biodiversity

The State of Punjab predominantly represented by alluvial plains and predominated by agriculture, has minuscule extent of Very Dense Forests and diverse forests just contribute about <6% geographical area of the State. Generally, available patches of natural vegetation are dominated by widely scattered open forests, grass, herbs and shrubs. The State of Punjab with 20 PAs (i.e., 13 Wildlife Sanctuaries, 04 Conservation Reserves and 03 Community Reserves) covers a meager area of 381.33 $km^2$under PA network and represents 0.75% of the geographical area of the State. The diversity of angiosperms includes 355, 70, 70, 19 species of herbs, trees, shrubs, and climbers, respectively. Other than angiosperms, 31 species of pteridophytes and 27 species of bryophytes have been documented. Faunal diversity includes 396 species of birds, 214 species of Lepidoptera, 55 species of fish, 20 species of reptiles and 19 species of mammals. Wetlands of International importance are Harike, Kanjli and Ropar wetlands (Table 2.7). The State is primarily represented by three prominent natural and man-made ecosystems *viz*., Shivalik Ecosystem, Wetland Ecosystem and Agro-Ecosystem.

**(a) Shivalik Ecosystem:** The Shivalik hill area is spread over geographical area of 9,448.97 $km^2$ and lies in the north-eastern part of the State extending from north-west to south-east along the Himachal Pradesh border. The Shivalik ecosystem region owing to its rich flora and fauna has been termed as the zone of micro-endemics in India.

**(b) Wetland Ecosystem:** This ecosystem includes a wide range of natural and manmade wetlands, covering an area of nearly 100 $km^2$. Four of the Natural Wetlands of Harike, Kanjili, Beas River Conservation Reserve and Ropar have been recognized as Wetlands of International Significance under the Ramsar Convention, while Ranjit Sagar and Nangal Lake have been declared as the National Wetlands.

**(c) Agro Ecosystem:** Agriculture is practiced on about 83% of the total land area in Punjab. The State harbours a great deal of genetic variability, however it has been reduced over time due to change in the cropping pattern with main focus on wheat and paddy crop rotation. Increase in the area under paddy has led to decline in area under other major natives Kharif crops namely maize, jowar, bajra, area other introduced cash crops *viz*., sugarcane, groundnut, pulses, etc. Wheat cultivation is being done at the expense of gram, barley, rapeseed, mustard and sunflower. Due to predominance of wheat and paddy cultivation, the crop diversity has immensely reduced. As a result, the soil in the State has been severely impacted and the underground water table has also been considerably depleted. This has also led to resurgence and development of resistance in pests thus, affecting the populations of natural enemies of pests.

**Table 2.7 The major biodiversity attributes of Ramsar Sites of Punjab**

| Features | Harike Wetland | Kanjili Wetland | Ropar Wetland |
|---|---|---|---|
| Area | 4100 ha | 183 ha | 135 ha |
| Important Migratory Birds | Rudy Shaddock, Northern Pintail, Common Teal, Eurasian Pigeon, Pochards. | Great crested Grebe, Rudy Shaddock, Shoveler, Mallard, and Common Pochards. | Common Teal, Gadwall, NorthernShoveler, Northern Pintail, Eurasian Pigeon. |
| Major Flora | *Acacia, Dalbergia, Salix, Syzygium, Ipomea, Delonix,* etc. | *Acacia, Albizia, Azadirachta, Ziziphus,* etc. | *Cyprus, Dalbergia, Acacia, Delonix, Salix,* etc. |
| Major Threats | Weed growth, siltation, encroachment etc. | Reduction in water flow, Pollution load, deforestation etc. | Weed infestation, grazing, siltation etc. |

### 2.2.11 Demography

According to the Census of India, 2011, the population of the State is 27.7 million and a population density of 551 people per $km^2$. The population comprises of 14.63 million males and 13.10 million females and the sex ratio in the State is 893, with the literacy

rate being 76.7%. The rural and urban population constitutes 62.52% and 37.48%, respectively. The decadal growth (2001-2011) of human population in Punjab was 13.89% against the value of 17.69% registered for the entire country. The rich and fertile land of the Punjab was meeting ground of different people and races. Its people descended from various stocks and consist of heterogeneous racial elements. Sikhs are in majority in the State and constitute 57.69% of the total State population. Hinduism stands at 38.49% of the total population, Christianity at 1.26%, Jainism at 0.16% and Buddhism at 0.12% and others at 0.35%. Punjab's demographic and social profile presents a unique human resource opportunity for economic growth through manpower skilling. Punjab has one of the oldest and richest cultures of the world. Its diversity and uniqueness are evident in the Punjabi poetry, philosophy, spirituality, education, artistry, music, cuisine, science, technology, military warfare, architecture, traditions, values and history. Undoubtedly, the culture of Punjab is one of the distinctive cultures found anywhere around the globe. The people of Punjab are friendly, hospitable, hard-working and relish living.

## 2.3 Riverscape Analysis

### 2.3.1 Methodology

In Punjab, both sides of the tributaries of Sutlej River has been included in the treatment area for the project.

Image processing and GIS tools, *viz.*, ERDAS Imagine 2015, Geomedia Professional 2015, ArcGIS, etc. were used for Riverscape analysis. Landsat TM, Landsat 8 and Landsat ETM datasets specific to the Riverscape were downloaded from www.earthexplorer.usgs.gov. The time frame was selected keeping in view the pre- and post-monsoon seasons, maximum differentiation in various land cover features, and the historical dates of maximum flooded area.

### 2.3.2 Riverscape Profile

#### (i) Spatial Extent

The influence zone for the state of Punjab lies between 30° 49' 55.733" - 32° 46' 44.268" N Latitudes and 76° 1' 2.721" - 78° 49' 49.649" E Longitudes occupies a geographical area of 55,673km$^2$ (Table 2.8 and Fig. 2.5). The Catchment, Sub Catchment, Water Shed, Sub-watersheds and Micro-watersheds have been shown in Fig. 2.5-2.10 below:

**Table 2.8 -Spatial Extent of the Sutlej Riverscape in Punjab**

| State | Geographical Area (km$^2$) | Geogaphical Coordinates (From - To) | | Area in Riverscape (km$^2$) | Per Cent of Riverscape |
|---|---|---|---|---|---|
| | | Latitudes | Longitudes | | |
| Punjab | 50,362 | 30° 42' 42.072" to 31° 27' 0.758" N | 74° 42' 11.571"to 76° 46' 0.315" E | 3956.22 | 7.86 |

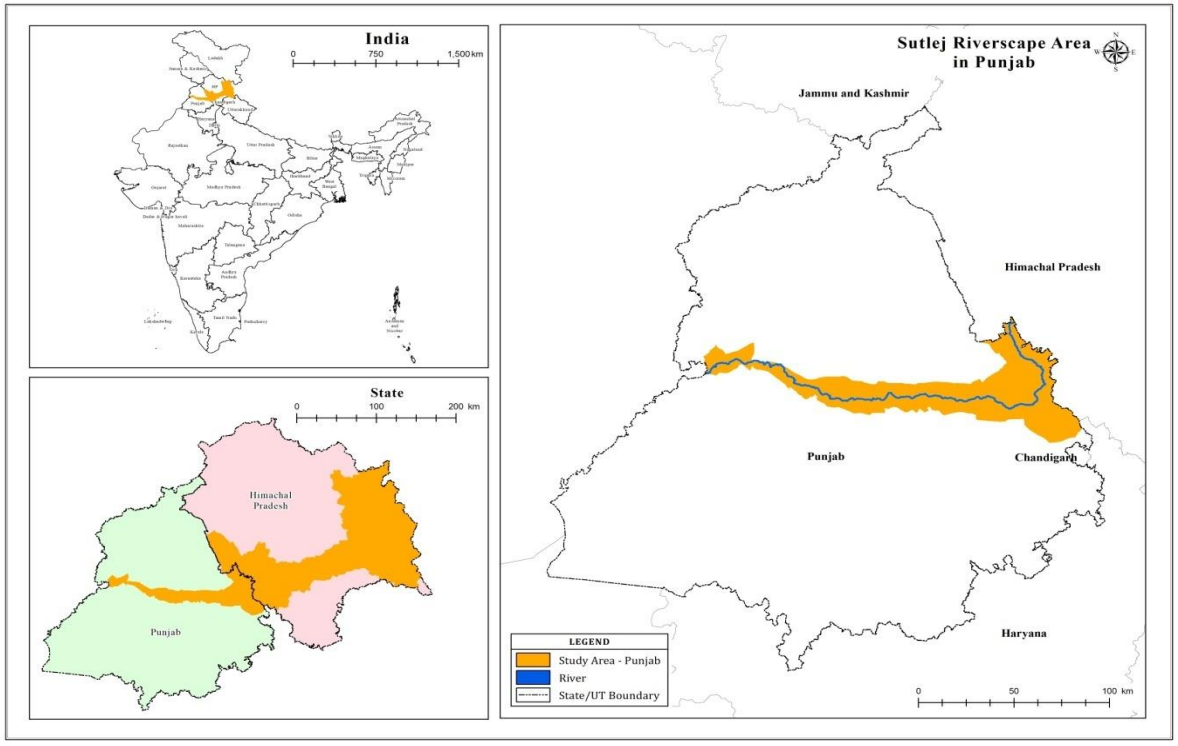



**Fig.2. 5 Sutlej Riverscape Area in Punjab**

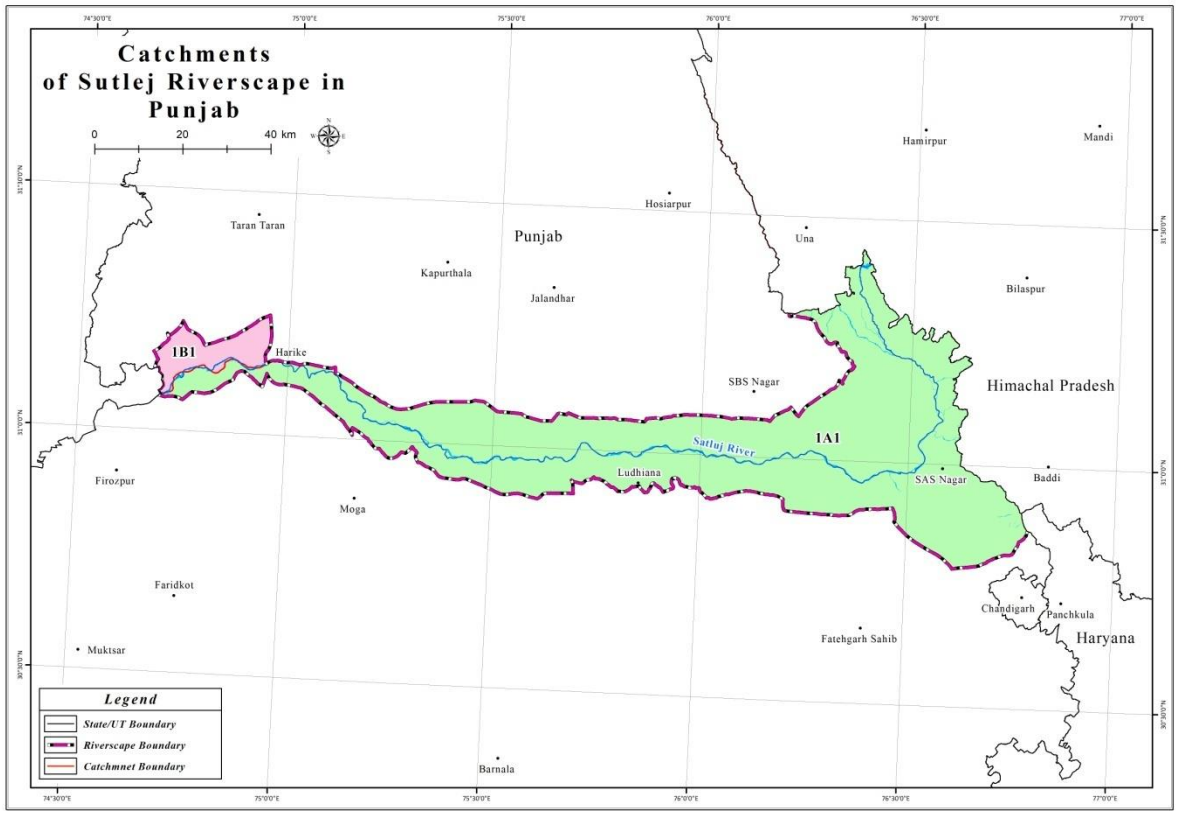



**Fig.2. 6 Catchment of Sutlej Riverscape in Punjab**

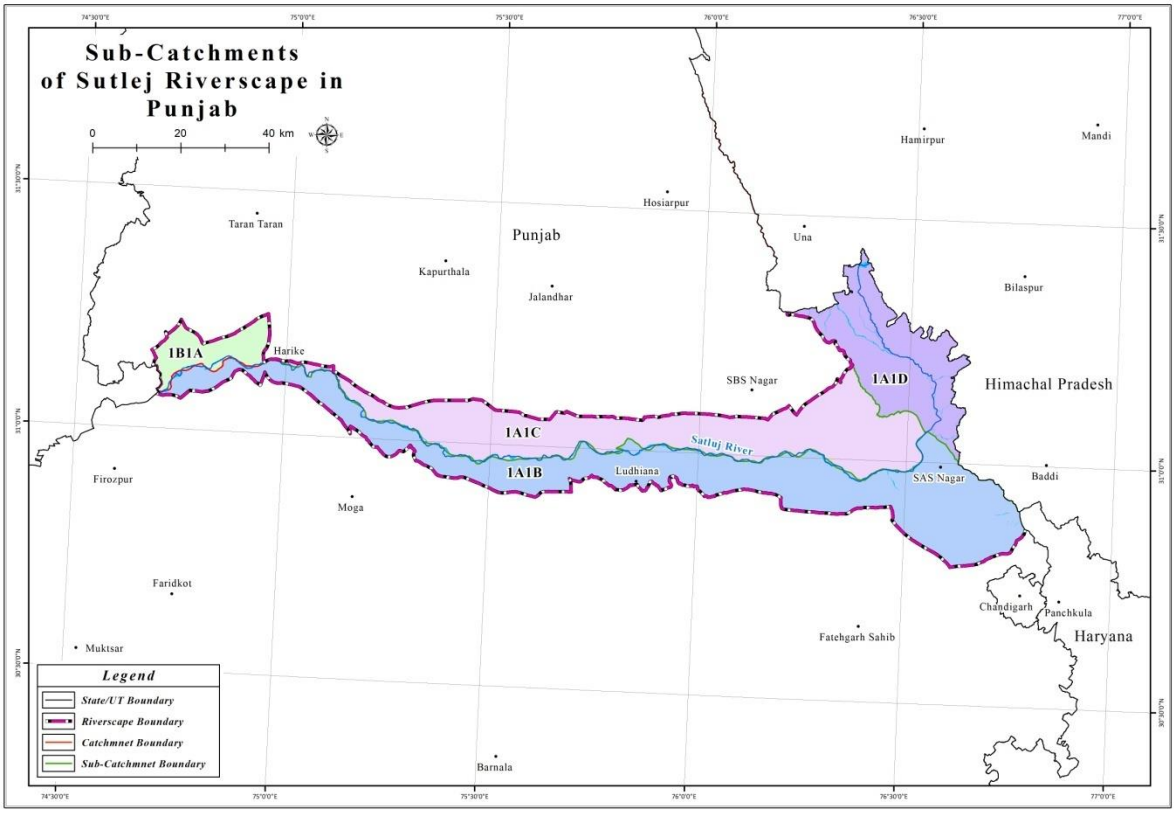



**Fig.2. 7 Sub-Catchment of Sutlej Riverscape in Punjab**

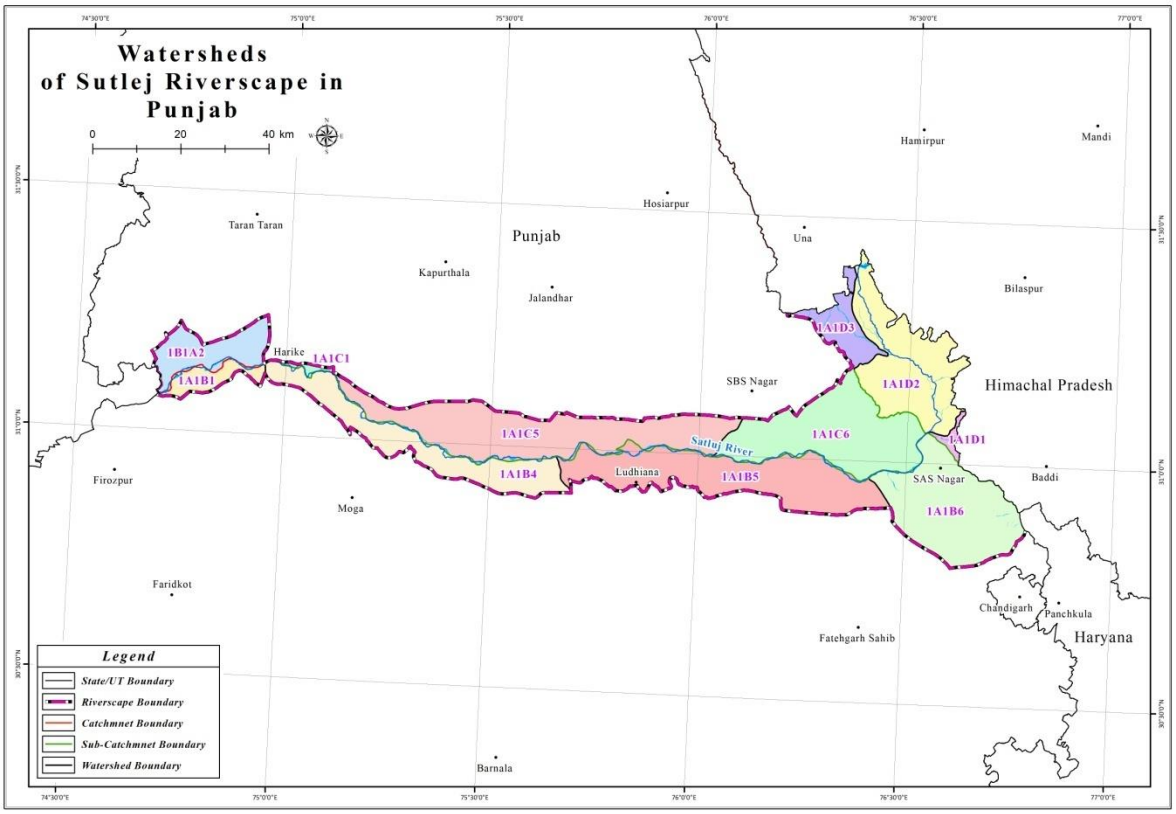



**Fig.2. 8 Watersheds of Sutlej Riverscape in Punjab**

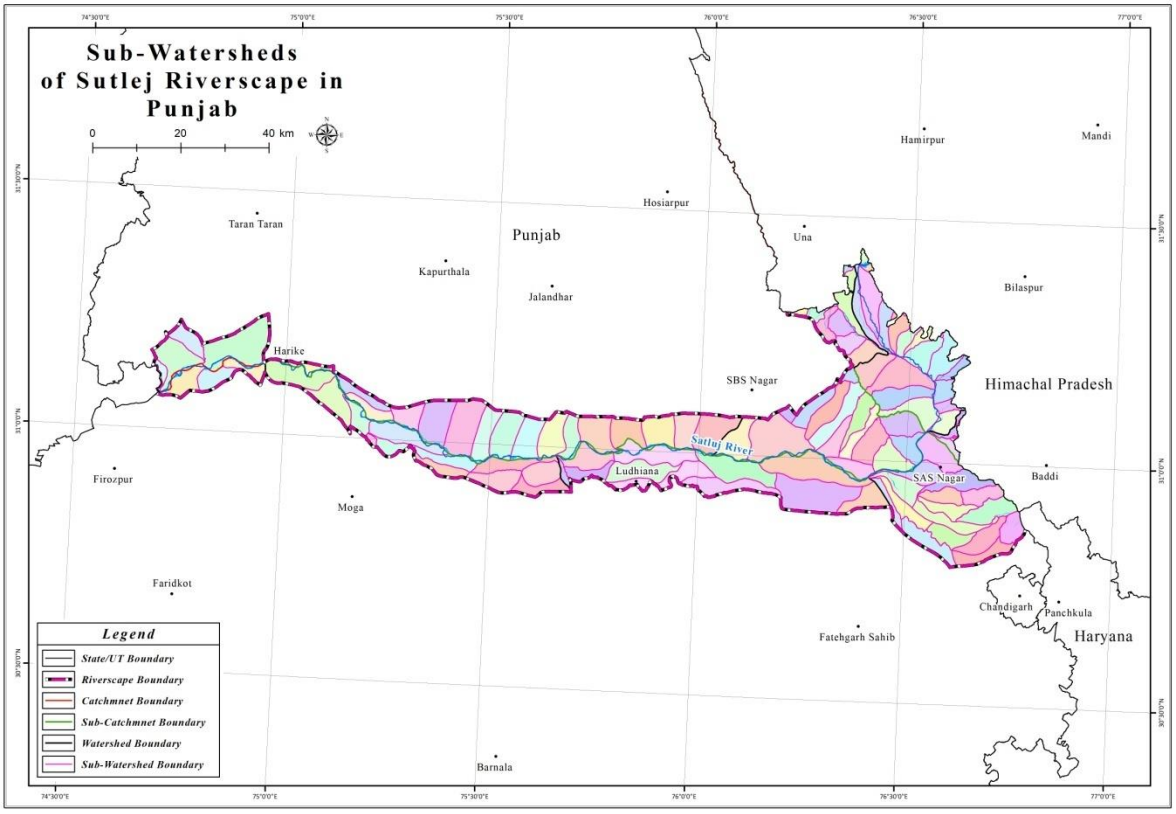



**Fig.2. 9 Sub-Watersheds of Sutlej Riverscape in Punjab**

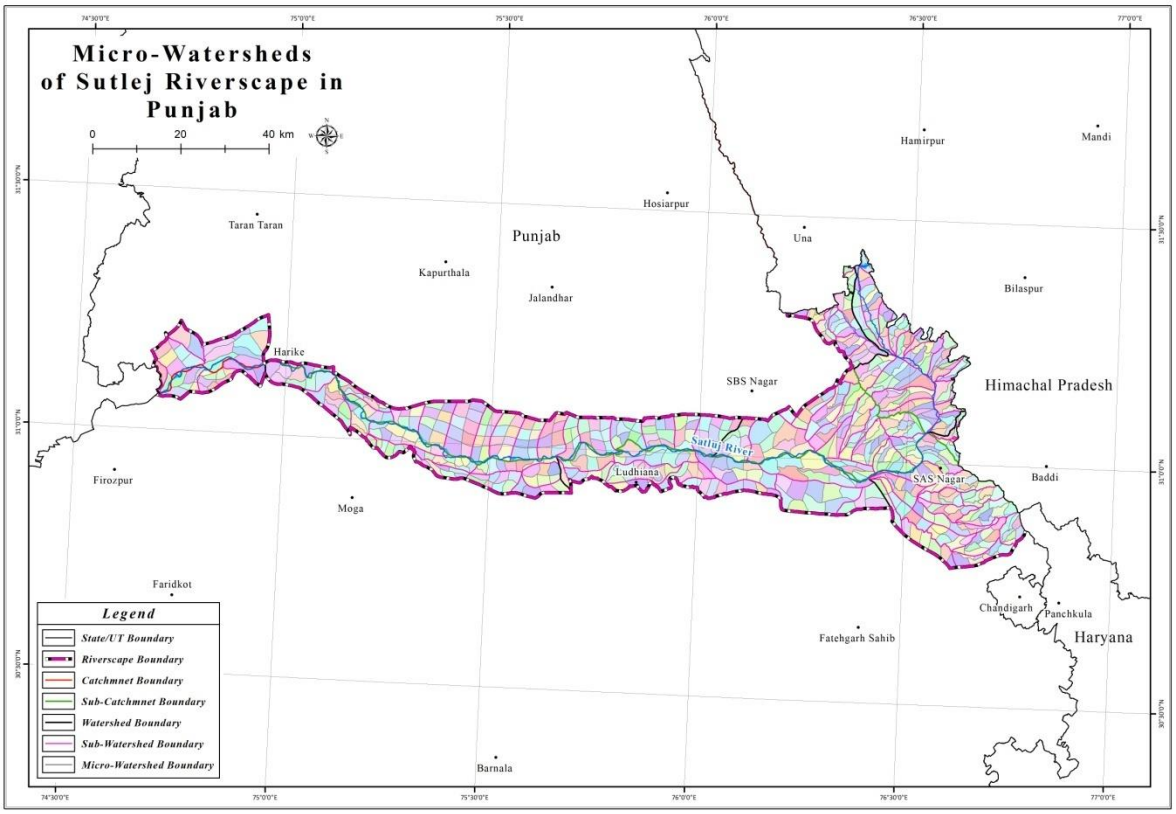



**Fig.2. 10 Micro-Watersheds of Sutlej Riverscape in Punjab**

### (ii) Land Use and Land Cover

A total of 15 major Land Use and Land Cover types i.e., Agriculture, Barren, Canal, Dense Forest, Industrial area, Mining/ Mining Dump, Moderately Dense Forest, Open Forest, Plantation, River (Dry)/River Sand, River (Perennial), Scrubs, Settlement, Water body, Wetland have been deciphered in the Riverscape. The distribution of area under different land cover and land use classes is given in Table 2. 9 and Fig. 2.11.

**Table 2.9- Distribution of Area under Different Land Use and Land Cover Categories in Punjab**

| Sr.No. | Land Use and Land Cover | Area (in $km^2$) |
|---|---|---|
| **1** | Agriculture | 3,149.21 |
| **2** | Barren | 1.27 |
| **3** | Canal | 14.07 |
| **4** | Dense Forest | 0.07 |
| **5** | Industrial Area | 14.77 |
| **6** | Mining/Mining Dump | 1.71 |
| **7** | Moderately Dense Forest | 152.01 |
| **8** | Open Forest | 298.88 |
| **9** | Plantation | 33.26 |
| **10** | River (Dry)/River Sand | 36.51 |
| **11** | River (Perennial) | 44.23 |
| **12** | Scrub | 36.67 |
| **13** | Settlement | 154.01 |
| **14** | Waterbody | 2.87 |
| **15** | Wetland | 16.68 |
| **Total** | | **3,956.22** |

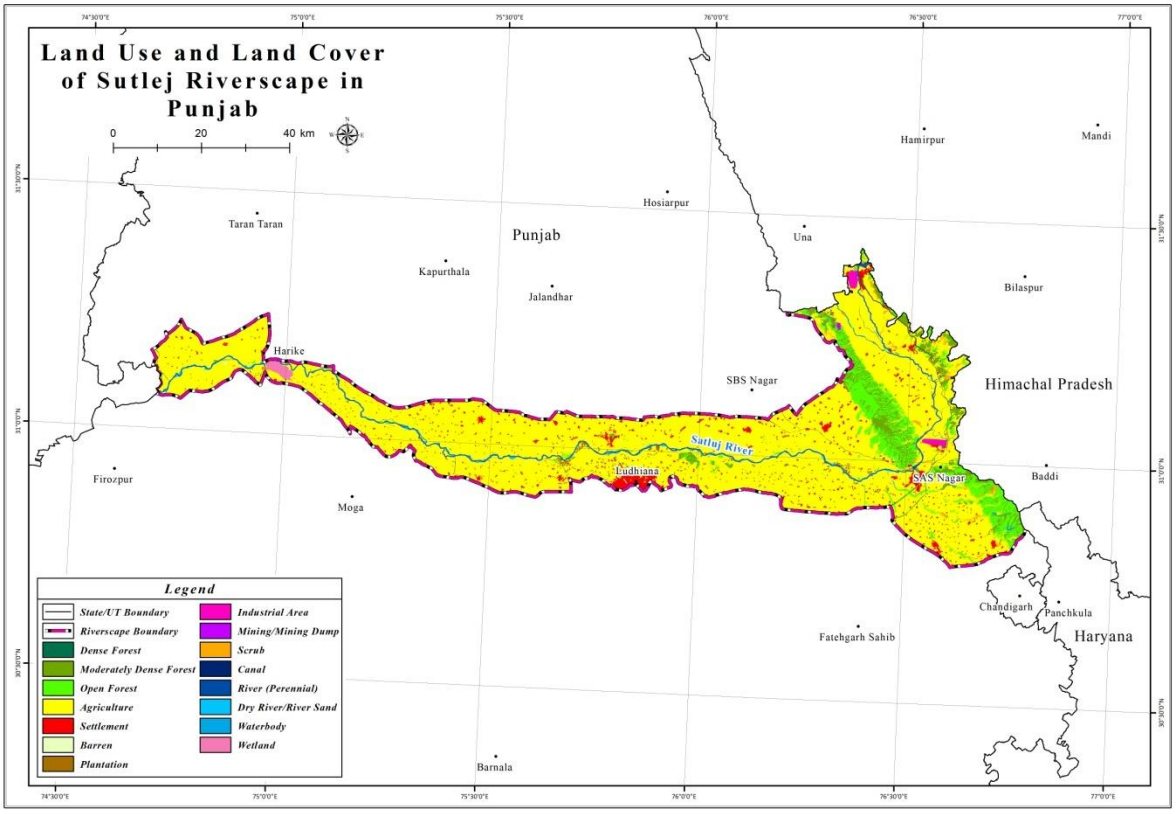



**Fig.2. 11 Land Use and Land Cover pattern of Sutlej Riverscape in Punjab**

### (iii) Elevation

The area in the Riverscape was categorized into 4 elevation classes. The distribution of areas under different elevation classes is given in Table 2.10 and Fig. 2.12.

**Table 2.10 Distribution of Area under Different Elevation Categories**

| Sr.No. | Elevation Classes | Area (in $km^2$) |
|---|---|---|
| **1** | < 250 m | 2,909.07 |
| **2** | 250 -< 500 m | 1,043.10 |
| **3** | 500 -< 750 m | 2.85 |
| **4** | 750 -≤ 1000 m | 1.20 |
| **Total** | | **3,956.22** |

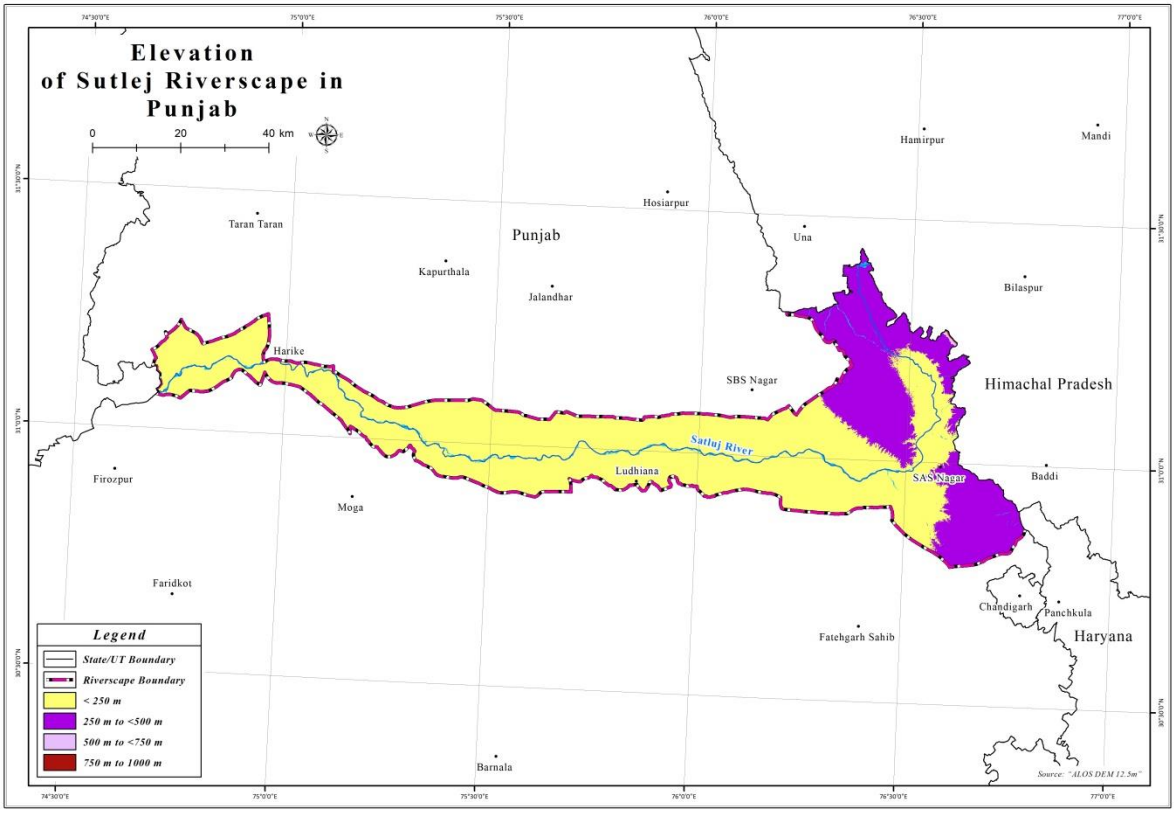



**Fig.2. 12 Different Elevation Categories of Sutlej Riverscape in Punjab**

### (iv) Slope

Slope of land is an important locality factor influencing the soil and water runoff and suitability of the area for Forestry Interventions. Lands with steep slopes are prone to soil erosion and hence do not support growth of most of the plant species unless suitable stabilization measures are adopted. The land in Punjab has been categorised into 10 classes of slope from 0° - 40° and ≥40° areas under different slope classes is given in Table 2.11 and Fig. 2.13.

**Table 2.11 Distribution of Area under Different Slope Categories**

| Sr.No. | Slope (Degree) | Area (in km$^2$) |
|---|---|---|
| **1** | < 2.5 | 2,144.17 |
| **2** | 2.5 -<5 | 1,270.45 |
| **3** | 5- <10 | 355.51 |
| **4** | 10- <15 | 105.24 |
| **5** | 15- <20 | 53.41 |
| **6** | 20- <25 | 18.63 |
| **7** | 25-< 30 | 6.08 |
| **8** | 30-< 35 | 1.87 |
| **9** | 35-< 40 | 0.63 |
| **10** | ≥ 40 | 0.23 |
| **Total** | | **3,956.22** |

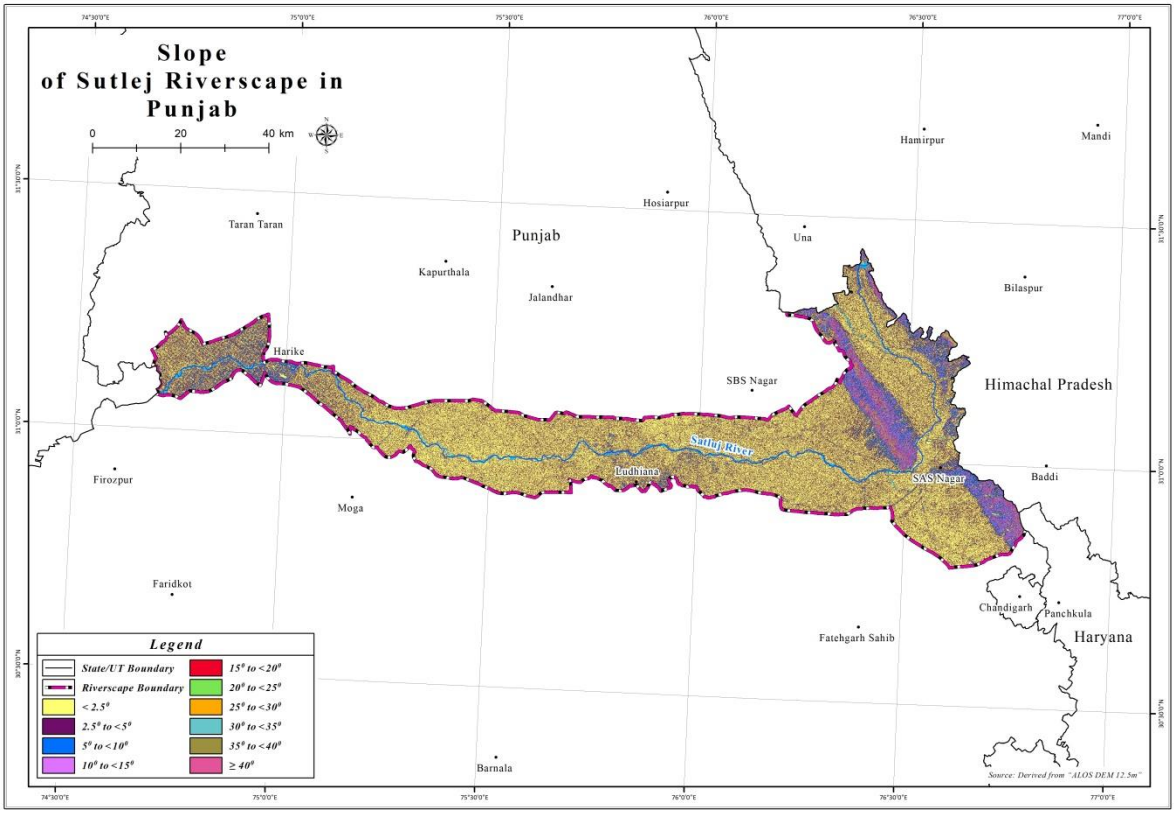



**Fig.2. 13 Different Slope Categories of Sutlej Riverscape in Punjab**

## (v) Soil Types

Soil is considered as one of the most important parameter for modelling suitability of forest plantation zones. Since choice of species mainly depend upon the soil type and soil depth these parameters have been drived from soil map prepared by NBSS-LUP for further use in modelling in the present study. A total of 7 soil type lasses have been recorded in the Riverscape in Punjab. Variuos soil types and their proportionate area estimates are given in Table 2.12 and Fig 2.14.

**Table 2.12 Distribution of Area under Different Soil types and Other Land Attributes in Punjab**

| Sr. No | Soil Type | Area (in km$^2$) |
|---|---|---|
| 1. | Fluventic Ustochrepts | 51.84 |
| 2. | Non-Soil | 356.85 |
| 3. | Typic Ustifluvents | 967.28 |
| 4. | Typic Ustipsamments | 667.30 |
| 5. | Typic Ustochrepts | 1,026.16 |
| 6. | Typic Ustorthents | 617.79 |

| | | |
|---|---|---|
| 7. | Udic Ustochrepts | 269.00 |
| **Total** | | **3,956.22** |

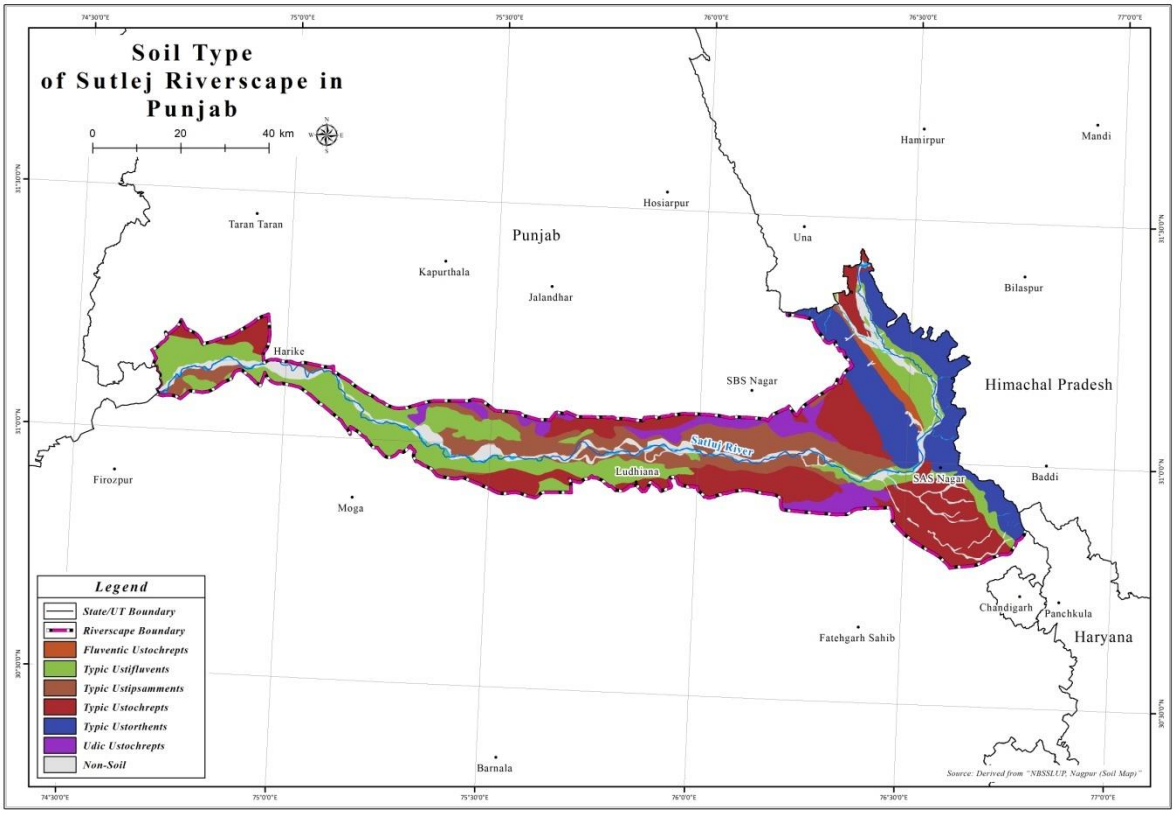



**Fig.2. 14 Soil Types of Sutlej Riverscape in Punjab**

## (vi) Soil Erosion

A total six categories of the erosion classes have been mapped in Punjab, *viz.*, < 5 t/ha/year, 5 <10 t/ha/year, 10< 20 t/ha/year, 20 < 40 t/ha/year, ≥ 40 t/ha/year and non soil category. The distribution of areas under different erosion classes is given in Table 2.13 and Fig. 2.15**.**

**Table 2.13 Distribution of Area under Different Soil Erosion Categories**

| Sr.No. | Soil Erosion | Area (in km$^2$) |
|---|---|---|
| 1 | <5 | 2,110.62 |
| 2 | 5-< 10 | 456.91 |
| 3 | 10- < 20 | 467.09 |
| 4 | 20- < 40 | 294.17 |
| 5 | ≥40 | 270.60 |
| 6 | Non Soil | 356.83 |
| **Total** | | **3,956.22** |

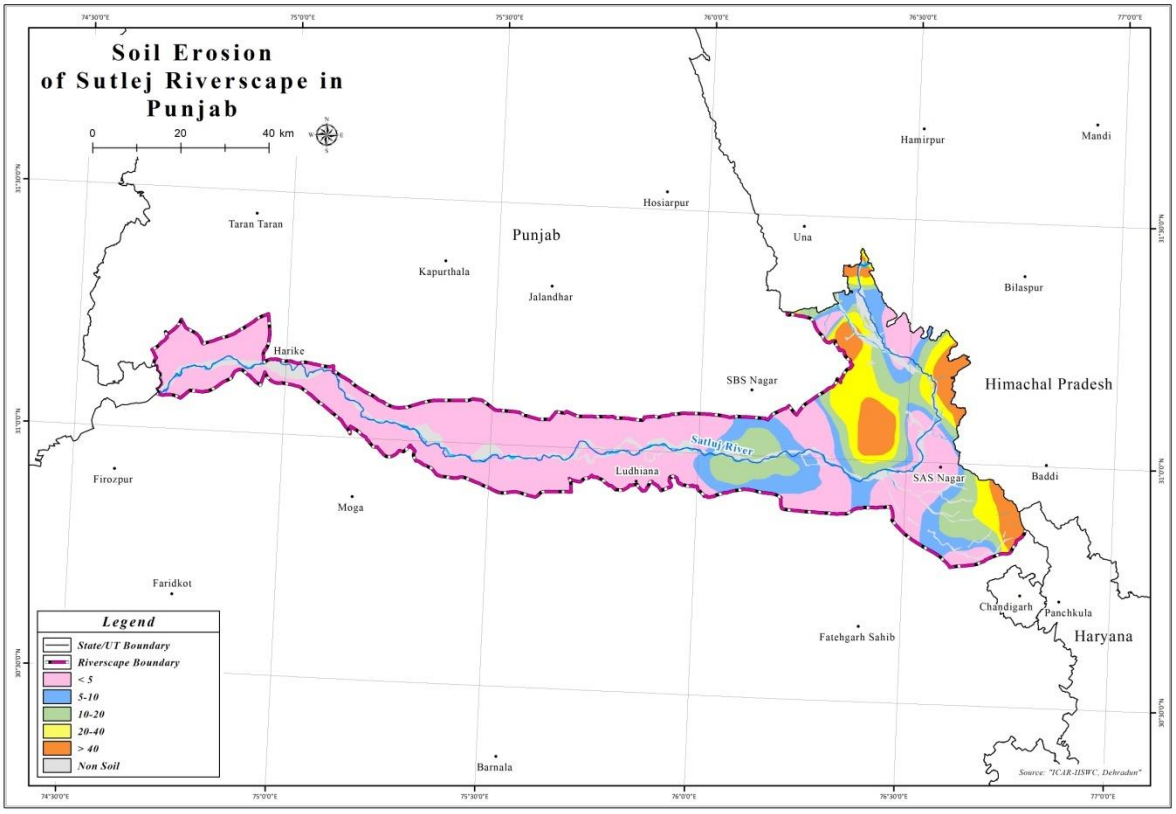



**Fig.2. 15 Different Soil Erosion CategoriesMap of Sutlej Riverscape in Punjab**

### (vii) Soil Depth

Soil depth is one of the most important factors governing the selection of species for plantation. The depth of soil is very important for the penetration of the roots of tree species. Four depth classes, *viz*., Moderately Deep, Moderately shallow, Non-Soil and Very Deep have been mapped. Additionally, river sand and water have also been mapped. The distribution of area under different soil depth classes is given in Table 2.14 and Fig. 2.16.

**Table 2.14 Distribution of Area under Different Soil Depth Categories**

| Sr.No. | Soil Depth | Area (in $km^2$) |
|---|---|---|
| **1** | Moderately Deep | 146.73 |
| **2** | Moderately Shallow | 379.43 |
| **3** | Non-Soil | 356.85 |
| **4** | Very Deep | 3,073.21 |
| **Total** | | **3,956.22** |

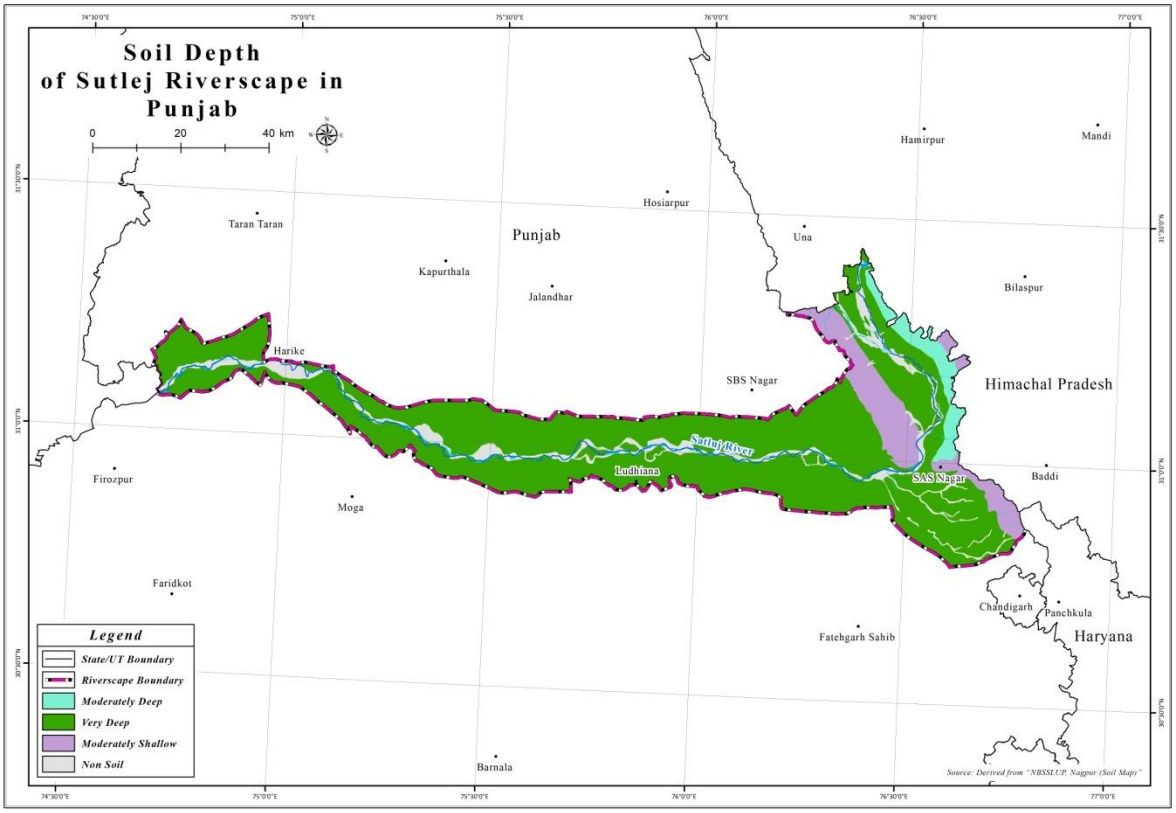



**Fig.2. 16 Different Soil Depth Categories Map of Sutlej RiverscapePunjab**

### (viii) Aspect

The aspect map has been derived from the ASTER DEM. A total of 9 classes, viz., north, north-east, east, south-east, south, south-west, west, north-west and the flat land have been deciphered in the Punjab area. The distribution of areas under different aspect classes and their area is given in Table 2.15 and Fig. 2.17.

**Table 2.15 Distribution of Area under Different Aspect Categories**

| Sr.No. | Aspect | Area (in km$^2$) |
|---|---|---|
| 1 | Flat (-1) | 504.65 |
| 2 | North (0-< 22.5, 337.5-< 360) | 401.74 |
| 3 | Northeast (22.5-< 67.5) | 399.07 |
| 4 | East (67.5-< 112.5) | 380.30 |
| 5 | Southeast (112.5-<157.5) | 479.69 |
| 6 | South (157.5-< 202.5) | 433.23 |
| 7 | Southwest (202.5-< 247.5) | 457.87 |
| 8 | West (247.5-< 292.5) | 417.53 |
| 9 | Northwest (292.5-< 337.5) | 482.14 |
| **Total** | | **3,956.22** |

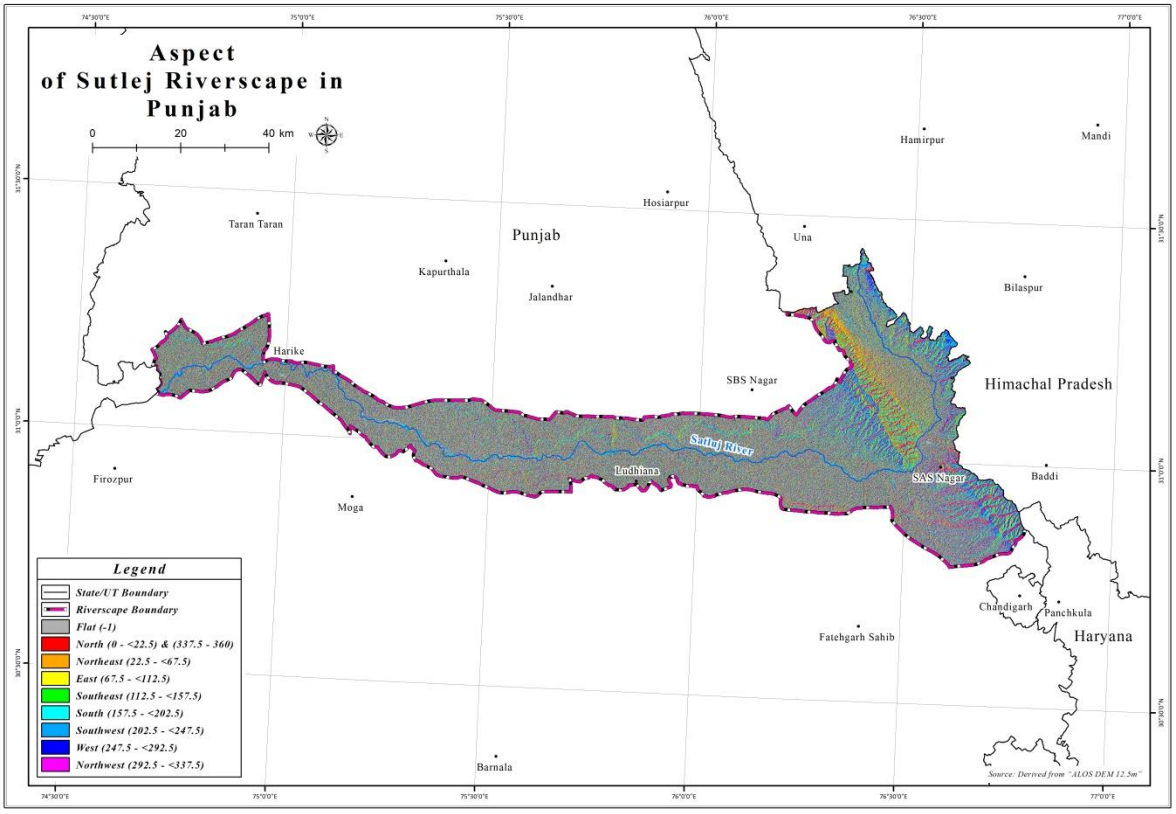



**Fig.2. 17 Different Aspect Categoriesof Sutlej Riverscape in Punjab**

### (ix) Forest Cover

The forest cover map has been prepared using data provided by the Forest Survey of India. Altogether, four forest types and one non-forest categories were recorded in the Sutlej Riverscape, where in dense forest, moderately dense forest and non forest occupies the area of 0.07 $km^2$, 152.01 $km^2$and 3468.59 $km^2$ respectively. The distribution of area under different Forest Cover categories is described in Table 2.16 and Fig 2.18.

**Table 2.16 Distribution of Area under Different Forest Cover categories in Punjab**

| Sr. No | Forest Cover | Area (in $km^2$) |
|---|---|---|
| 1. | Dense Forest | 0.07 |
| 2. | Moderately Dense Forest | 152.01 |
| 3. | Non Forest | 3,468.59 |
| 4. | Open Forest | 298.88 |
| 5. | Scrub | 36.67 |
| **Total** | | **3,956.22** |

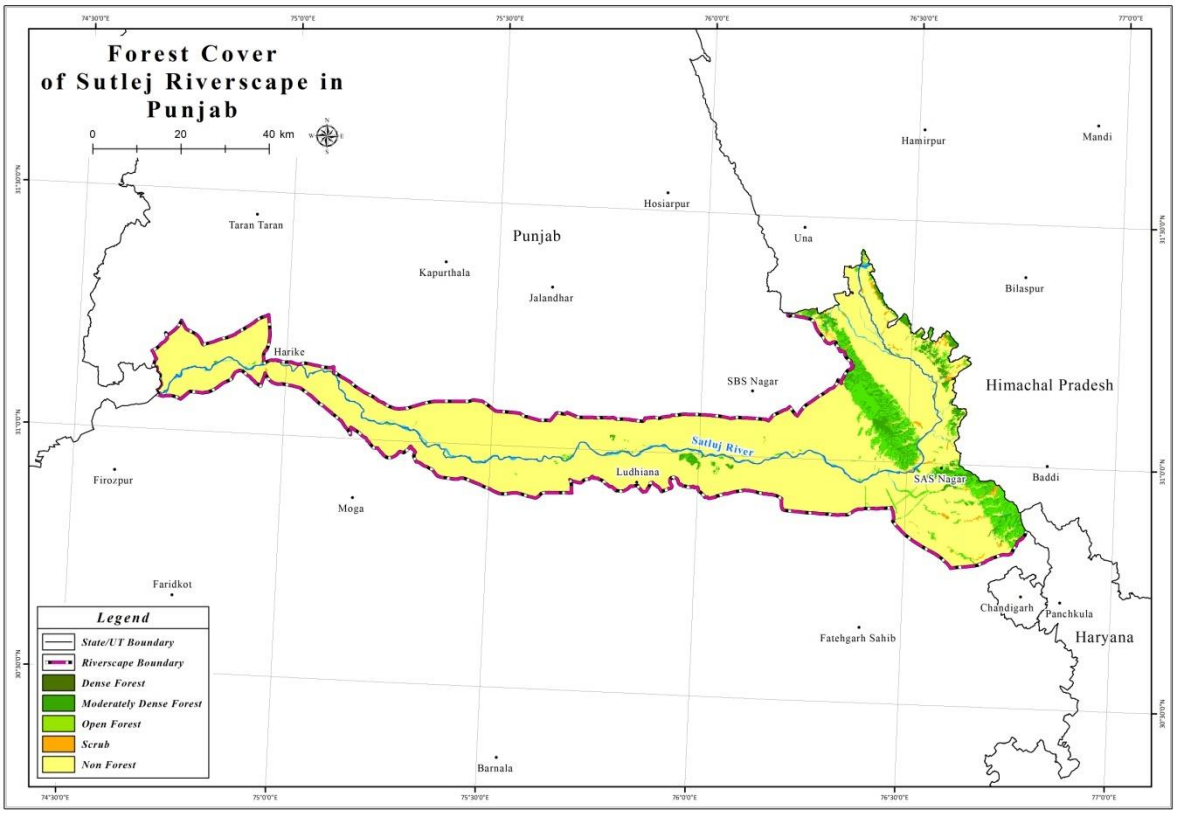



**Fig.2. 18 Forest Cover of Sutlej Riverscape in Punjab**

## (x) Forest Types

The vegetation type information is most important in suggesting suitable sites based on areas which do not have dense forest cover or which are falling in scrub and grassland along the River banks. The distribution of Forest Type Categories has been described in Table 2.17 and Fig. 2.19.

**Table 2.17 Distribution of Forest Type Categories in Punjab**

| Sr. No | Forest Type | Area (in $km^2$) |
|---|---|---|
| 1. | Non Forest | 3,468.60 |
| 2. | Scrub | 36.67 |
| 3. | Subtropical Pine Forests | 5.69 |
| 4. | Tropical Dry Deciduous Forests | 445.26 |
| **Total** | | **3,956.22** |

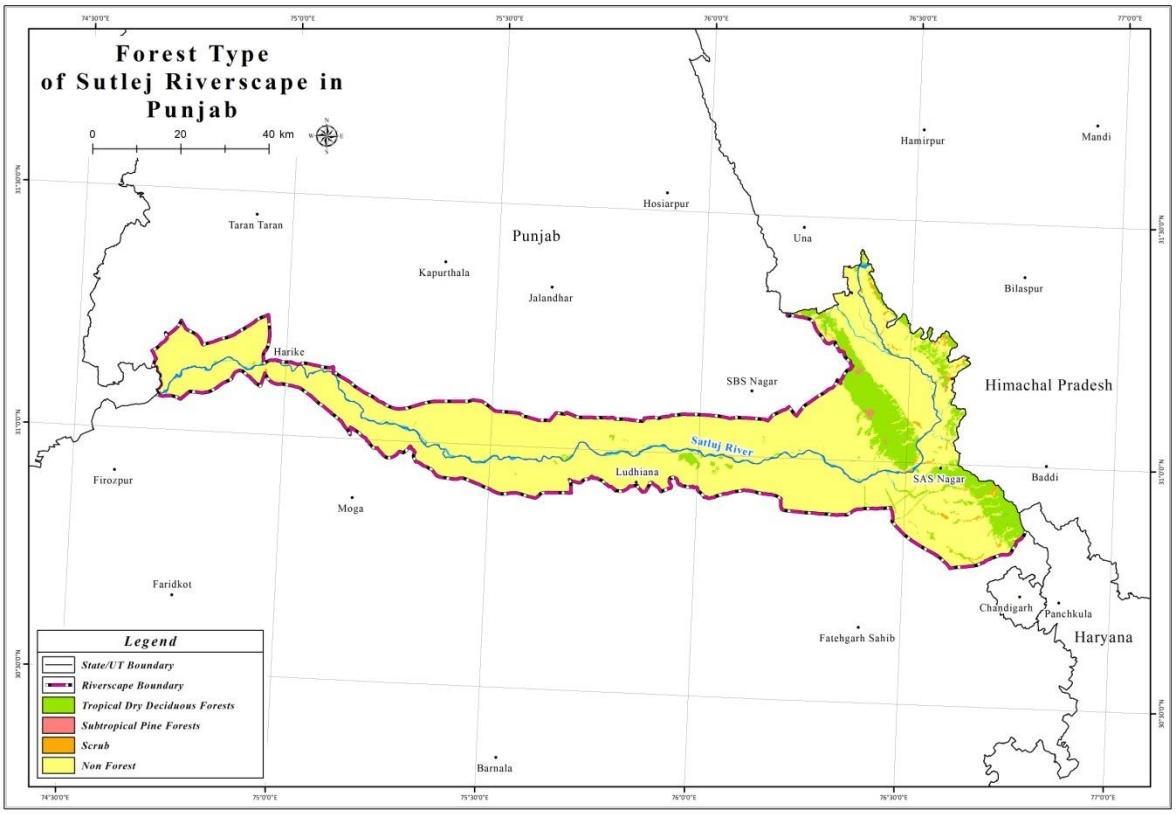



**Fig.2. 19 Forest Type Categoies of Sutlej Riverscape in Punjab**

## 2.4 Threat to River Ecosystem

The course of Sutlej River along with its tributaries in Punjab passes through fertile alluvial plains. The stretch is beset with several problems and challenges. Factors such as poor forest and tree cover, less infiltration of water in the soil, lowering of water table, over-exploitation of ground water and diversion of river water into canals for agricultural activity have led to a condition of very little water flow in the Sutlej outside the monsoon season. Reduced water flow during dry months and frequent heavy floods during rainy season are a source of great economic loss to the state. Exposed river banks are sites of constant soil erosion. Widespread and intense agricultural activity near the river erodes soil, increases silt load and adds fertilisers and pesticides in the river water. Civic and industrial waste and heavy construction activity, propelled by rising population, are greatly responsible for deterioration of water quality. Rising atmospheric temperature, absence of shade-bearing trees near water and presence of hazardous substances such as industrial chemicals, pesticides, fertilisers, herbicides and sewage in water are having a heavy toll on aquatic life, which are manifest in the poor self-cleansing ability of river water and are adversely affecting the aquatic flora and fauna. There is an unfulfilled demand for fodder, fuel and small timber for local consumption. Unemployment and underemployment are high.

Checking soil erosion in Forest, Agriculture, Urban Landscapes, increasing infiltration of water into the soil, promoting ecological water flow from land to river, enhancing bio-

fiIteration of unclean water, improving environment, meeting forest produce requirement, improving livelihood and instilling a sense of responsibility in the public towards attaining these goals are the challenges that are sought to be addressed through Forestry Interventions.

## 2.5 Prioritisation of Sites for Forestry Interventions

The project followed a multi-stakeholder approach for preparing the DPR on Forestry Interventions. The preparatory phase for DPR included review of literature, primary and secondary data collection and analysis, expert consultations and receiving inputs from the wide ranging stakeholders (policy and decision makers; Central and State Governments; State Forest Departments of two States; relevant authorities; scientific organizations dealing with environment, forestry, and wildlife; civil society; non-governmental organizations; and other interest groups).

**Priority Criteria:** The geospatial layers of soil erosion and land use were used to determine the priority areas in the region. The criteria used in geospatial modelling for determination of priority areas of Punjab. Slope was 0°-40° in all the treatment areas in the State. Superimposition of the GPS locations of the areas selected for treatment on the basis of various ground based model by the State Forest Department of Punjab.

**Priority Classes**

Statistical analysis of the areas estimates shows that 610.41 $km^2$ area is in high priority region, 966.39 $km^2$ is in medium priority and 23, 77.93 $km^2$ area is in low priority region for Punjab (Table 2.18- 2.20 and Fig. 2.20).

**Table 2.18 Priority Treatment Areas**

| Sr.No. | Priority Class | Area (in $km^2$) |
|---|---|---|
| **1** | Eliminate | 1.49 |
| **2** | High | 610.41 |
| **3** | Low | 2,377.93 |
| **4** | Moderate | 966.39 |
| **Total** | | **3,956.22** |

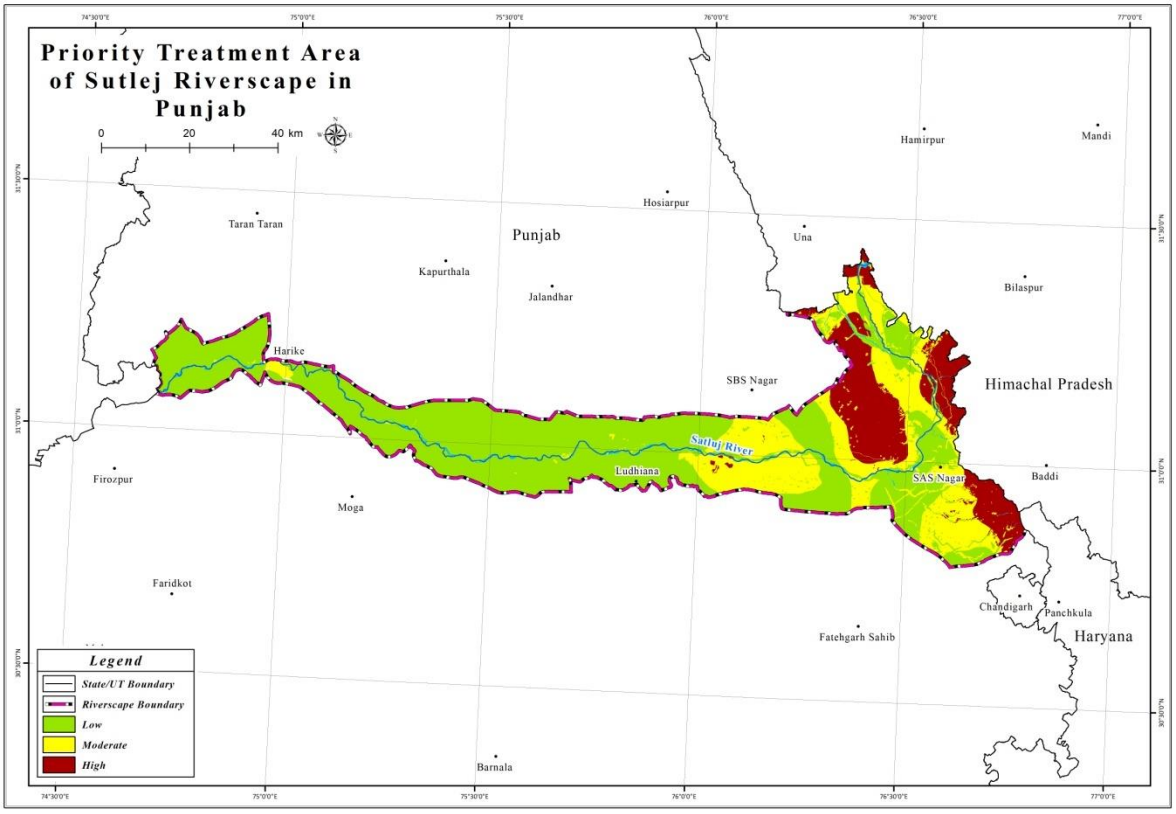



**Fig.2. 20 Priority Treatment Areas of Sutlej Riverscape in Punjab**

**Table 2.19 Priority treatment area of Sutlej Riverscape under Natural Landscape Activity (Area in Ha)**

| Sr.No. | Division | High | Medium | Low | Total |
|---|---|---|---|---|---|
| **1.** | Jalandhar | 0 | 0 | 112 | **112** |
| **2.** | Ludhiana | 0 | 35 | 35 | **70** |
| **3.** | Nawanshahr | 740 | 175 | 114 | **1,029** |
| **4.** | Rupnagar | 0 | 20 | 40 | **60** |
| **Total** | | **740** | **230** | **301** | **1,271** |

**Table 2.20 Priority treatment area of Sutlej Riverscape under Soil and Moisture Conservation Activity (Area in $m^3$)**

| Sr.No. | Division | High | Moderate | Low | Total |
|---|---|---|---|---|---|
| **1.** | Ferozepur | 0 | 21,680.28 | 7,88,319.7 | **8,10,000** |
| **2.** | Jalandhar | 0 | 10,457.85 | 6,15,542.2 | **6,26,000** |
| **3.** | Ludhiana | 15,640.97 | 8,21,690.5 | 20,77,669 | **29,15,000** |
| **4.** | Rupnagar | 4,14,465.9 | 5,10,163.3 | 5,39,870.8 | **14,64,500** |

| | | | | | |
|---|---|---|---|---|---|
| **5.** | SAS Nagar | 5,09,293.9 | 8,14,749.5 | 3,85,956.7 | **17,10,000** |
| **6.** | Nawanshahr | 2816435 | 3312902 | 3375663 | **9505000** |
| **Total** | | **37,5836** | **5491644** | **7783020** | **17030500** |

## 2.6 Proposed Forestry Interventions

In order to address the problems and challenges outlined above, Forestry Interventions have been proposed in the DPR. The following three type of landscapes have been delineated within the Riverscape for the purpose of Forestry Interventions:

**(i) Natural Landscapes**
**(ii) Agriculture Landscapes**
**(iii) Urban Landscapes**

Landscape-specific models have been proposed in the DPR. The following general principles are applicable to models in all Landscapes:

a. Native species of tree, shrub and herb species will be planted. Mixture will be used as far as possible in preference to pure plantation.
b. Pits for planting works will be dug sufficiently before planting operation according to the standard practice in the plantation area, but period between pit digging and scheduled planting time will not be more than four months so that run-off of soil through wind and water will be low. Pits will be refilled after digging.
c. Organic manures will be applied to boost plant growth in nurseries and plantations. Eco- friendly measures (e.g., physical or mechanical methods, use of natural products, etc.) of weed and pest control will be adopted without resorting to use of synthetic chemicals.
d. Protection against all types of biotic and abiotic stresses will be effectively provided to planted seedlings for four years through fence, watch and ward as well as public awareness.
e. The suggested interventions is to be considered flexible and not rigid, with respect to changing the site location, area, species and minor changes in the models and the applicable schedule rates if the circumstances demand so while implementation the DPR Sutlej in Punjab and the concerned Conservator of Forest shall exercise the power to approve such changes as and when required.
f. The project costs have been worked out on the basis of rate prevalent during year 2019-20 in the respective State/UTs and 7% escalation in the project cost during the subsequent years has been incorporated in anticipation of the cost escalation in future. However, actual project cost at the time of implementation on yearly basis shall need revision as per the change in Wholesale Price Index (WPI) on year to year basis. The Conservator of Forest may be empowered to revise the project cost accordingly for the quality desired output of the project.

### 2.6.1 Natural Landscapes

Proposed Forestry Interventions for Natural Ecosystems (i.e., forests, grasslands, and wetlands) such as protection, habitat management by way of soil and moisture conservation works, weed control, plantations, eco-restoration, bio-filters and bioremediation, etc. have been planned. Considering the type of natural ecosystems, native vegetation, soil conditions, and agro-climatic zones, potential models of various types of plantations were identified, designed, and developed.

Areas under the control of the State Forest Department will be treated through Natural Landscape models. The treatments sites usually have open forest, scrub vegetation or grasslands. The purpose of these models is protection, eco-restoration, and conservation. Altogether Five models have been proposed in the Natural Landscape, list of suggestive species (Table 2.21), cost models (Table 2.21-26) and plantation design (Fig 2.21-2.24) has been described below:

**Table 2.21 List of Species Suggested for Plantation in Natural Landscapes**

| Model Number | Species Suggested for Plantation |
|---|---|
| **SL/PB/NL/01** | **Trees:** *Senegalia catechu, Lannea coromandelica, Aegle marmelos, Pongamia pinnata, Mitragyna parvifolia, Flacourtia indica, Mallotus philippensis, Terminalia bellirica, Terminalia chebula, Terminalia arjuna, Syzygium cumini,Dalbergia sissoo, Adina cordifolia, Sapindus mukorossi, Bambusa bambos, Dendrocalamus strictus, Dendrocalamus hamiltonii, Oroxylum indicum, Holoptelea integrifolia , Ficus benghalensis, Ficus racemosa, Ficus religiosa, Albizia lebbeck, Albizia procera, Alstonia scholaris, Phyllanthus* emblica*, Ziziphus jujuba, Azadirachta indica, Bombax ceiba, Anogeissus latifolia, Desmodium oojeinense , Diospyros montana, Melia azedarach, Mangifera indica, Santalum album*, etc.<br>**Shrubs:** *Bauhinia vahlii, Murraya koenigii, Murraya paniculata, Desmodium gangeticum, Tephrosia hamiltonii, Woodfordia fruiticosa, Maesa indica, Clerodendrum* spp.*, Nyctanthes arbortristris, Vitex negundo*, etc.<br>**Medicinal and Aromatic Plants:** *Andrographis paniculata, Bacopa monnieri, Acorus calamus, Rauvolfia serpentina, Withania somnifera, Eclipta alba, Boerhavia diffusa, Mentha* spp., etc. |
| **SL/PB/NL/02** | **Trees:** *Senegalia catechu, Aegle marmelos, Pongamia pinnata, Mitragyna parvifolia, Mallotus philippensis, Terminalia bellirica, Terminalia chebula, Terminalia arjuna, Syzygium cumini, Dalbergia sissoo, Adina cordifolia,Sapindus mukorossi, Bambusa bambos, Dendrocalamus strictus, Dendrocalamus hamiltonii, Oroxylum indicum, Holoptelea integrifolia , Ficus benghalensis, Ficus racemosa, Ficus religiosa, Albizia lebbeck, Albizia procera, Alstonia* |

| | |
|---|---|
| | *scholaris, Phyllanthus* emblica*, Ziziphus jujuba, Azadirachta indica, Bombax ceiba, Anogeissus latifolia, Desmodium oojeinense , Diospyros montana, Hymenodictyon orixense, Melia azedarach, Mangifera indica, Santalum album*, etc.<br>**Grasses, Sedges and Forbs:** *Saccharum spontaneum, Saccharum bengalense,* C*arex* spp.*, Scirpus* spp.*, Cyperus* Spp.*, Bacopa monnieri, Eclipta alba, Chrysopogon zizanioides, Chrysopogon fulvus, Arundinella nepalensis, Apluda mutica, Boerhavia diffusa, Heteropogon contortus, Trifolium repens, Eragrostis nigra, Deschamsia* spp.*, Panicum maximum, Phleum pratense, Cymbopogon citratus, Arundo donax, Phragmites karka, Themeda arundinacea, Eulaliopsis binata, Dichanthium annulatum, Sporobolus diandrus, Thysanolaena latifolia, Hierochloe laxa,* etc. |
| **SL/PB/NL/03** | **Trees:** *Senegalia catechu, Aegle marmelos, Pongamia pinnata, Mitragyna parvifolia, Mallotus philippensis, Terminalia bellirica, T. chebula, T. arjuna, Syzygium cumini, Dalbergia sissoo, Adina cordifolia,Sapindus mukorossi, Bambusa bambos, Punica granatum, Dendrocalamus strictus, D. hamiltonii, Oroxylum indicum, Holoptelea integrifolia, Ficus benghalensis, F. racemosa, F. religiosa, F. hispida, Albizia lebbeck, A. procera, Alstonia scholaris, Phyllanthus* emblica*, Zizyphus jujuba, Azadirachta indica, Bombax ceiba, Anogeissus latifolia, Desmodium oojeinense , Diospyros montana, Hymenodictyon sauveolens, Melia azedarach, M. composita, Mangifera indica, Santalum album* etc.<br><br>**Grasses/Forbs:** *Saccharum spontaneum, S. bengalensis, S. munja, Chrysopogon zizanioides, Chrysopogon fulvus,Arundinella nepalensis, Apluda mutica, Boerhavia diffusa, Heteropogon contortus, Trifolium repens, Eragrostis nigra, Deschamsia* spp*, Panicum maximum, Phleum pratense, Cymbopogon citratus, Arundo donax, Phragmites karka, Themeda arundinacea, Eulaliopsis binata, Dichanthium annulatum, Sporobolus diandrus, Thysanolaena latifolia, Hierochloe laxa* etc. |
| **SL/PB/NL/04** | **Trees:** *Acacia nilotica, Senegalia catechu, Dalbergia sissoo, Melia azedarach, Ailanthus excelsa, Toona ciliata, Tectona grandis, Azadirachta indica, Cordia myxa, Morus alba, Pongamia pinnata, Tecomella undulata, Capparis decidua, Prosopis cineraria, Bombax ceiba, Sesbania sesban, Aegle marmelos, Pterocarpus marsupium, Grewia eriocarpa, Cassia fistula,*etc. |
| **SL/PB/NL/05** | **Trees:** *Dalbergia sissoo, Terminalia bellirica, Terminalia chebula, Terminalia arjuna, Melia azedarach, Acacia nilotica, Albizia lebbeck, Albizia procera, Butea monosperma, Kigelia africana , Azadirachta indica, Anthocephalus cadamba, Ailanthus excelsa, Toona ciliata,* |

| | |
|---|---|
| | *Jacaranda mimosifolia, Grevillea robusta, Salix alba, Morus alba, Delonix regia, Sesbania sesban, Alstonia scholaris, Ficus rumphii, F. benjamina, Syzygium cumini*,etc.<br>**Shrubs:** *Nerium oleander*, *Bougainvillea* spp., *Nyctanthes arbortristris*, *Spiraea* spp., *Rosa* spp., etc. |

**Table 2.22 Cost norms and details of work of Shivalik Hills Forest Enrichment Model (SL/PB/NL/01)**

| Year | Item | Details of work | Amount (Rs./ha) | Man days |
|---|---|---|---|---|
| | Number of Plants (No.) | Plants/Bamboo-400, Shrubs-400, Herbs-1600. | | |
| 1st Year | Nursery Advance Work Labour Cost (Rs.) | Cost of seedlings raising including (a) Original planting =400 per ha, (b) Shrubs-400, (c) Herbs 1600, replacement 10%= 240 per ha, Total 2640 No. in Bio-degradable polybag | 26,972 | 79 |
| 2nd Year | Advance Work Labour Cost (Rs.) | Cutting of *Lantana*/Mallah (0.5ha) etc, Kana stubbing (0.25ha), survey and alignment Earth work i.e., digging of pit of size;<br>a) 400 no x .5m x 0.5m x 0.40m<br>b) 400 no x 0.3 x 0.3 x 0.3m<br>and Patch c) 400 no x 1.00 x 0.3 x 0.10m, refilling of pits, fencing (5% of plantation cost) | 33,118 | 80 |
| 3rd Year | Creation (Rs.) | Carriage of plants, lay out of pits and patches, pitting and planting of plants, weeding hoeing (twice), application of insecticides, application of FYM/ fertilizers (twice), providing thorny protection to plants against porcupine attack, covering and uncovering of frost tender plant species (25%), preparation of inspection path,watch and ward for every 10 ha. of plantation, Cutting of *Lantana*/Mallah IInd and IIIrd times, spot irrigation (8+1 times), reopening of trenches and pits, and cost of bio-insecticide and bio-fertilizer, etc. including carriage, overhead charges (10% of planation cost) POL, OE and Miscellaneous | 74,907 | 170 |
| **Total Establishment Cost (Rs.)** | | | **1,34,997** | **329** |
| **MAINTENANCE** | | | | |
| 4th Year | Maintenance Cost - I Year i/c Material (Rs.) | Cost of seedlings (25%), cutting of *Lantana*/Mallah etc., kana stubbing, Earth work i.e.re digging of pit refilling of pits, (25%) fencing (5% of plantation cost), carriage of plants, weeding hoeing (twice), application of insecticides, application of FYM/ fertilizers(twice), providing thorny protection to | 53,201 | 127 |

| | | | | |
|---|---|---|---|---|
| | | plants against porcupine attack, covering and uncovering of frost tender plant species (25%), of inspection path,watch and ward for every 10 ha. of plantation, spot irrigation (4+1 times), reopening of trenches and pits, Bio-Insecticides including carriage, Bio-Fertilizers, etc. Including carriage, overhead charges (10% of maintenance planation cost) POL, OEand Miscellaneous | | |
| 5th Year | Maintenance Cost - II Year (Rs.) | Earth work i.e. refilling digging of pit refilling of pits (15%) fencing (5% of plantation cost), carriage of plants, weeding hoeing (twice), application of insecticides, application of FYM/ fertilizers(twice), Providing thorny protection to plants against Porcupine attack, Covering and uncovering of frost tender plant species (25%), of inspection path,Watch and ward for every 10 ha. of plantation, spot irrigation (4+1 times), reopening of trenches and pits, Bio-Insecticides, including carriage, Bio- Fertilizers, etc. Including carriage, overhead charges (10% of maintenance of planation cost) POL, OEand Miscellaneous | 23,989 | 55 |
| 6th Year | Maintenance Cost - III Year (Rs.) | Weeding hoeing (twice), application of bio-insecticides, application of FYM/ fertilizers (twice), providing thorny protection to plants against porcupine attack, watch and ward for every 10 ha. of plantation, Bio-Fertilizers, etc. Including carriage, overhead charges (10% of maintenance of planation cost) POL, OEand Miscellaneous | 5,863 | 30 |
| **Total Maintenance Cost (Rs.)** | | | **83,053** | **212** |
| **Total Cost of Plantation** | | | **2,18,050** | **521** |

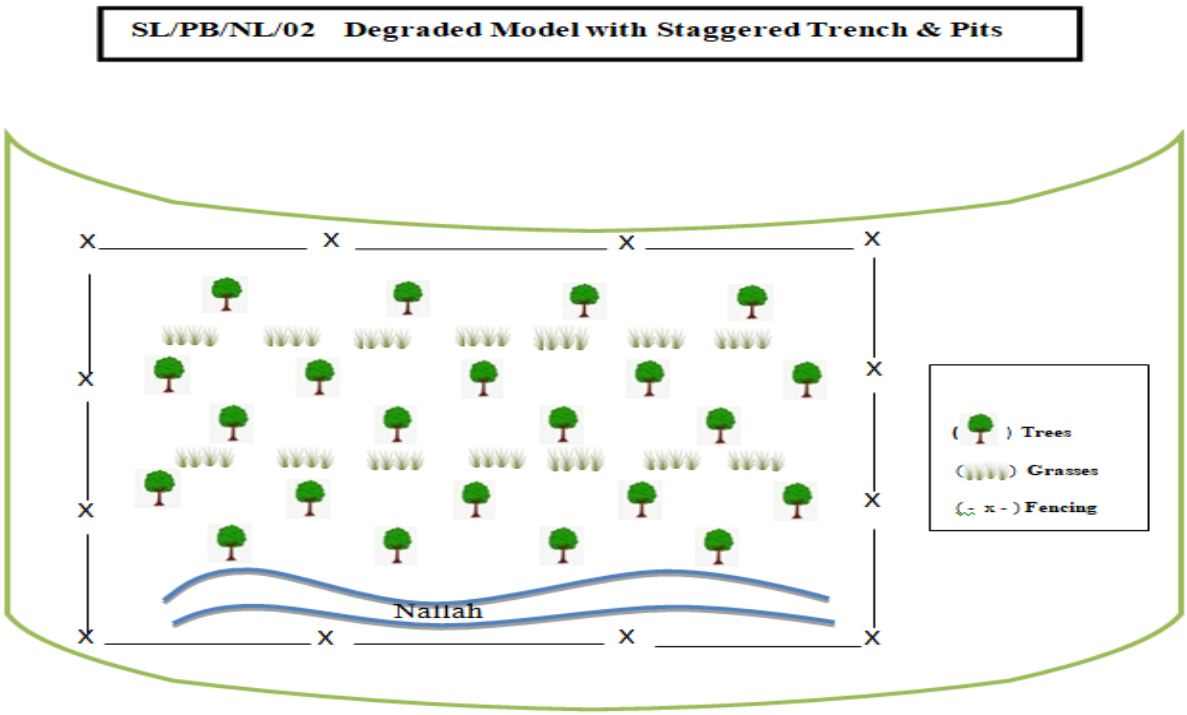



**Fig.2. 21 Plantation Design of Degraded Model with Staggered Trench and Pits Model SL/PB/NL/01**

**Table 2.23 Cost norms and details of work of Degraded Model with Staggered Trench and Pits Model (SL/PB/NL/02)**

| Year | Item | Details of work | Amount Rs./ha | Man days |
|---|---|---|---|---|
| | Number of Plants (No.) | Plants- 1000 No. Grasses- 200 patch | | |
| 1st Year | Nursery Advance Work Labour Cost (Rs.) | Cost of seedlings including (a) Original planting =1000 per ha (b) Replacement 10%= 100 per ha Total 1100 No. in Bio-degradable polybag | 14,650 | 43 |
| 2nd Year | Advance Work Labour Cost (Rs.) | Cutting of *Lantana*/Mallah, etc. kana stubbing, Survey and alignment earth work i.e., digging of trenches of size 1000m x 0.35m x 0.30m and earth work i.e., digging of patch c) 200 no x 1.00m x 0.3m x 0.10 m, refilling of pits, fencing (5% of plantation cost) | 36490 | 91 |
| 3rd Year | Creation (Rs.) | Carriage of plants, lay out of pits and patches, pitting and planting of plants, weeding hoeing (twice), application of insecticides, application of FYM/ fertilizers (twice), providing thorny | 72027 | 164 |

| | | | | |
|---|---|---|---|---|
| | | protection to plants against porcupine attack, covering and uncovering of frost tender plant species (25%), preparation of inspection path, watch and ward for every 10 ha. of plantation, cutting of *Lantana*/Mallah II$^{nd}$ and III$^{rd}$ times, spot irrigation (8+1 times), reopening of trenches and pits, insecticides including carriage, Fertilizers i.e., urea, etc. including carriage, overhead charges (10% of planation cost) POL, OE and Miscellenous. | | |
| **Total Establishment Cost (Rs.)** | | | **1,23,167** | **298** |
| **MAINTENANCE** | | | | |
| 4$^{th}$ Year | Maintenance Cost - I Year i/c Material (Rs.) | Cost of seedlings (25%), cutting of *Lantana*/Mallah, etc. kana stubbing, earth work i.e., re-digging of pit refilling of pits, (25%) fencing (5% of plantation cost), carriage of plants, weeding hoeing (twice), application of insecticides, application of FYM/ fertilizers (twice), providing thorny protection to plants against porcupine attack, covering and uncovering of frost tender plant species (25%), of inspection path, watch and ward for every 10 ha. of plantation, spot irrigation (8+1 times), reopening of trenches and pits, insecticides including carriage, fertilizers i.e., urea, etc. including carriage, overhead charges (10% of maintenance planation cost) POL, OEand Miscellenous. | 44,612 | 105 |
| 5$^{th}$ Year | Maintenance Cost - II Year (Rs.) | Earth work i.e., refilling digging of pit refilling of pits, (15%) fencing (5% of plantation cost), carriage of plants, weeding hoeing (twice), application of insecticides, application of FYM/ fertilizers (twice), providing thorny protection to plants against porcupine attack, covering and uncovering of frost tender plant species (25%), of inspection path, watch and ward for every 10 ha of plantation, spot irrigation (8+1 times), reopening of trenches and pits, insecticides including carriage, fertilizers i.e., urea, etc. including carriage, overhead charges (10% of maintenance of planation cost) POL, OE and Miscellenous. | 22,221 | 50 |
| 6$^{th}$ Year | Maintenance Cost - III Year (Rs.) | Weeding hoeing (twice), application of insecticides, application of FYM/ fertilizers (twice), providing thorny protection to plants against porcupine attack, watch and ward for every 10 ha of plantation, fertilizers i.e., urea, | 5863 | 10 |

| | | | | |
|---|---|---|---|---|
| | | etc. including carriage, overhead charges (10% of maintenance of planation cost) POL, OEand Miscellenous. | | |
| **Total Maintenance Cost (Rs.)** | | | **72,696** | **165** |
| **Total cost of Plantation** | | | **1,95,863** | **463** |

**Table 2.24 Cost norms and details of work of Control/ Removal of Invasive Species and *Lantana* Model (SL/PB/NL/03)**

| Year | Item | Details of work | Amount Rs./ha | Man days |
|---|---|---|---|---|
| | Number of Plants (No.) | Trees/Bamboo: 400 , Grasses- 200 patch | | |
| 1st Year | Nursery Advance Work Labour Cost (Rs.) | Cutting/removal/disposal of *Lantana* (CRS), *Lantana* cleaning (Sprouts and seedlings) one time after 1st cut, tending operations, cost of Seeds and broadcast sowing of grass pellets contingency @5% of total cost | 25,620 | 72 |
| **Total Establishment Cost (Rs.)** | | | **25,620** | **72** |
| **MAINTENANCE** | | | | |
| 2nd Year | Maintenance Cost - I Year i/c Material (Rs.) | *Lantana* cleaning (Sprouts and seedlings) one time after 1st cut, tending operations, cost of seeds and broadcast sowing of grass pellets | 13,210 | 36 |
| 3rd Year | Maintenance Cost - II Year (Rs.) | *Lantana* cleaning (Sprouts and seedlings) one time after 1st cut, tending operations, cost of seeds and broadcast sowing of grass pellets | 14,131 | 36 |
| 4th Year | Maintenance Cost - III Year (Rs.) | *Lantana* cleaning (Sprouts and seedlings) one time after 1st cut and tending operations | 12,284 | 36 |
| **Total Maintenance Cost (Rs.)** | | | **39,625** | **108** |
| **Total cost of Plantation** | | | **62,245** | **180** |

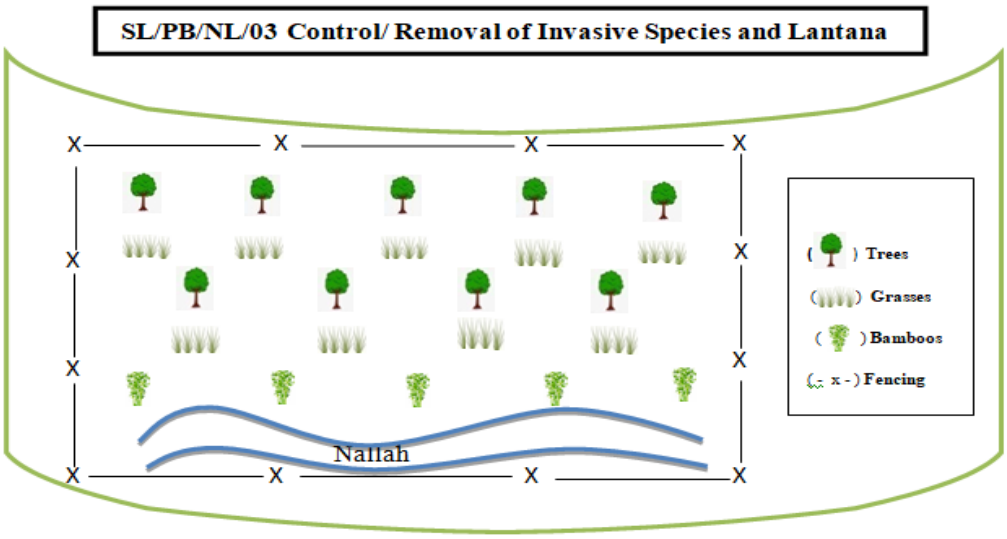



**Fig.2. 22 Plantation Design of Control/ Removal of Invasive Species and *Lantana* Model SL/PB/NL/03**

**Table 2.25 Cost norms and details of work of Restoration of Degraded Forests Model (SL/PB/NL/04)**

| Year | Item | Details of work | Amount (Rs./ha) | Man days |
|---|---|---|---|---|
| | Number of Plants (No.) | Plants- 1000 No. | | |
| 1st Year | Nursery Advance Work Labour Cost (Rs.) | Cost of seedlings including; (a) Original planting =1000 per ha (b) Replacement 10%= 100 per ha Total 1100 No. in Bio-degradable polybag | 16,115 | 47 |
| 2nd Year | Advance Work Labour Cost (Rs.) | Cutting of *Lantana*/Mallah, etc. kana stubbing, survey and alignment Earth work i.e., digging of pit of size; a) 1000 no. x 0.5m x 0.5m x 0.40m, refilling of pits and fencing (5% of plantation cost) | 25,100 | 70 |
| 3rd Year | Creation (Rs.) | Carriage of plants, lay out of pits and patches, pitting and planting of plants, weeding hoeing (twice), application of insecticides, application of FYM/ fertilizers (twice), providing thorny protection to plants against porcupine attack, covering and uncovering of frost tender plant species (25%), preparation of inspection path, watch and ward for every 10 ha. of plantation, Cutting of *Lantana*/Mallah IInd and IIIrd times, spot irrigation (8+1 times), reopening of trenches and pits, insecticides including carriage, fertilizers i.e., urea, etc. including carriage, overhead charges (10% of planation cost) POL, | 1,10,424 | 305 |

| | | | | |
|---|---|---|---|---|
| | | OEand Miscellenous | | |
| **Total Establishment Cost (Rs.)** | | | **1,51,639** | **422** |
| **MAINTENANCE** | | | | |
| 4th Year | Maintenance Cost - I Year i/c Material (Rs.) | Cost of seedlings (25%), cutting of *Lantana*/Mallah, etc. kana stubbing, earth work i.e., re-digging of pit refilling of pits, (25%) fencing (5% of plantation cost), carriage of plants, weeding hoeing (twice), application of insecticides, application of FYM/ fertilizers (twice), providing thorny protection to plants against porcupine attack, covering and uncovering of frost tender plant species (25%), of inspection path, watch and ward for every 10 ha of plantation, spot irrigation (8+1 times), reopening of trenches and pits, insecticides including carriage, fertilizers i.e., urea, etc. including carriage, overhead charges (10% of maintenance planation cost) POL, OEand Miscellenous. | 51,534 | 118 |
| 5th Year | Maintenance Cost - II Year (Rs.) | Earth work i.e., refilling digging of pit refilling of pits, (15%) fencing (5% of plantation cost), carriage of plants, weeding hoeing (twice), application of insecticides, application of FYM/ fertilizers (twice), providing thorny protection to plants against porcupine attack, covering and uncovering of frost tender plant species (25%), of inspection path, watch and ward for every 10 ha of plantation, Spot irrigation (8+1 times), reopening of trenches and pits, insecticides including carriage, fertilizers i.e., urea, etc. including carriage, overhead charges (10% of maintenance of planation cost) POL, OEand Miscellenous. | 21,346 | 41 |
| 6th Year | Maintenance Cost - III Year (Rs.) | Weeding hoeing (twice), application of insecticides, application of FYM/ fertilizers (twice), providing thorny protection to plants against porcupine attack, watch and ward for every 10 ha of plantation, fertilizers i.e., urea, etc. including carriage, overhead charges (10% of maintenance of planation cost) POL, OEand Miscellenous. | 7,394 | 10 |
| **Total Maintenance Cost (Rs.)** | | | **80,274** | **169** |

| | | |
|---|---|---|
| **Total cost of Plantation** | **2,32,725** | **592** |

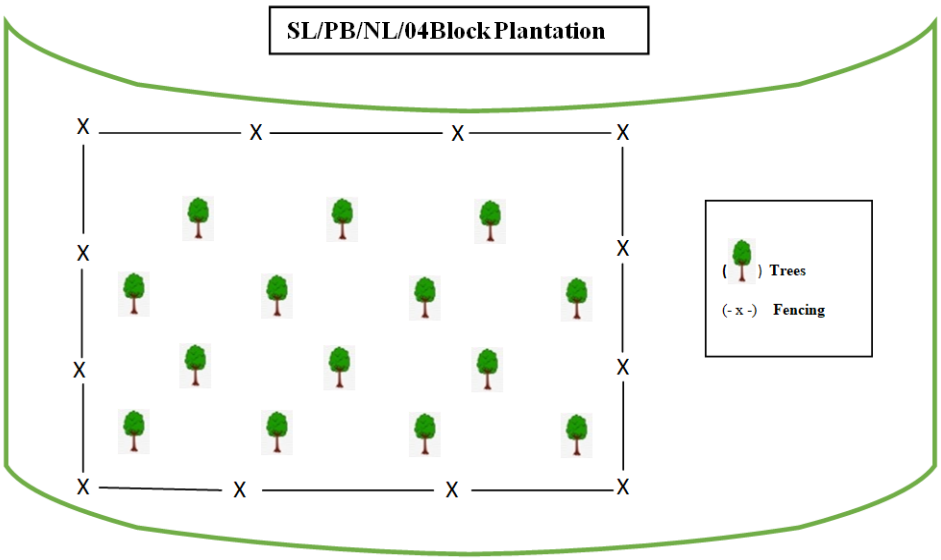



**Fig.2. 23 Plantation Design of Restoration of Degraded Forests Model SL/PB/NL/04**

**Table 2.26 Cost norms and details of work of Road Side Plantation Model (SL/PB/NL/05)**

| Year | Item | Details of work | Amount (Rs/ha) | Man days |
|---|---|---|---|---|
| | Number of Plants (No.) | Plants- 1000 No., Herbs- 2500 | | |
| 1st Year | Nursery Advance Work Labour Cost (Rs.) | Cost of seedlings including; (a) Original planting =3500 per ha (b) Replacement 10%= 350 per ha Total 1100 No. in Bio-degradable polybag Cost of Herbs - (a) Original planting =2500 per ha (b) Replacement 10%= 250 per ha Total 2750 No. in Bio-degradable polybag (Ist year) | 38115 | 111 |
| 2nd year | Advance Work Labour Cost (Rs.) | Cutting of *Lantana*/Mallah, etc. kana stubbing, survey and alignment earth work i.e., digging of pit of size; a) 1000 no. x 0.5m x 0.5m x 0.40m, b) 2500 no. Spacing (m) - 2 x 2, Pit size (cm) – 30 x 30 x 30, Refilling of pits, Fencing (5% of plantation cost) | 52361 | 119 |
| 3rd Year | Creation (Rs.) | Carriage of plants, lay out of pits and patches, pitting and planting of plants, weeding hoeing (twice), application of insecticides, application of FYM/ fertilizers (twice), providing thorny protection to plants against porcupine attack, covering and uncovering of frost tender plant species | 180376 | 442 |

| | | | | |
|---|---|---|---|---|
| | | (25%), preparation of inspection path, watch and ward for every 10 ha. of plantation, cutting of *Lantana*/Mallah II[nd] and III[rd] times, spot irrigation (8+1 times), reopening of trenches and pits, insecticides including carriage, fertilizers i.e., urea, etc. including carriage, overhead charges (10% of plantation cost) POL, OEand Miscellenous. | | |
| **Total Establishment Cost (Rs.)** | | | **2,70,852** | **620** |
| **MAINTENANCE** | | | | |
| 4[th] year | Maintenance Cost - I Year i/c Material (Rs.) | Cost of seedlings (25%), cutting of *Lantana*/Mallah, etc. kana stubbing, earth work i.e. refilling digging of pit refilling of pits, (25%) fencing (5% of plantation cost), carriage of plants, weeding hoeing (twice), application of insecticides, application of FYM/ fertilizers (twice), providing thorny protection to plants against porcupine attack, Covering and uncovering of frost tender plant species (25%), of inspection path, watch and ward for every 10 ha of plantation, spot irrigation (8+1 times), reopening of trenches and pits, insecticides including carriage, fertilizers i.e., urea, etc. including carriage, overhead charges (10% of maint of plantation cost) POL, OEand Miscellenous. | 125712 | 311 |
| 5[th] year | Maintenance Cost - II Year (Rs.) | Earth work i.e., refilling digging of pit refilling of pits, (15%) fencing (5% of plantation cost), carriage of plants, weeding hoeing (twice), application of insecticides, application of FYM/ fertilizers (twice), providing thorny protection to plants against porcupine attack, covering and uncovering of frost tender plant species (25%), of inspection path, watch and ward for every 10 ha of plantation, spot irrigation (8+1 times), reopening of trenches and pits, Insecticides including carriage, fertilizers i.e., urea, etc. including carriage, overhead charges (10% of maint of plantation cost) POL, OEand Miscellenous. | 47220 | 114 |
| 6[th] year | Maintenance Cost | Weeding hoeing (twice), application of | 5863 | 10 |

| | | | | |
|---|---|---|---|---|
| | - III Year (Rs.) | insecticides, application of FYM/ fertilizers (twice), providing thorny protection to plants against porcupine attack, watch and ward for every 10 ha of plantation, fertilizers i.e., urea, etc. including carriage, overhead charges (10% of maintenance of plantation cost) POL, OE and Miscellenous. | | |
| **Total Maintenance Cost (Rs.)** | | | **1,78,795** | **435** |
| **Total cost of Plantation** | | | **4,49,648** | **1,107** |

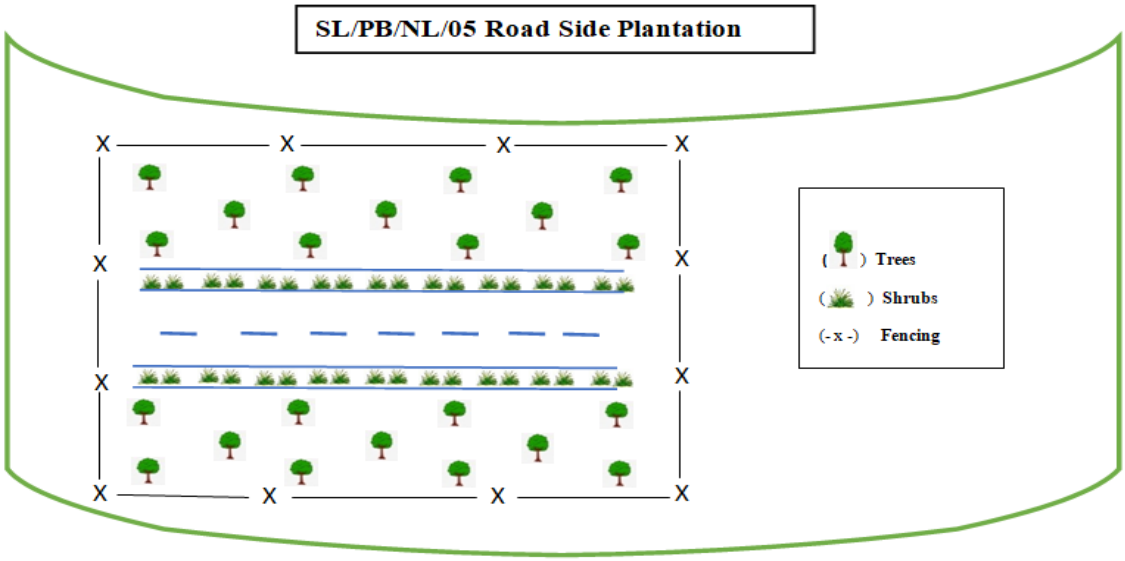



**Fig.2. 24 Plantation Design of Road Side Plantation Model SL/PB/NL/05**

### 2.6.2 Agriculture Landscapes

The Agriculture Landscapes are largely in the rural environment and surrounding matrix of the Riverscape. Agricultural models will be implemented in private farmland and community/panchayat land. Availability of land will be ascertained by officials of the State Forest Department based upon proposals from local farmers and communities. Plants will be supplied to farmers and local communities who will carry out planting. Maintenance cost will be given to the landowners based upon plant survival at the end of first, second, third and fourth year. 2 models for Agricultural Landscape have been prescribed which is described below:

**Model: SL/PB/AL/01 Boundary Plantation Model**
**Zone: Agriculture/ Horticulture land in Punjab**
The model will be applied in agriculture fields in the plains of Punjab. These fields are intensively cultivated wheat, rice, sugarcane, etc. and open to soil erosion especially during flood irrigation.

Heavy monsoon rains in this zone transport huge quantities of silt to Sutlej causing siltation and floods in adjoining plains. Intensive cultivation in this zone makes these areas vulnerable to soil erosion. Effective Forestry Interventions in these sites can help significantly in improvement of the flow of Sutlej and its tributaries.

**List of Species Suggested for Plantation**

**Trees:** *Populus deltoides, Melia composita, Phyllanthus emblica, Aegle marmelos, Albizia* spp., *Azadirachta indica, Syzygium cumini, Ficus racemosa, Gmelina arborea, Holarrhena antidysenterica, Santalum album, Tamarindus indica, Terminalia arjuna, Terminalia bellirica, Terminalia chebula, Grewia* spp.,etc.

**Model SL/PB/AL/02 Block Plantation Model**

This Model will be applied in agriculture fields in the plains of Punjab. These fields are intensively cultivated for wheat, rice, sugarcane, etc. and open to soil erosion especially during flood irrigation.
Heavy monsoon rains in this zone transport huge quantities of silt to Sutlej River causing siltation and floods in adjoining plains. Intensive cultivation in this zone makes these areas vulnerable to soil erosion. Effective Forestry Interventions in these sites can help significantly in improvement of the flow of Sutlej River and its tributaries.

**List of Species Suggested for Plantation**
**Trees:** *Populus deltoides, Melia composita, Phyllanthus emblica, Aegle marmelos, Azadirachta indica, Syzygium cumini, Gmelina arborea, Holarrhena antidysenterica, Santalum album, Tamarindus indica, Terminalia arjuna, Terminalia bellirica, Terminalia chebula, Sapindus mukorossi, Acacia nilotica, Senegalia catechu Dalbergia sissoo, Toona ciliata, Tectona grandis, Morus alba, Pongamia pinnata, Prosopis cineraria, Bombax ceiba, Sesbania sesban, Grewia elastica,* etc.

### 2.6.3 Urban Landscapes

Different types of sites would require varied interventions as per the context. The urban areas provide highly complex site conditions and a variety of peculiar problems. It is extremely important to select species, varieties and designs that show adaptability to such complex site conditions.

Accordingly, altogether four different models have been included in the DPR:
**(i)** Bio-remediation and Bio-filtration
**(ii)** Riverfront Development
**(iii)** Institutional Plantation
**(iv)** Eco-Park Development

#### 2.6.3.1 Bio-remediation and Bio-filtration

**Model: SL/PB/UL/01 Bio-remediation and Bio-filtration**

The pollution control board already released the list of Urban/ Semi Urban area which are polluting the Rivers or their tributaries, so the areas are identified in the Riverscape accordingly, and one site can be termed as 1 hectare (virtually) and where possible Seechewal model of Punjab or its modification can also be adopted.

The State Forest Department, municipal or Panchayat bodies have to adopt the suitable approach for bio-filter suiting to the specific requirements and site characteristics. The model will include the following activities.

1. Wastewater treatment through mechanical measures as per the site requirement.
2. Drainage line treatment by planting grasses, herbaceous vegetation and shrubs.
3. Bio-filters: Bio-filters may be of different types: Free floating macrophyte bio-filter, emergent macrophyte bio-filter, sub-merged macrophyte biofilter, multispecies algal bio-filter.

**List of Species Suggested for Plantation**

*Tecoma stans*, *Eichhornia crassipes* (water hyacinth), *Spirodela polyrrhiza*, *Acorus calamus*, *Typha* spp., *Cyperus* spp., *Scirpus* spp., *Phragmitis* spp., etc.

**2.6.3.2 River Front Development**
**MODEL –SL/ PB / UL/02**

The proposed model of Riverfront development would involve plantation of avenue shrubs and trees along the Riverbank to stabilize the soil and protect the bank from erosion. It would also have beds of annual flowering plants and patches of grasses. The area is so developed that would provide a pleasing and relaxing environment to the visitors. It would be a typical landscaping area comprised of vegetation and non-vegetation components.

According to requirements following components need to be created for Riverfront development

1. **Vegetation Part**: Grove consisting of shade trees, ornamental trees and bamboos, small herbal garden, climbers, hedges, grasses for lawn, etc.
2. **Non-vegetation Part**: Stairs, pathways, walking trails, stone pitching, benches, rain shelters, e-public utilities, parking area, information centre, refreshment area etc. as per the site specific requirements.

The vegetation and non-vegetation components will be arranged in such a way to enhance the aesthetic beauty of Riverfront. Ornamental species will be planted according to their recommended spacing and site specific suitability.

For using the available space economically and efficiently multi-tier planting methods will be used. Soil binding and water loving ornamental tree and shrub species are ideal choice for Riverbank planting. To bind the surface soil, grasses and surface growers will be allowed to cover the surface and protect soil from erosion especially during rainy season or River flooding. It will minimise soil loss through sheet erosion, splash erosion and rill erosion. It will also improve rain water per collation or absorption. Besides this, small to medium sized herbs and shrubs will be accommodated at the second layer of vegetation to intercept some amount of sunlight and stop the fast/ forceful falling of rain drops directly from sky in turn

which stop soil erosion (i.e., splash erosion). Small to medium sized ornamental trees or larger shrubs i.e. mainly light demanding plants will be accommodated at the third layer of canopy to cover the crown area. This layer will provide small timber, fuel, fodder and intangible benefits. The top canopy will be occupied by the strong light demanding species which are ultimately the dominant species on Riversides.

**List of Species Suggested for Plantation**

**Trees*:*** *Jacaranda mimosifolia, Grevillea robusta, Pongamia pinnata, Albizia* spp., *Butea monosperma, Kigelia pinnata, Dalbergia sissoo, Delonix regia, Salix* spp., *Saraca asoca, Polyalthia longifolia, Callistemon citrinus* etc.

**Shrubs:** *Bougainvillea* spp., *Rosa* spp., *Nerium indicum, Nyctanthes arbor-tristis, Spiraea* spp., etc.

### 2.6.3.3 Institutional Plantations

**Model –(SL/ PB / UL/03)InstitutionPlantation**

Under this model mainly ornamental, shade and fruit plants will be encouraged for planting. Evergreen plants especially Silver oak (*Grevillea robusta*) will be preferred so that the leaves do not shed during winter months when air pollution is usually high in plains. Plantation of forest species will be raised near the vicinity of various institutions and industries at 3m x 3m. Pit size of 45 cm x 45 cm x 45 cm will be used for plantation. After land development, pit digging etc. plants mainly of broadleaved species *Syzygium cumini, Anthocephalus cadamba, Dalbergia sissoo, Melia composita, Pongamia pinnata, Holoptelia integrifolia*, *Acacia nilotica*, etc. will be planted. The initiative will beautify the area, create awareness among people associated with institution and industries and promote environmental services, besides providing economic returns from under-utilized land.

The River team has consulted the secondary data of District wise/ Block wise in Riverscape regarding schools (Universities, Collages, Corporate/ Factory, Big hotels, Corporations, other NGO's, the Railways). Total numbers be worked out 20% of these can be taken in this component and the institution taken as one hectare. The forest department and commissioner of the district can be taken on board for providing the land for institutions for plantations. The 20% of number can be distributed in these years in equal proportion or in the ratio of 30:30:40 in each year

**List of Species Suggested for Plantation**

**Trees:** *Syzygium cumini, Anthocephalus cadamba, Dalbergia sissoo, Melia composita, Pongamia pinnata, Thuja orientalis, Cryptomeria japonica, Araucaria araucana, Jacaranda mimosifolia, Grevillea robusta, Albizia* spp., *Delonix regia, Salix* spp., *Saraca asoca, Polyalthia longifolia, Callistemon citrinus, Kigelia pinnata*, etc.

### 2.6.3.4 Eco-Park Development

**Model – SL/ PB/ UL/04 Eco-Park Development**

An Eco-Park will be better equipped than Riverfront development to facilitate visitors. An Eco-park will have both vegetation and non vegetation components. Even in the Eco-Parks

the proportion of ornamental plants will be relatively more than in the Riverfront development model.

According to requirement list of components to be created under this model

1. **Vegetation part**: Miscellaneous ornamental plant species e.g. trees, shrubs, herbs, creepers, hanging plants etc.
2. **Non-vegetation part**: Fencing, stairs, pathways, walking trails, stone pitching, rain shelter, e-public utilities, benches parking area, information centre, children playing area, pond beautification, lands scaping etc as per site-specific requirements.

The River team has consulted various stakeholders having land for developing Eco-Park development which can be near any urban/ semi urban area. The availability of land should be taken after consultation with respective stakeholders that can be anything from 0.5– 2 ha.

**List of Species Suggested for Plantation**

**Trees:** *Jacaranda mimosifolia, Grevillea robusta, Thuja orientalis*, *Cryptomeria japonica, Araucaria araucana, Albizia* spp., *Delonix regia*, *Butea monosperma*, *Kigelia pinnata, Dalbergia sissoo, Pongamia pinnata, Salix* spp., *Saraca asoca, Polyalthia longifolia, Callistemon citrinus, Cinnamomum tamala,* etc.

**Shrubs:** *Bougainvillea* spp., *Rosa* spp., *Nerium indicum, Nyctanthes arbor-tristis, Spiraea* spp. *Murraya koenigii, Jasminium* spp., etc.

### 2.6.4 Conservation Interventions

Three types of Conservation Interventions *viz*., (a) Soil and Water Conservation, (b) Riparian Wildlife Management, and (c) Wetland Management are being proposed for implementation by two State level IAs. Proposed Conservation Interventions will be implemented at the State and local field levels. Details of these Conservation Interventions are given in Volume I of the DPR.

### 2.6.5 Supporting Activities

A number of supporting activities, viz., Policy level interventions, Concurrent research, Capacity building, Awareness, Monitoring, and Evaluation are considered vital for successful and effective execution of the proposed Forestry Interventions. The strategies and specific interventions for these important supporting activities are given in Volume I of the DPR.

A multi-tiered mechanism has been suggested for monitoring of the project. The structure of the mechanism has been shown in the Fig.2.25.

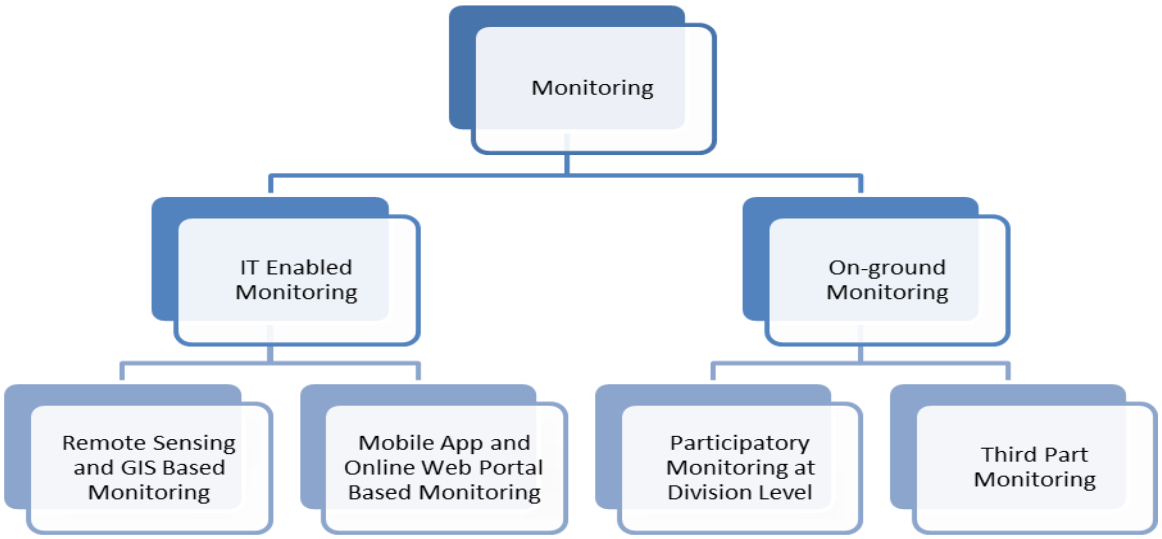



**Fig.2. 25 Multi-Tiered Monitoring Mechanism for Proposed Forestry Interventions in Sutlej Riverscape in Punjab**

## 2.7 Physical and Financial Targets

The physical and financial projections of all the five interventions to be undertaken for the cost duration as well as various Divisions are given in Table 2.27 - 2.44 given below and the consent for availability of land for proposed Forestry Interventions have been obtained from PCCF (HoFF), Punjab Forest Department (Annexure at page No. 282).

**Table 2.27 – Component/ Activity Wise Budget Allocation for Punjab**

| Sr. No. | Component/ Activity | Amount (Rs. in Crore) | Allocation (%) |
|---|---|---|---|
| **A.** | **Implementation of Forestry Interventions in Punjab of Sutlej Riverscape (A1+A2)+(C1+C3)** | **171.02** | **89.25** |
| **A.1** | **Plantations and Treatment Models in Three Categories of Landscape** | **101.67** | 53.06 |
| A.1.1 | Natural Landscapes | 20.66 | |
| A.1.2 | Eco- Task Force | 0 | |
| A.1.3 | Agriculture Landscapes | 37.58 | |
| A.1.4 | Urban Landscapes | 43.43 | |
| **A.2** | **Conservation Interventions** | **53.43** | 27.89 |
| A.2.1 | Soil and Moisture Conservation | 31.33 | |
| A.2.2 | Riverine and Riparian Wildlife Management | 18.5 | |
| A.2.3 | Wetland Management (Natural and Artificial) | 3.6 | |
| **A.3** | **Supporting Activities** | **16.56** | **8.65** |
| A.3.1 | Policy Level Interventions | 0.15 | |
| A.3.2 | Research Activities | 0.64 | |
| A.3.3 | Capacity Development | 5.09 | |

| | | | |
|---|---|---|---|
| A.3.4 | Awareness | 3.09 | |
| A.3.5 | Participatory Monitoring | 0.64 | |
| A.3.6 | Cost of PMUs of Two State Level Implementing Agencies | 6.51 | |
| A.3.7 | Evaluation | 0.40 | |
| A.3.8 | Contingency and Miscellaneous Activities | 0.03 | |
| **B.** | **Strengthening Knowledge Management and National Capacity for Forestry Interventions and Conservation of Riverscapes** | 0.00 | 0.00 |
| **C.** | **DPR – Phase II (Maintenance phase) Including Scaling Up and Replication of Successful Models of Forestry Interventions** | **4.02** | **2.10** |
| C.1 | Maintenance Cost of A.1 and A.2 (Cost of Phase II) | 8.17 | 4.26 |
| C.2 | Maintenance Cost of A.3 | 4.02 | |
| C.3 | Scaling Up and Replication of Successful Models of Forestry Interventions (5% of A.1 and A.2) | 7.75 | 4.04 |
| **D.** | **National Coordination for Forestry Interventions and Riverscape Conservation** | 0.00 | 0.00 |
| **Total Phase I (A+B+D)** | | **171.66** | |
| **Total Project Cost (Phase I+II) (A+B+C+D)** | | **191.60** | **100** |

**Table 2.28– Year-Wise Breakup of Extent Coverage of Proposed Forestry Interventions in Punjab***

| Year | Period | Plantation and Treatment Models | | | Conservation Intervention | | |
|---|---|---|---|---|---|---|---|
| | | Natural Landscape (ha) | Agriculture Landscape (ha) | Urban Landscape (ha) | Soil and Moisture Conservation Measures ($m^3$) | Riverine and Riparian Wildlife Management (ha) | Wetland Conservation (ha) |
| **C. Phase I (Implementation Phase)** | | | | | | | |
| **I** | Est. | 0 | 3352 | 140.8 | 38835 | 185 | 40 |
| **II** | Est. | 0 | 2856 | 94 | 47570 | 0 | 0 |
| | Maint | 0 | 3352 | 140.8 | 0 | 185 | 40 |
| **III** | Est. | 447 | 1995 | 77 | 39480 | 0 | 0 |
| | Maint. | 0 | 6208 | 234.8 | 0 | 185 | 40 |
| **IV** | Est. | 225 | 0 | 0 | 22290 | 0 | 0 |
| | Maint. | 447 | 8203 | 311.8 | 0 | 185 | 40 |
| **V** | Est. | 599 | 0 | 0 | 22130 | 0 | 0 |
| | Maint. | 672 | 4851 | 171 | 0 | 185 | 40 |
| **Total Phase I** | **Est.** | **1271** | **8203** | **311.8** | **170305** | **185** | **40** |
| | **Maint.** | **672** | **8203** | **311.8** | **0** | **185** | **40** |
| **B. Phase II (Maintenance Phase)** | | | | | | | |
| **VI** | Est. | 0 | 0 | 0 | 0 | 0 | 0 |
| | Maint. | 1271 | 1995 | 77 | 0 | 0 | 0 |
| **VII** | Est. | 0 | 0 | 0 | 0 | 0 | 0 |
| | Maint. | 824 | 0 | 0 | 0 | 0 | 0 |
| **VIII** | Est. | 0 | 0 | 0 | 0 | 0 | 0 |
| | Maint. | 599 | 0 | 0 | 0 | 0 | 0 |
| **IX** | Est. | 0 | 0 | 0 | 0 | 0 | 0 |
| | Maint. | 0 | 0 | 0 | 0 | 0 | 0 |
| **X** | Est. | 0 | 0 | 0 | 0 | 0 | 0 |
| | Maint. | 0 | 0 | 0 | 0 | 0 | 0 |
| **Total** | **Est.** | **0** | **0** | **0** | **0** | **0** | **0** |

| Year | Period | Plantation and Treatment Models | | | Conservation Intervention | | |
|---|---|---|---|---|---|---|---|
| | | Natural Landscape (ha) | Agriculture Landscape (ha) | Urban Landscape (ha) | Soil and Moisture Conservation Measures ($m^3$) | Riverine and Riparian Wildlife Management (ha) | Wetland Conservation (ha) |
| **Phase II** | **Maint.** | **1271** | **1995** | **77** | **0** | **0** | **0** |
| **Grand Total Phase I and Phase II** | **Est.** | **1271** | **8203** | **311.8** | **170305** | **185** | **40** |
| | **Maint.** | **1271** | **8203** | **311.8** | **0** | **185** | **40** |

* The consent for availability of land for proposed Forestry Interventions have been obtained from PCCF (HoFF), Punjab Forest Department (Annexure at page No. 282).

**Table 2.29 – Year-Wise Breakup of Cost (Rs. in Lakhs) for Proposed Forestry Interventions in Punjab**

| Year | Period | Plantation and Treatment Models | | | Conservation Intervention | | |
|---|---|---|---|---|---|---|---|
| | | Natural Landscape | Agriculture Landscape | Urban Landscape | Soil and Moisture Conservation Measures | Riverine and Riparian Wildlife Management | Wetland Conservation |
| **D. Phase I (Implementation Phase)** | | | | | | | |
| **I** | Est. | 113.88 | 610.56 | 2206.00 | 457.305 | 592.00 | 112.00 |
| **II** | Est. | 186.05 | 497.28 | 244.40 | 801.60 | 0 | 0 |
| | Maint. | 0 | 326.67 | 661.8 | 0 | 518.00 | 100.00 |
| **III** | Est. | 529.84 | 333.60 | 200.20 | 1185.54 | 0 | 0 |
| | Maint. | 0 | 624.78 | 514.52 | 0 | 351.50 | 64.00 |
| **IV** | Est. | 309.91 | 0 | 0 | 290.03 | 0 | 0 |
| | Maint. | 239.76 | 855.13 | 439.84 | 0 | 222.00 | 48.00 |
| **V** | Est. | 495.10 | 0 | 0 | 399.015 | 0 | 0 |
| | **Maint.** | **191.08** | **510.00** | **76.70** | **0** | **166.50** | **36.00** |
| **Total Phase I** | **Est.** | **1634.78** | **1441.44** | **2650.60** | **3133.49** | **592.00** | **112.00** |
| | **Maint.** | **430.84** | **2317.00** | **1692.86** | **0** | **1258.00** | **248.00** |
| **B. Phase II (Maintenance Phase)** | | | | | | | |
| **VI** | Est. | 0 | 0 | 0 | 0 | 0 | 0 |
| | Maint. | 381.06 | 210.52 | 30.03 | 0 | 0 | 0 |
| **VII** | Est. | 0 | 0 | 0 | 0 | 0 | 0 |
| | Maint. | 157.70 | 0 | 0 | 0 | 0 | 0 |
| **VIII** | Est. | 0 | 0 | 0 | 0 | 0 | 0 |
| | Maint. | 37.26 | 0 | 0 | 0 | 0 | 0 |
| **IX** | Est. | 0 | 0 | 0 | 0 | 0 | 0 |
| | Maint. | 0 | 0 | 0 | 0 | 0 | 0 |
| **X** | Est. | 0 | 0 | 0 | 0 | 0 | 0 |
| | Maint. | 0 | 0 | 0 | 0 | 0 | 0 |

| Year | Period | Plantation and Treatment Models | | | Conservation Intervention | | |
|---|---|---|---|---|---|---|---|
| | | Natural Landscape | Agriculture Landscape | Urban Landscape | Soil and Moisture Conservation Measures | Riverine and Riparian Wildlife Management | Wetland Conservation |
| Total Phase II | Est. | 0 | 0 | 0 | 0 | 0 | 0 |
| | Maint. | 576.01 | 210.52 | 30.03 | 0 | 0 | 0 |
| Grand Total Phase I and Phase II | Est. | 1634.78 | 1441.44 | 2650.60 | 3133.49 | 592.00 | 112.00 |
| | Maint. | 1006.85 | 2527.52 | 1722.89 | 0 | 1258.00 | 248.00 |
| Grand Total | | 2641.63 | 3968.96 | 4373.49 | 3133.49 | 1850.00 | 360.00 |

## Table 2.30 – Division Wise Proposed Extent of Plantations in Natural Landscapes in Punjab

| S.N. | Division | Year | | | | | | | | | Year | | | | Grand Total | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Phase I (Extent in ha) | | | | | | | Phase I Total(Extent in ha) | | Phase II (Extent in ha) | | | Total (ha) | (Ha) | (Ha) |
| | | I | II | III | IV | | V | | | | VI | VII | VIII | | | |
| | | Establishment (Nursery raising for 3rd year creation)* | Establishment (Nursery raising for 4th year Creation)* | Establishment(i/c creation for 1st year plantation) | Establishment(i/c creation for 2nd year plantation) | Maintenance (Maint of plantation 3rd year maintenance | Establishment(i/c creation for 3rd year plantation | Maintenance (Maint of plantation 3rd year and 4th year maint) | Establishment | Maintenance | Maintenance | Maintenance | Maintenance | Maintenance | Establishment | Maintenance |
| 1. | Jalandhar | 92 | 0 | 92 | 0 | 92 | 20 | 92 | 112 | 92 | 112 | 20 | 20 | 112 | 112 | 112 |
| 2. | Ludhiana | 50 | 20 | 50 | 20 | 50 | 0 | 70 | 70 | 70 | 70 | 20 | 0 | 70 | 70 | 70 |
| 3. | Nawanshahr | 265 | 205 | 265 | 205 | 265 | 559 | 470 | 1029 | 470 | 1029 | 764 | 559 | 1029 | 1029 | 1029 |
| 4. | Rupnagar | 40 | 0 | 40 | 0 | 40 | 20 | 40 | 60 | 40 | 60 | 20 | 20 | 60 | 60 | 60 |
| **Total** | | **447** | **225** | **447** | **225** | **447** | **599** | **672** | **1271** | **672** | **1271** | **824** | **599** | **1271** | **1271** | **1271** |

## Table 2.31 – Division Wise Projected Cost of Plantations in Natural Landscapes in Punjab

| S. N. | Division | Year | | | | | | | | | | | | | Grand Total | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Phase I (Rs.in Lakhs) | | | | | | | | | Phase II (Rs.in Lakhs) | | | | | | |
| | | I | II | III | IV | | V | | Total | | VI | VII | VIII | Total | Rs. In lakhs | | |
| | | Establishment (Nursery raising for 3rd year creation) | Establishment (Advance work for 3rd year plantation and Nursery raising for 4th year Creation) | Establishment (i/c creation cost for 3rd year, Advance cost of 4th year and nursery cost of 5th year plantation) | Establishment (i/c creation cost for 4th year, Advance cost of 5th year) | Maintenance (Maint cost of plantation 3rd year maint, maint cost of nursery) | Establishment (i/c creation cost for 5th year | Maintenance (Maint. Cost of plantation 3rd year and 4th year maint, maint cost of nursery) | Establishment | Maintenance | Maintenance | Maintenance | Maintenance | Maintenance | Establishment | Maintenance | Total Cost |
| 1 | Jalandhar | 22.97 | 33.18 | 130.70 | 5.02 | 74.86 | 22.08 | 29.21 | 213.94 | 104.07 | 16.54 | 4.27 | 1.48 | 22.29 | 213.94 | 126.36 | 340.30 |
| 2 | Ludhiana | 9.19 | 14.29 | 35.99 | 22.08 | 18.63 | 0 | 20.07 | 81.55 | 38.71 | 8.39 | 1.48 | 0 | 9.87 | 81.55 | 48.58 | 130.13 |
| 3 | Nawanshahr | 70.94 | 125.33 | 329.97 | 277.79 | 124.99 | 450.94 | 132.20 | 1254.96 | 257.18 | 343.47 | 147.68 | 34.31 | 525.45 | 1254.96 | 782.63 | 2037.59 |
| 4 | Rupnagar | 10.79 | 13.25 | 33.19 | 5.02 | 21.28 | 22.08 | 9.60 | 84.33 | 30.88 | 12.65 | 4.27 | 1.48 | 18.40 | 84.33 | 49.28 | 133.60 |
| **Total** | | **113.88** | **186.05** | **529.84** | **309.91** | **239.76** | **495.10** | **191.08** | **1634.78** | **430.84** | **381.06** | **157.70** | **37.26** | **576.01** | **1634.78** | **1006.85** | **2641.63** |

**Table 2.32 – Division Wise Proposed Extent of Plantations in Agriculture Landscapes in Punjab**

| Sr. No | Division | Year | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Phase I (Area in ha) | | | | | | | | | Phase II (Area in ha) | | Total Area ha |
| | | I | II | | III | | IV | V | Total | | VI | Total | |
| | | Estb | Estb | Maint | Estb | Maint | Maint | Maint | Estb | Maint | Maint | Maint | |
| 1 | Amritsar | 440 | 420 | 440 | 285 | 860 | 1145 | 705 | 1145 | 1145 | 285 | 285 | 1145 |
| 2 | Ferozepur | 416 | 420 | 416 | 300 | 836 | 1136 | 720 | 1136 | 1136 | 300 | 300 | 1136 |
| 3 | Jalandhar | 416 | 420 | 416 | 300 | 836 | 1136 | 720 | 1136 | 1136 | 300 | 300 | 1136 |
| 4 | Ludhiana | 520 | 399 | 520 | 325 | 919 | 1244 | 724 | 1244 | 1244 | 325 | 325 | 1244 |
| 5 | Nawanshahr | 520 | 399 | 520 | 250 | 919 | 1169 | 649 | 1169 | 1169 | 250 | 250 | 1169 |
| 6 | Rupnagar | 520 | 399 | 520 | 250 | 919 | 1169 | 649 | 1169 | 1169 | 250 | 250 | 1169 |
| 7 | SAS Nagar ( Mohali) | 520 | 399 | 520 | 285 | 919 | 1204 | 684 | 1204 | 1204 | 285 | 285 | 1204 |
| **Total** | | **3352** | **2856** | **3352** | **1995** | **6208** | **8203** | **4851** | **8203** | **8203** | **1995** | **1995** | **8203** |

**Table 2.33 – Division Wise Projected Cost of Plantations in Agriculture Landscapes in Punjab**

| S. No | Division | Year | | | | | | | | | | | Total Cost in lakh Phase I and II |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Phase I (Rs. in Lakhs) | | | | | | | | | Phase II (Rs. in Lakhs) | | |
| | | I | II | | III | | IV | V | Total | | VI | Total | |
| | | Estb | Estb | Maint | Estb | Maint | Maint | Maint | Estb | Maint | Maint | Maint | |
| 1 | Amritsar | 86.4 | 65.1 | 46.23 | 49.05 | 85.44 | 118.93 | 70.12 | 200.55 | 320.72 | 30.91 | 30.91 | 552.18 |
| 2 | Ferozepur | 74.88 | 78.75 | 40.06 | 46.5 | 86.15 | 118.2 | 76.97 | 200.13 | 321.38 | 29.45 | 29.45 | 550.96 |
| 3 | Jalandhar | 74.88 | 78.75 | 40.06 | 46.5 | 86.15 | 118.2 | 76.97 | 200.13 | 321.38 | 29.45 | 29.45 | 550.96 |
| 4 | Ludhiana | 93.6 | 68.67 | 50.08 | 58.5 | 91.76 | 130.63 | 77.67 | 220.77 | 350.14 | 36.8 | 36.8 | 607.71 |
| 5 | Nawanshahr | 93.6 | 68.67 | 50.08 | 42 | 91.76 | 121.8 | 68.05 | 204.27 | 331.69 | 26.5 | 26.5 | 562.46 |
| 6 | Rupnagar | 93.6 | 68.67 | 50.08 | 42 | 91.76 | 121.8 | 68.05 | 204.27 | 331.69 | 26.5 | 26.5 | 562.46 |
| 7 | SAS Nagar ( Mohali) | 94.00 | 68.67 | 50.08 | 49.05 | 91.76 | 125.57 | 72.17 | 211.32 | 340.00 | 30.91 | 30.91 | 582.23 |
| | Total | 610.96 | 497.28 | 326.67 | 333.6 | 624.78 | 855.13 | 510 | 1441.44 | 2317 | 210.52 | 210.52 | 3968.96 |

**Table 2.34 – Division Wise Proposed Extent of Plantations in Urban Landscapes in Punjab**

| Sr. No | Division | Phase I: Year Wise Area (ha) | | | | | | | Phase I Total Area (ha) | | Phase II Area (ha) | Phase II Total Area (ha) | Grand Total Area (ha) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | I | II | | III | | IV | V | | | VI Year | | |
| | | Estb | Estb | Maint | Estb | Maint | Maint | Maint | Estb | Maint | Maint | Maint | Estb. |
| 1 | Amritsar | 11.5 | 10 | 11.5 | 10 | 21.5 | 31.5 | 20 | 31.5 | 31.5 | 10 | 10 | 31.5 |
| 2 | Ferozepur | 22.1 | 20 | 22.1 | 15 | 42.1 | 57.1 | 35 | 57.1 | 57.1 | 15 | 15 | 57.1 |
| 3 | Jalandhar | 19 | 15 | 19 | 10 | 34 | 44 | 25 | 44 | 44 | 10 | 10 | 44 |
| 4 | Ludhiana | 28.1 | 15 | 28.1 | 12 | 43.1 | 55.1 | 27 | 55.1 | 55.1 | 12 | 12 | 55.1 |
| 5 | Nawanshahr | 18 | 12 | 18 | 10 | 30 | 40 | 22 | 40 | 40 | 10 | 10 | 40 |
| 6 | Rupnagar | 28.1 | 12 | 28.1 | 10 | 40.1 | 50.1 | 22 | 50.1 | 50.1 | 10 | 10 | 50.1 |
| 7 | SAS Nagar ( Mohali) | 14 | 10 | 14 | 10 | 24 | 34 | 20 | 34 | 34 | 10 | 10 | 34 |
| **Total** | | **140.8** | **94** | **140.8** | **77** | **234.8** | **311.8** | **171** | **311.8** | **311.8** | **77** | **77** | **311.8** |

**Table 2.35 – Division Wise Projected Cost of Plantations in Urban Landscapes in Punjab**

| Sr. No. | Division | Phase I: Year Wise Cost (Rs.in Lakhs) | | | | | | | Total Phase I (Rs.in Lakhs) | | Phase II (Rs.in Lakhs) | Total Phase II (Rs.in Lakhs | Total of Phase I and Phase II (Rs.in Lakhs) | | Grand Total (Rs.in Lakhs) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | I | II | | III | | IV | V | | | VI | | | | |
| | | Estb | Estb | Maint | Estb | Maint | Maint | Maint | Estb | Maint | Maint | Maint | Estb. | Maint | |
| 1 | Amritsar | 116.00 | 26.00 | 34.80 | 26.00 | 31.00 | 30.40 | 9.10 | 168.00 | 105.30 | 3.90 | 3.90 | 168.00 | 109.20 | 277.20 |
| 2 | Ferozepur | 232.00 | 52.00 | 69.6 | 39.00 | 62.00 | 56.90 | 15.60 | 323.00 | 204.10 | 5.85 | 5.85 | 323.00 | 209.95 | 532.95 |
| 3 | Jalandhar | 369.00 | 39.00 | 110.70 | 26.00 | 85.50 | 70.95 | 11.05 | 434.00 | 278.20 | 3.90 | 3.90 | 434.00 | 282.10 | 716.10 |
| 4 | Ludhiana | 654.00 | 39.00 | 196.20 | 31.20 | 142.50 | 115.26 | 12.09 | 724.20 | 466.05 | 4.68 | 4.68 | 724.20 | 470.73 | 1194.93 |
| 5 | Nawanshahr | 219.00 | 31.20 | 65.70 | 26.00 | 53.16 | 46.89 | 9.88 | 276.20 | 175.63 | 3.90 | 3.90 | 276.20 | 179.53 | 455.73 |
| 6 | Rupnagar | 260.00 | 31.20 | 78.00 | 26.00 | 61.36 | 53.04 | 9.88 | 317.20 | 202.28 | 3.90 | 3.90 | 317.20 | 206.18 | 523.38 |
| 7 | SAS Nagar ( Mohali) | 356.00 | 26.00 | 106.80 | 26.00 | 79.00 | 66.40 | 9.10 | 408.00 | 261.30 | 3.90 | 3.90 | 408.00 | 265.20 | 673.20 |
| **Total** | | **2206** | **244.4** | **661.8** | **200.2** | **514.52** | **439.84** | **76.7** | **2650.6** | **1692.86** | **30.03** | **30.03** | **2650.6** | **1722.89** | **4373.49** |

**Table 2.36 – Division Wise Proposed Extent for Soil and Moisture Conservation (Area in $m^3$) for Punjab**

| Sr. No | Division | Phase I: Year Wise Area ($m^3$) | | | | | Grand Total Extent ($m^3$) |
|---|---|---|---|---|---|---|---|
| | | I | II | III | IV | V | |
| | | Estb | Estb | Estb | Estb | Estb | Estb |
| 1 | Ferozepur | 2200 | 2200 | 2000 | 700 | 1000 | 8100 |
| 2 | Jalandhar | 550 | 1250 | 1000 | 3020 | 440 | 6260 |
| 3 | Ludhiana | 8200 | 7800 | 5800 | 3800 | 3550 | 29150 |
| 4 | Nawanshahr | 22950 | 30000 | 21500 | 8150 | 12450 | 95050 |
| 5 | Rupnagar | 885 | 2420 | 4780 | 3870 | 2690 | 14645 |
| 6 | SAS Nagar | 4050 | 3900 | 4400 | 2750 | 2000 | 17100 |
| **Total** | | **38835** | **47570** | **39480** | **22290** | **22130** | **170305** |

**Table 2.37 – Division Wise Projected Cost for Soil and Moisture Conservation (Rs. in Lakhs) in Punjab**

| Sr. No | Division | Phase I: Year Wise Cost (Rs. in Lakhs) | | | | | Phase I Total Cost (Rs. in Lakhs) |
|---|---|---|---|---|---|---|---|
| | | I | II | III | IV | V | |
| | | Estb | Estb | Estb | Estb | Estb | Estb |
| 1 | Ferozepur | 6.60 | 99.00 | 36.00 | 2.45 | 3.00 | 147.05 |
| 2 | Jalandhar | 1.65 | 22.50 | 45.00 | 10.57 | 26.40 | 106.12 |
| 3 | Ludhiana | 81.60 | 174.00 | 187.50 | 39.00 | 75.43 | 557.52 |
| 4 | Nawanshahr | 257.25 | 413.40 | 764.80 | 84.38 | 200.78 | 1720.60 |
| 5 | Rupnagar | 2.66 | 57.00 | 61.44 | 113.56 | 37.62 | 272.27 |
| 6 | SAS Nagar | 107.55 | 35.70 | 90.80 | 40.08 | 55.80 | 329.93 |
| **Total** | | **457.305** | **801.60** | **1185.54** | **290.03** | **399.015** | **3133.49** |

**Table 2.38 – Division Wise Proposed Extent (in ha) for Riverine and Riparian Wetland Management and Wildlife Conservation in Punjab**

| Sr. No | Division | Phase I: Year Wise Extent of Area (ha) | | | | | Phase I Total | | Grand Total (ha) |
|---|---|---|---|---|---|---|---|---|---|
| | | I | II | III | IV | V | | | |
| | | Estb | Maint | Maint | Maint | Maint | Estb | Maint | |
| 1 | Wild Life Ferozepur | 25 | 25 | 25 | 25 | 25 | 25 | 25 | 25 |
| 2 | Wildlife Division Roopnagar | 60 | 60 | 60 | 60 | 60 | 60 | 60 | 60 |
| 3 | Wildlife Phillaur | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 |
| **Total** | | **185** | **185** | **185** | **185** | **185** | **185** | **185** | **185** |

**Table 2.39 – Division Wise Projected Cost (Rs. in Lakhs) for Riverine and Riparian Wetland Management and Wildlife Conservation in Punjab**

| Sr. No. | Division | Phase I: Year Wise Cost (Rs. in Lakhs) | | | | | | | Total Cost Phase I and II (Rs in Lakh) |
|---|---|---|---|---|---|---|---|---|---|
| | | I | II | III | IV | V | Total | | |
| | | Estb | Maint | Maint | Maint | Maint | Estb | Maint | |
| 1 | Wild Life Ferozepur | 80.00 | 70.00 | 47.50 | 30.00 | 22.50 | 80.00 | 170.00 | 250.00 |
| 2 | Wildlife Division Roopnagar | 192.00 | 168.00 | 114.00 | 72.00 | 54.00 | 192.00 | 408.00 | 600.00 |
| 3 | Wildlife Phillaur | 320.00 | 280.00 | 190.00 | 120.00 | 90.00 | 320.00 | 680.00 | 1000.00 |
| **Total** | | **592.00** | **518.00** | **351.50** | **222.00** | **166.50** | **592.00** | **1258.00** | **1850.00** |

**Table 2.40 – Division Wise Proposed Extent (in ha) for Wetland Management Conservation in Punjab**

| Sr. No | Division | Phase I: Year Wise Extent of Area (ha) | | | | | Phase I Total | | Grand Total (ha) |
|---|---|---|---|---|---|---|---|---|---|
| | | I | II | III | IV | V | | | |
| | | Estb | Maint | Maint | Maint | Maint | Estb | Maint | |
| 1 | Wildlife Division Roopnagar | 40 | 40 | 40 | 40 | 40 | 40 | 40 | 40 |
| Total | | 40 | 40 | 40 | 40 | 40 | 40 | 40 | 40 |

**Table 2.41 – Division Wise Projected Cost (Rs. in Lakhs) for Wetland Wildlife Conservation in Punjab**

| Sr. No. | Division | Phase I: Year Wise Cost (Rs. in Lakhs) | | | | | | | Total Cost (Rs in Lakh) |
|---|---|---|---|---|---|---|---|---|---|
| | | I | II | III | IV | V | Total | | |
| | | Estb | Maint | Maint | Maint | Maint | Estb | Maint | |
| 1 | Wildlife Division Roopnagar | 112.00 | 100.00 | 64.00 | 48.00 | 36.00 | 112.00 | 248.00 | 360.00 |
| Total | | 112.00 | 100.00 | 64.00 | 48.00 | 36.00 | 112.00 | 248.00 | 360.00 |

**Table 2.42 – Model/ Activity Wise Area and Cost for Forestry Intervention in Punjab**

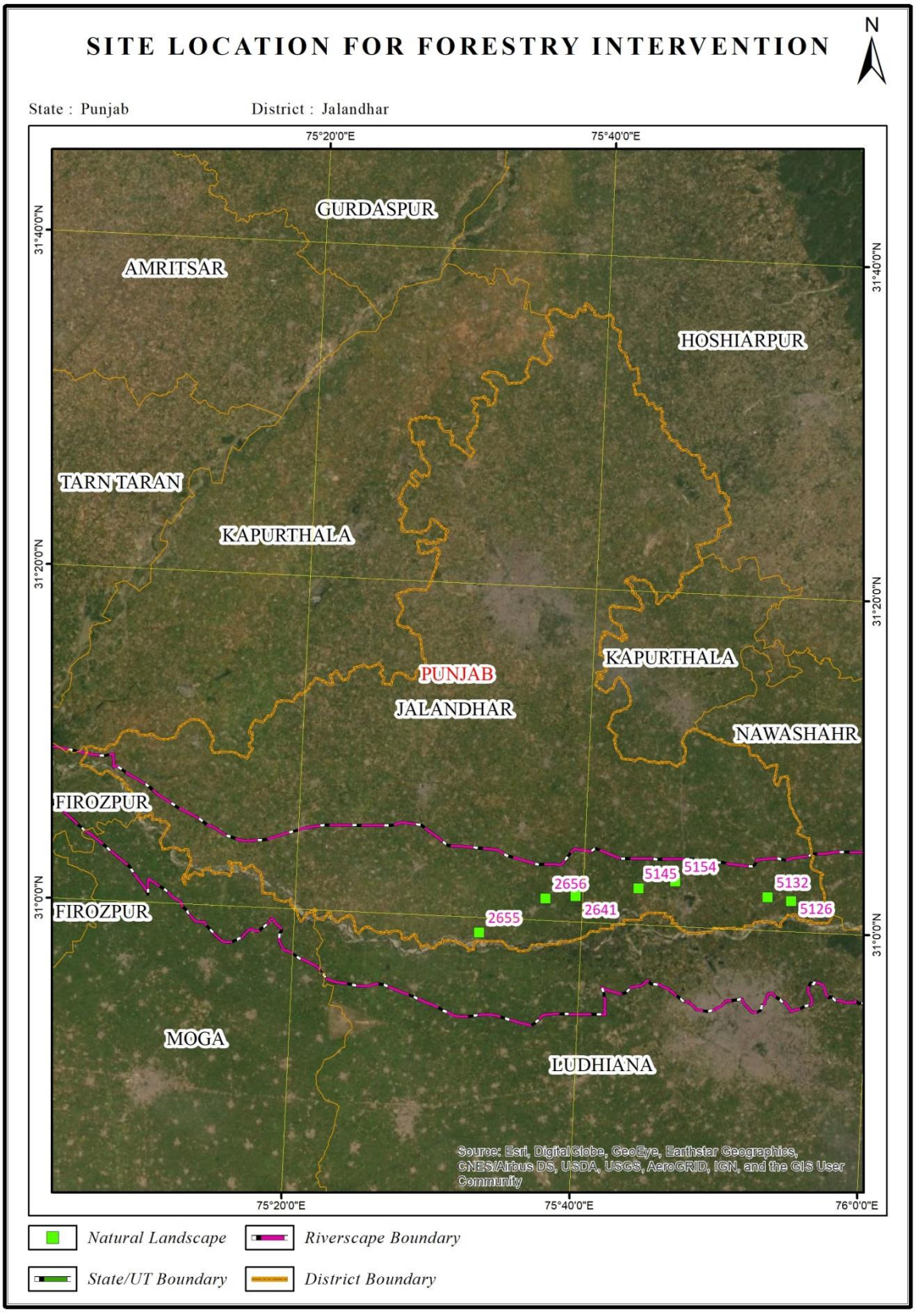
| State | Landscape | Model/ Activity | Area (ha) | Cost (Rs. in Lakhs) |
|---|---|---|---|---|
| **Punjab** | **Natural** | SL/PB/NL/01 - Shivalik Hills Forest Enrichment | 694 | 1513.27 |
| | | SL/PB/NL/02 - Degraded Model with staggered trench and Pits | 135 | 264.41 |
| | | SL/PB/NL/03 – Control/ Removal of Invasive Species and | 145 | 94.61 |
| | | SL/PB/NL/04 - Restoration of Degraded Forests | 260 | 602.97 |
| | | SL/PB/NL/05 Road Side Plantation | 37 | 166.37 |
| | **Agriculture** | SL/PB/AL/01 - Boundary Plantation Model | 6400 | 1614.58 |
| | | SL/PB/AL/02 - Block Plantation Model | 1803 | 2353.96 |
| | **Urban** | SL/PB/UL/01 - Bioremediation and Bio filtration | 20 | 495.00 |
| | | SL/PB/UL/02 - Riverfront Development | 0.3 | 74.25 |
| | | SL/PB/UL/03 - Institution Plantation | 281 | 1205.49 |
| | | SL/PB/UL/04- Eco-Park Development | 10.5 | 2598.75 |
| | **Conservation Interventions (Area in $m^3$)** | SL/PB/CI/01- Brushwood Interventions | 57785 | 173.35 |
| | | SL/PB/CI/02- Dry Stone Activities | 50280 | 905.04 |
| | | SL/PB/CI/03- Crate Wire Activities | 37110 | 1669.95 |
| | | SL/PB/CI/04- Water Ponds | 19870 | 69.57 |
| | | SL/PB/CI/05- Silt Detention Dam Type Activities | 5260 | 315.60 |
| | **Other Interventions** | SL/PB/CI/06 - Riverine and Riparian Management | 185 | 1850.00 |
| | | SL/PB/CI/07 - Wetland Management | 40 | 360.00 |

**Table 2.43– Year-Wise Breakup of Projected Cost on Supporting Activities in Punjab**

| Sr. No. | Activity | Year (Rs. in lakh) | | | | | | | | | | | Total Phase II | (Cost Rs. in lakh) Phase I+II |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Phase I | | | | | Total Phase I | Phase II | | | | | | |
| | | I | II | III | IV | V | | I | II | III | IV | V | 0.00 | **0.00** |
| **1** | **Policy Level Interventions** | 7.86 | 3.93 | 1.97 | 0.98 | 0.00 | **14.74** | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | **14.74** |
| **2** | **Research Activities** | 15.72 | 14.15 | 12.73 | 11.46 | 10.31 | **64.38** | 9.28 | 8.35 | 7.52 | 6.77 | 6.09 | 38.02 | **102.40** |
| **3** | **Capacity Development** | 97.00 | 101.85 | 126.94 | 112.29 | 70.67 | **508.75** | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | **508.75** |
| **4** | **Awareness** | 56.00 | 58.80 | 61.74 | 64.83 | 68.07 | **309.44** | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | **309.44** |
| **5** | **Participatory Monitoring** | 15.72 | 14.15 | 12.73 | 11.46 | 10.31 | **64.38** | 9.28 | 8.35 | 7.52 | 6.77 | 6.09 | 38.02 | **102.40** |
| **6** | **Cost of PMUs of State Level Implementing Agencies** | 157.21 | 116.29 | 121.94 | 127.88 | 134.11 | **657.42** | 41.42 | 37.06 | 34.65 | 32.39 | 30.28 | 175.80 | **833.23** |
| **7** | **Evaluation** | 0.00 | 0.00 | 39.54 | 0.00 | 0.00 | **39.54** | 65.74 | 0.00 | 0.00 | 0.00 | 83.32 | 149.06 | **188.61** |
| **8** | **Contingency and Miscellaneous Activities** | 0.79 | 0.58 | 0.61 | 0.64 | 0.67 | **3.29** | 0.21 | 0.19 | 0.17 | 0.16 | 0.15 | 0.88 | **4.17** |
| **Grand Total** | | **350.30** | **309.75** | **378.21** | **329.54** | **294.15** | **1661.94** | **125.93** | **53.95** | **49.86** | **46.09** | **125.94** | **401.78** | **2063.72** |

**Table 2.44-Year-Wise Projected Cost of State Project Management Unit Punjab**

| Sr.No. | Activities | Year (Cost Rs. in lakh) | | | | | | | | | | | Total Phase II | Grand Total (Cost Rs. in lakh) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Phase I | | | | | Total Phase I | Phase II | | | | | | |
| | | I | II | III | IV | V | | VI | VII | VIII | IX | X | | |
| 1 | Project Staff - Salary and Wages ( PED/PEO+SPA+JPA+PA 2+PM+OA2+A2+DEO1 for each Division) and 50% staff in Phase II | 95.28 | 100.044 | 105.05 | 110.30 | 115.81 | 526.48 | 36.48 | 34.47 | 32.58 | 30.79 | 29.09 | 163.42 | 689.90 |
| 2 | Office Expenses (including executing Divisions) | 9.528 | 1.00 | 1.05 | 1.10 | 1.16 | 13.84 | 0.36 | 0.34 | 0.33 | 0.31 | 0.29 | 1.63 | 15.47 |
| 3 | POL (including executing Divisions) | 9.528 | 1.00 | 1.05 | 1.10 | 1.16 | 13.84 | 0.36 | 0.31 | 0.23 | 0.15 | 0.09 | 1.14 | 14.98 |
| 4 | Travel Expenses (including executing Divisions) | 9.53 | 10.00 | 10.50 | 11.03 | 11.58 | 52.65 | 3.65 | 1.38 | 0.98 | 0.62 | 0.29 | 6.91 | 59.56 |
| 5 | Equipment – Office and Field | 4.764 | 0.00 | 0.00 | 0.00 | 0.00 | 4.76 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 4.76 |
| 6 | Purchase of Equipment - Computer, RS and GIS and IT and maintenance | 9.528 | 0.00 | 0.00 | 0.00 | 0.00 | 9.53 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.0 | 9.53 |
| 7 | Furniture and Fixtures | 9.528 | 0.00 | 0.00 | 0.00 | 0.00 | 9.53 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 9.53 |
| 8 | Contingency and Miscellaneous | 9.53 | 1.00 | 1.05 | 1.10 | 1.16 | 13.84 | 0.18 | 0.17 | 0.16 | 0.15 | 0.15 | 0.82 | 14.66 |
| **Grand Total** | | **157.21** | **113.05** | **118.70** | **124.64** | **130.87** | **644.47** | **41.04** | **36.68** | **34.27** | **32.02** | **29.91** | **173.92** | **818.39** |


SITE LOCATION FOR FORESTRY INTERVENTION
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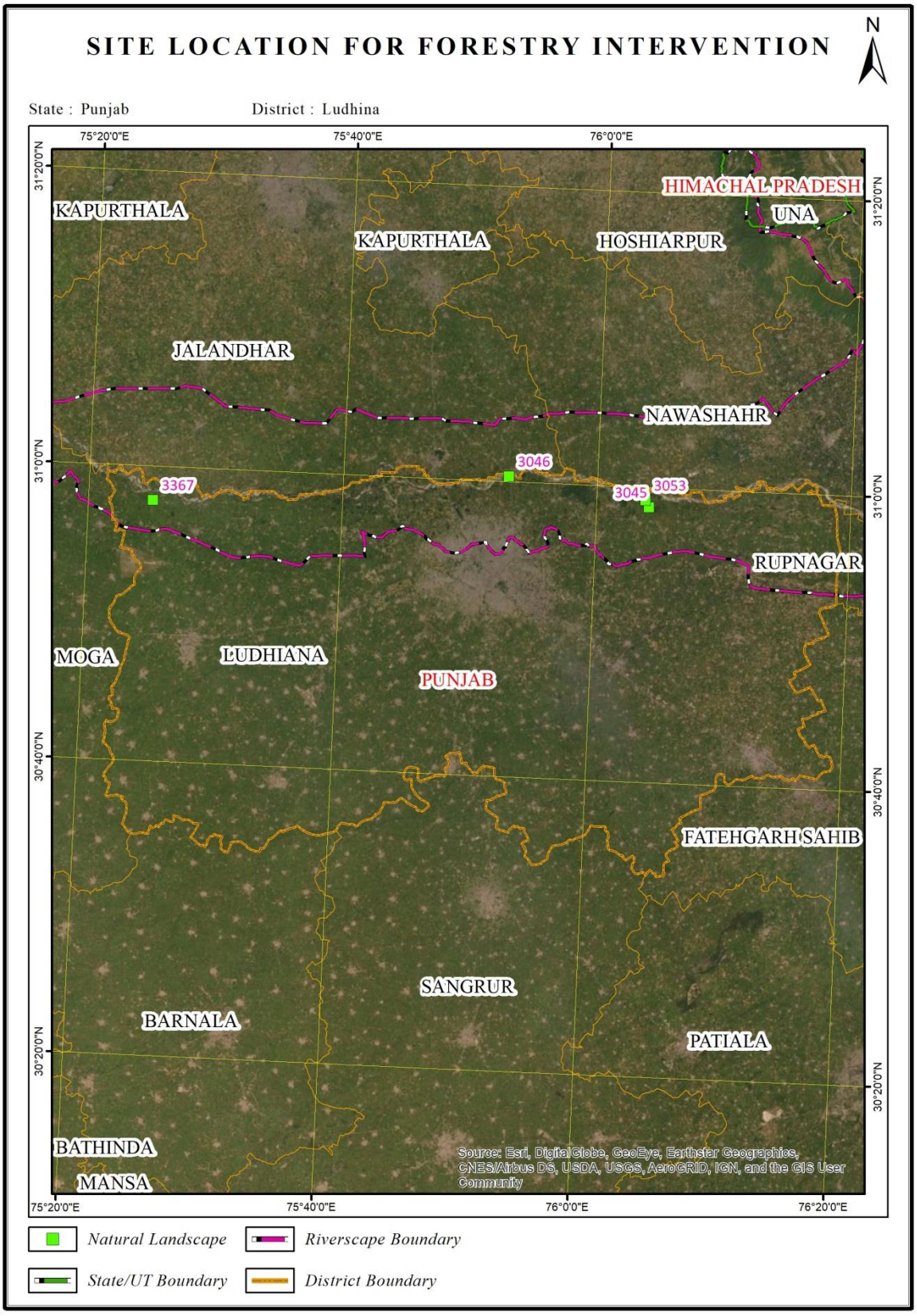
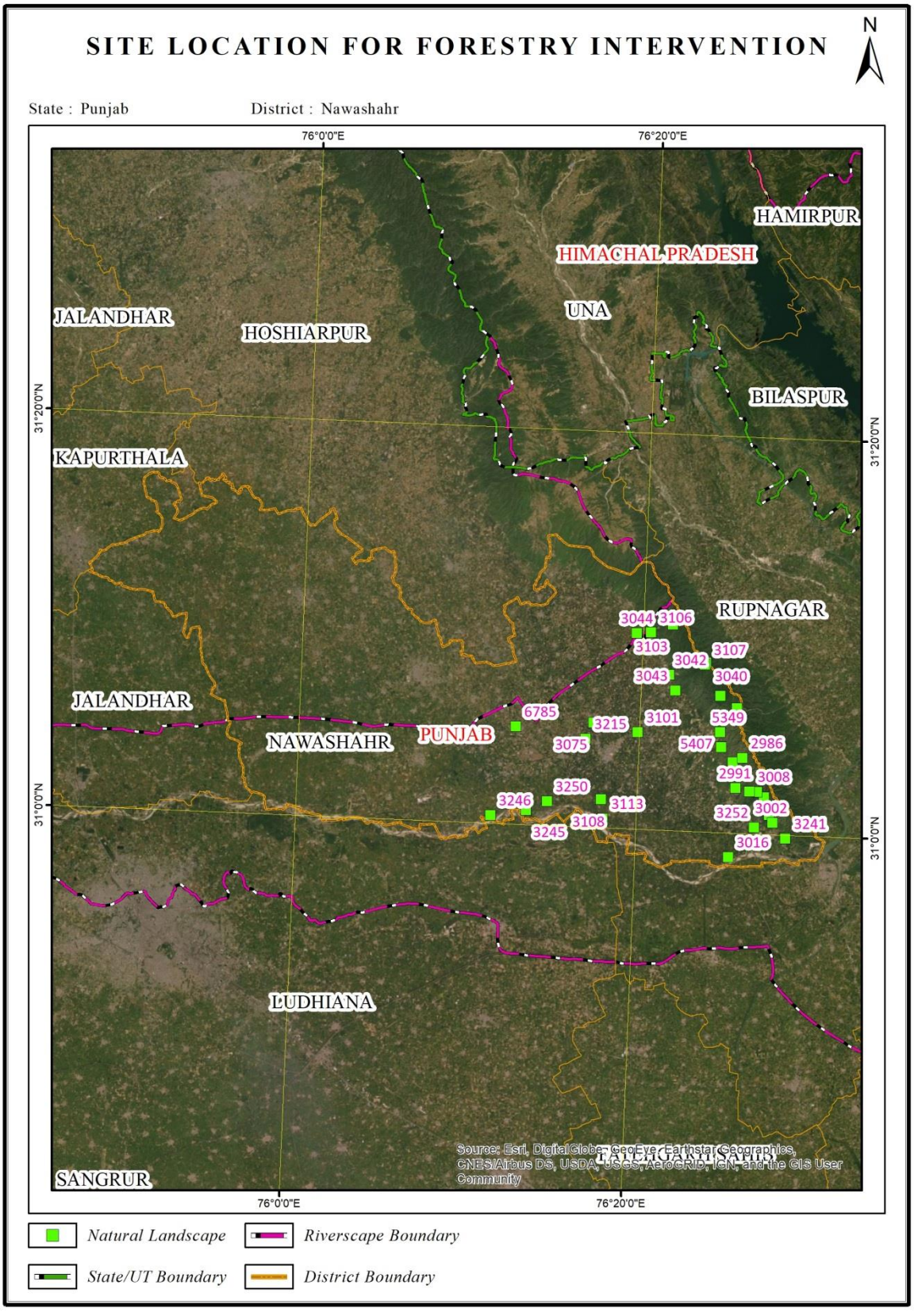
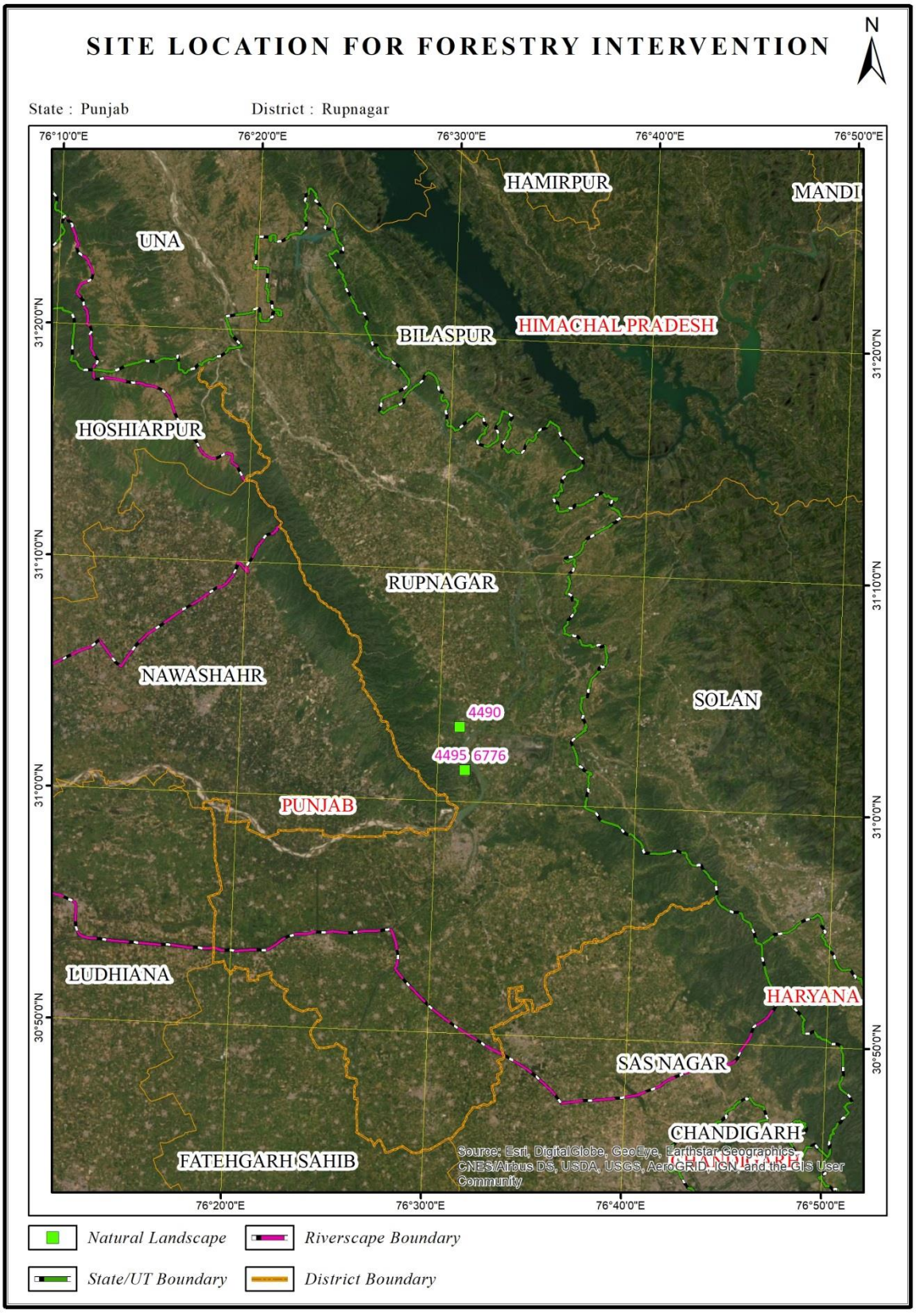
District : Jalandhar
75°20'0"E
75°40'0"E
31°40'0"N
31°20'0"N
31°0'0"N
GURDASPUR
AMRITSAR
HOSHIARPUR
TARN TARAN
KAPURTHALA
PUNJAB
JALANDHAR
KAPURTHALA
NAWASHAHR
FIROZPUR
FIROZPUR
2656
5145
5154
5132
2641
5126
2655
MOGA
LUDHIANA
Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community
76°0'0"E
Natural Landscape
Riverscape Boundary
State/UT Boundary
District Boundary


SITE LOCATION FOR FORESTRY INTERVENTION
N
State : Punjab
District : Ludhina
75°20'0"E
75°40'0"E
76°0'0"E
76°20'0"E
31°20'0"N
31°0'0"N
30°40'0"N
30°20'0"N
HIMACHAL PRADESH
UNA
KAPURTHALA
KAPURTHALA
HOSHIARPUR
JALANDHAR
NAWASHAHR
3046
3367
3045
3053
RUPNAGAR
MOGA
LUDHIANA
PUNJAB
FATEHGARH SAHIB
SANGRUR
BARNALA
PATIALA
BATHINDA
MANSA
Source: Esri, Digital Globe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community
Natural Landscape
Riverscape Boundary
State/UT Boundary
District Boundary


SITE LOCATION FOR FORESTRY INTERVENTION
N
State : Punjab
District : Nawashahr
76°0'0"E
76°20'0"E
31°20'0"N
31°0'0"N
HAMIRPUR
HIMACHAL PRADESH
UNA
JALANDHAR
HOSHIARPUR
BILASPUR
KAPURTHALA
RUPNAGAR
3044
3106
3103
3107
3042
3043
3040
JALANDHAR
6785
3215
3101
5349
NAWASHAHR
PUNJAB
3075
5407
2986
2991
3008
3250
3246
3113
3252
3002
3108
3241
3245
3016
LUDHIANA
SANGRUR
Source: Esri, Digital Globe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community
Natural Landscape
Riverscape Boundary
State/UT Boundary
District Boundary


SITE LOCATION FOR FORESTRY INTERVENTION
N
State : Punjab
District : Rupnagar
76°10'0"E
76°20'0"E
76°30'0"E
76°40'0"E
76°50'0"E
31°20'0"N
31°10'0"N
31°0'0"N
30°50'0"N
HAMIRPUR
MANDI
UNA
BILASPUR
HIMACHAL PRADESH
HOSHIARPUR
RUPNAGAR
NAWASHAHR
SOLAN
4490
4495
6776
PUNJAB
LUDHIANA
HARYANA
SAS NAGAR
CHANDIGARH
FATEHGARH SAHIB
Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community
Natural Landscape
Riverscape Boundary
State/UT Boundary
District Boundary

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## Site Wise Extent of proposal area in Natural Landscape in Himachal Pradesh

| Division | Sitenames | Year | | | | | | | | | | | | | | Grand Total | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | Phase I | | Phase II | | | | | | |
| | | (Extent in ha) | | | | | | | Total(Extent in ha) | | (Extent in ha) | | | | Total (ha) | | |
| | | I | II | III | IV | | V | | | | VI | VII | VIII | IX | | | |
| | | Establishmt* | Establishment* | Establishment | Establishment | Maintenance | Establishment | Maintenance | Establishment | Maintenance | Maintenance | Maintenance | Maintenance | Maintenance | Maintenance | Maintenance | Maintenance |
| **Anni** | Ani at Luheri | 0 | 10 | 0 | 7.41 | 0 | 0 | 10 | 10 | 10 | 10 | 10 | 10 | 0 | 10 | 10 | 10 |
| | Badari Dugh | 0 | 10 | 0 | 6.39 | 0 | 0 | 10 | 10 | 10 | 10 | 10 | 10 | 0 | 10 | 10 | 10 |
| | Badari Dugh | 10 | 0 | 10 | 0 | 10 | 0 | 10 | 10 | 10 | 10 | 10 | 0 | 0 | 10 | 10 | 10 |
| | Bangu Jhaker | 0 | 10 | 0 | 7.41 | 0 | 0 | 10 | 10 | 10 | 10 | 10 | 10 | 0 | 10 | 10 | 10 |
| | BanguJhakar-1 | 0 | 10 | 0 | 7.38 | 0 | 0 | 10 | 10 | 10 | 10 | 10 | 10 | 0 | 10 | 10 | 10 |
| | Beri nalla UPF Nore C-63 | 25 | 0 | 25 | 0 | 25 | 0 | 25 | 25 | 25 | 25 | 25 | 0 | 0 | 25 | 25 | 25 |
| | Bila jan | 20 | 0 | 20 | 0 | 20 | 0 | 20 | 20 | 20 | 20 | 20 | 0 | 0 | 20 | 20 | 20 |
| | Chalndi Dhar | 0 | 10 | 0 | 4.94 | 0 | 0 | 10 | 10 | 10 | 10 | 10 | 10 | 0 | 10 | 10 | 10 |
| | Chkadhar (UPF Khalair C-68) | 0 | 2 | 0 | 1.48 | 0 | 0 | 2 | 2 | 2 | 2 | 2 | 2 | 0 | 2 | 2 | 2 |
| | Jaglandi | 20 | 0 | 20 | 0 | 20 | 0 | 20 | 20 | 20 | 20 | 20 | 0 | 0 | 20 | 20 | 20 |
| | Jaglandi | 0 | 20 | 0 | 14.75 | 0 | 0 | 20 | 20 | 20 | 20 | 20 | 20 | 0 | 20 | 20 | 20 |
| | Jimna Dogri | 0 | 18 | 0 | 13.28 | 0 | 0 | 18 | 18 | 18 | 18 | 18 | 18 | 0 | 18 | 18 | 18 |
| | Khegsu | 0 | 0 | 0 | 0 | 0 | 50 | 0 | 50 | 0 | 50 | 50 | 50 | 50 | 50 | 50 | 50 |

| Division | Sitenames | Year | | | | | | | | | | | | | | Grand Total | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | Phase I | | Phase II | | | | | | |
| | | (Extent in ha) | | | | | | | Total(Extent in ha) | | (Extent in ha) | | | | Total (ha) | | |
| | | I | II | III | IV | | V | | | | VI | VII | VIII | IX | | | |
| | | Establishmt* | Establishment* | Establishment | Establishment | Maintenance | Establishment | Maintenance | Establishment | Maintenance | Maintenance | Maintenance | Maintenance | Maintenance | Maintenance | Maintenance | Maintenance |
| | Kotera Kod (UPF Shedric) | 0 | 0 | 0 | 0 | 0 | 115 | 0 | 115 | 0 | 115 | 115 | 115 | 115 | 115 | 115 | 115 |
| | Kukar Jan (UPF Nither) | 0 | 0 | 0 | 0 | 0 | 75 | 0 | 75 | 0 | 75 | 75 | 75 | 75 | 75 | 75 | 75 |
| | Luna Lot | 0 | 18 | 0 | 13.28 | 0 | 0 | 18 | 18 | 18 | 18 | 18 | 18 | 0 | 18 | 18 | 18 |
| | Patohardhar | 0 | 20 | 0 | 14.82 | 0 | 0 | 20 | 20 | 20 | 20 | 20 | 20 | 0 | 20 | 20 | 20 |
| | Ropri | 0 | 15 | 0 | 7.76 | 0 | 0 | 15 | 15 | 15 | 15 | 15 | 15 | 0 | 15 | 15 | 15 |
| | UPF Dagani | 0 | 10 | 0 | 7.41 | 0 | 0 | 10 | 10 | 10 | 10 | 10 | 10 | 0 | 10 | 10 | 10 |
| | UPF Jhangi C-32 (Thunga Jan) | 0 | 15 | 0 | 11.06 | 0 | 0 | 15 | 15 | 15 | 15 | 15 | 15 | 0 | 15 | 15 | 15 |
| **Bilaspur** | Bilaspur | 0 | 0 | 0 | 0 | 0 | 15 | 0 | 15 | 0 | 15 | 15 | 15 | 15 | 15 | 15 | 15 |
| | C-1 Osal jamun | 0 | 60 | 0 | 29.64 | 0 | 0 | 60 | 60 | 60 | 60 | 60 | 60 | 0 | 60 | 60 | 60 |
| | C-10 Raehera -1 | 0 | 10 | 0 | 4.94 | 0 | 0 | 10 | 10 | 10 | 10 | 10 | 10 | 0 | 10 | 10 | 10 |
| | C-17 Chaugan | 5 | 0 | 5 | 0 | 5 | 0 | 5 | 5 | 5 | 5 | 5 | 0 | 0 | 5 | 5 | 5 |
| | C-17 Chaugan | 18 | 0 | 18 | 0 | 18 | 0 | 18 | 18 | 18 | 18 | 18 | 0 | 0 | 18 | 18 | 18 |
| | C-35 Tange Walla | 10 | 0 | 10 | 0 | 10 | 0 | 10 | 10 | 10 | 10 | 10 | 0 | 0 | 10 | 10 | 10 |
| | C-43 Gadyana | 10 | 0 | 10 | 0 | 10 | 0 | 10 | 10 | 10 | 10 | 10 | 0 | 0 | 10 | 10 | 10 |
| | C-48 Thunj | 5 | 0 | 5 | 0 | 5 | 0 | 5 | 5 | 5 | 5 | 5 | 0 | 0 | 5 | 5 | 5 |
| | C-49 Kathiun | 34 | 0 | 34 | 0 | 34 | 0 | 34 | 34 | 34 | 34 | 34 | 0 | 0 | 34 | 34 | 34 |
| | C-9 Tihara | 5 | 0 | 5 | 0 | 5 | 0 | 5 | 5 | 5 | 5 | 5 | 0 | 0 | 5 | 5 | 5 |

| Division | Sitenames | Year | | | | | | | | | | | | | | Grand Total | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | Phase I | | Phase II | | | | | | |
| | | (Extent in ha) | | | | | | | Total(Extent in ha) | | (Extent in ha) | | | | Total (ha) | | |
| | | I | II | III | IV | | V | | | | VI | VII | VIII | IX | | | |
| | | Establishmt* | Establishment* | Establishment | Establishment | Maintenance | Establishment | Maintenance | Establishment | Maintenance | Maintenance | Maintenance | Maintenance | Maintenance | Maintenance | Maintenance | Maintenance |
| | C2 Jangla | 0 | 0 | 0 | 0 | 0 | 55 | 0 | 55 | 0 | 55 | 55 | 55 | 55 | 55 | 55 | 55 |
| | C3 (a) Nala Ka Sidh | 0 | 0 | 0 | 0 | 0 | 95 | 0 | 95 | 0 | 95 | 95 | 95 | 95 | 95 | 95 | 95 |
| | C4 (1) Surphat | 25 | 0 | 25 | 0 | 25 | 0 | 25 | 25 | 25 | 25 | 25 | 0 | 0 | 25 | 25 | 25 |
| | C6C Jhoulla | 0 | 70 | 0 | 34.58 | 0 | 0 | 70 | 70 | 70 | 70 | 70 | 70 | 0 | 70 | 70 | 70 |
| | Dahad | 22 | 0 | 22 | 0 | 22 | 0 | 22 | 22 | 22 | 22 | 22 | 0 | 0 | 22 | 22 | 22 |
| | DPF (9a) Chalheli | 0 | 0 | 0 | 0 | 0 | 75 | 0 | 75 | 0 | 75 | 75 | 75 | 75 | 75 | 75 | 75 |
| | DPF Balghar | 0 | 54 | 0 | 26.67 | 0 | 0 | 54 | 54 | 54 | 54 | 54 | 54 | 0 | 54 | 54 | 54 |
| | DPF Baryanle | 18 | 0 | 18 | 0 | 18 | 0 | 18 | 18 | 18 | 18 | 18 | 0 | 0 | 18 | 18 | 18 |
| | DPF Bathrin | 20 | 0 | 20 | 0 | 20 | 0 | 20 | 20 | 20 | 20 | 20 | 0 | 0 | 20 | 20 | 20 |
| | DPF Birewali | 25 | 0 | 25 | 0 | 25 | 0 | 25 | 25 | 25 | 25 | 25 | 0 | 0 | 25 | 25 | 25 |
| | DPF C-17 Chaughan | 15 | 0 | 15 | 0 | 15 | 0 | 15 | 15 | 15 | 15 | 15 | 0 | 0 | 15 | 15 | 15 |
| | DPF C-3a Panyala | 15 | 0 | 15 | 0 | 15 | 0 | 15 | 15 | 15 | 15 | 15 | 0 | 0 | 15 | 15 | 15 |
| | DPF C-5 (A) Palti | 40 | 0 | 40 | 0 | 40 | 0 | 40 | 40 | 40 | 40 | 40 | 0 | 0 | 40 | 40 | 40 |
| | DPF C-6 Anti | 10 | 0 | 10 | 0 | 10 | 0 | 10 | 10 | 10 | 10 | 10 | 0 | 0 | 10 | 10 | 10 |
| | DPF C-9 trontra | 15 | 0 | 15 | 0 | 15 | 0 | 15 | 15 | 15 | 15 | 15 | 0 | 0 | 15 | 15 | 15 |
| | DPF Gatol C4 (6) Randoh | 15 | 0 | 15 | 0 | 15 | 0 | 15 | 15 | 15 | 15 | 15 | 0 | 0 | 15 | 15 | 15 |
| | DPF Kharli | 10 | 0 | 10 | 0 | 10 | 0 | 10 | 10 | 10 | 10 | 10 | 0 | 0 | 10 | 10 | 10 |
| | DPF Kothi | 15 | 0 | 15 | 0 | 15 | 0 | 15 | 15 | 15 | 15 | 15 | 0 | 0 | 15 | 15 | 15 |

| Division | Sitenames | Year | | | | | | | | | | | | | | Grand Total | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | Phase I | | Phase II | | | | | | |
| | | (Extent in ha) | | | | | | | Total(Extent in ha) | | (Extent in ha) | | | | Total (ha) | | |
| | | I | II | III | IV | | V | | | | VI | VII | VIII | IX | | | |
| | | Establishmt* | Establishment* | Establishment | Establishment | Maintenance | Establishment | Maintenance | Establishment | Maintenance | Maintenance | Maintenance | Maintenance | Maintenance | Maintenance | Maintenance | Maintenance |
| | DPF MALAGAN - 1 | 20 | 0 | 20 | 0 | 20 | 0 | 20 | 20 | 20 | 20 | 20 | 0 | 0 | 20 | 20 | 20 |
| | DPF Maleta | 12 | 0 | 12 | 0 | 12 | 0 | 12 | 12 | 12 | 12 | 12 | 0 | 0 | 12 | 12 | 12 |
| | DPF Malhot | 10 | 0 | 10 | 0 | 10 | 0 | 10 | 10 | 10 | 10 | 10 | 0 | 0 | 10 | 10 | 10 |
| | DPF Rattanpur | 15 | 0 | 15 | 0 | 15 | 0 | 15 | 15 | 15 | 15 | 15 | 0 | 0 | 15 | 15 | 15 |
| | DPF Sandhla | 15 | 0 | 15 | 0 | 15 | 0 | 15 | 15 | 15 | 15 | 15 | 0 | 0 | 15 | 15 | 15 |
| | Kunihar | 0 | 0 | 0 | 0 | 0 | 15 | 0 | 15 | 0 | 15 | 15 | 15 | 15 | 15 | 15 | 15 |
| | UF Bargaon | 15 | 0 | 15 | 0 | 15 | 0 | 15 | 15 | 15 | 15 | 15 | 0 | 0 | 15 | 15 | 15 |
| | UF Dohak | 20 | 0 | 20 | 0 | 20 | 0 | 20 | 20 | 20 | 20 | 20 | 0 | 0 | 20 | 20 | 20 |
| | UPF Chanarda | 20 | 0 | 20 | 0 | 20 | 0 | 20 | 20 | 20 | 20 | 20 | 0 | 0 | 20 | 20 | 20 |
| | UPF Baloh | 20 | 0 | 20 | 0 | 20 | 0 | 20 | 20 | 20 | 20 | 20 | 0 | 0 | 20 | 20 | 20 |
| | UPF Baner | 15 | 0 | 15 | 0 | 15 | 0 | 15 | 15 | 15 | 15 | 15 | 0 | 0 | 15 | 15 | 15 |
| | UPF Bharsara | 18 | 0 | 18 | 0 | 18 | 0 | 18 | 18 | 18 | 18 | 18 | 0 | 0 | 18 | 18 | 18 |
| | UPF Brota Dabla ( nag Thakura Gola) | 15 | 0 | 15 | 0 | 15 | 0 | 15 | 15 | 15 | 15 | 15 | 0 | 0 | 15 | 15 | 15 |
| | UPF Chalela | 15 | 0 | 15 | 0 | 15 | 0 | 15 | 15 | 15 | 15 | 15 | 0 | 0 | 15 | 15 | 15 |
| | UPF Chalela | 15 | 0 | 15 | 0 | 15 | 0 | 15 | 15 | 15 | 15 | 15 | 0 | 0 | 15 | 15 | 15 |
| | UPF Chehri | 0 | 15 | 0 | 7.41 | 0 | 0 | 15 | 15 | 15 | 15 | 15 | 15 | 0 | 15 | 15 | 15 |
| | UPF Gwalthai | 0 | 0 | 0 | 0 | 0 | 80 | 0 | 80 | 0 | 80 | 80 | 80 | 80 | 80 | 80 | 80 |
| | UPF Jalagri | 0 | 10 | 0 | 6.39 | 0 | 0 | 10 | 10 | 10 | 10 | 10 | 10 | 0 | 10 | 10 | 10 |

| Division | Sitenames | Year | | | | | | | | | | | | | | Grand Total | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | Phase I | | Phase II | | | | | | |
| | | (Extent in ha) | | | | | | | Total(Extent in ha) | | (Extent in ha) | | | | Total (ha) | | |
| | | I | II | III | IV | | V | | | | VI | VII | VIII | IX | | | |
| | | Establishmt* | Establishment* | Establishment | Establishment | Maintenance | Establishment | Maintenance | Establishment | Maintenance | Maintenance | Maintenance | Maintenance | Maintenance | Maintenance | Maintenance | Maintenance |
| | UPF kadoh | 0 | 0 | 0 | 0 | 0 | 75 | 0 | 75 | 0 | 75 | 75 | 75 | 75 | 75 | 75 | 75 |
| | UPF Khurani | 10 | 0 | 10 | 0 | 10 | 0 | 10 | 10 | 10 | 10 | 10 | 0 | 0 | 10 | 10 | 10 |
| | UPF Kulziar II | 10 | 0 | 10 | 0 | 10 | 0 | 10 | 10 | 10 | 10 | 10 | 0 | 0 | 10 | 10 | 10 |
| | UPF Lehri | 15 | 0 | 15 | 0 | 15 | 0 | 15 | 15 | 15 | 15 | 15 | 0 | 0 | 15 | 15 | 15 |
| | UPF Nakrana | 15 | 0 | 15 | 0 | 15 | 0 | 15 | 15 | 15 | 15 | 15 | 0 | 0 | 15 | 15 | 15 |
| | UPF Neemawali | 12 | 0 | 12 | 0 | 12 | 0 | 12 | 12 | 12 | 12 | 12 | 0 | 0 | 12 | 12 | 12 |
| | UPF Palela | 15 | 0 | 15 | 0 | 15 | 0 | 15 | 15 | 15 | 15 | 15 | 0 | 0 | 15 | 15 | 15 |
| | UPF Shira | 10 | 0 | 10 | 0 | 10 | 0 | 10 | 10 | 10 | 10 | 10 | 0 | 0 | 10 | 10 | 10 |
| **Hamirpur** | Choa | 15 | 0 | 15 | 0 | 15 | 0 | 15 | 15 | 15 | 15 | 15 | 0 | 0 | 15 | 15 | 15 |
| | Kathiana | 20 | 0 | 20 | 0 | 20 | 0 | 20 | 20 | 20 | 20 | 20 | 0 | 0 | 20 | 20 | 20 |
| | P 19 Kharal | 0 | 0 | 0 | 0 | 0 | 80 | 0 | 80 | 0 | 80 | 80 | 80 | 80 | 80 | 80 | 80 |
| | P 21 Bijhari | 20 | 0 | 20 | 0 | 20 | 0 | 20 | 20 | 20 | 20 | 20 | 0 | 0 | 20 | 20 | 20 |
| | P 25 Khahsora | 0 | 0 | 0 | 0 | 0 | 50 | 0 | 50 | 0 | 50 | 50 | 50 | 50 | 50 | 50 | 50 |
| | P-11 Sathrion | 15 | 0 | 15 | 0 | 15 | 0 | 15 | 15 | 15 | 15 | 15 | 0 | 0 | 15 | 15 | 15 |
| | P-14 Relli C5b | 25 | 0 | 25 | 0 | 25 | 0 | 25 | 25 | 25 | 25 | 25 | 0 | 0 | 25 | 25 | 25 |
| | P-16 Dhar Sidh C-3c | 0 | 0 | 0 | 0 | 0 | 75 | 0 | 75 | 0 | 75 | 75 | 75 | 75 | 75 | 75 | 75 |
| | P-16 Dhar Sidh C5a | 15 | 0 | 15 | 0 | 15 | 0 | 15 | 15 | 15 | 15 | 15 | 0 | 0 | 15 | 15 | 15 |
| | P-17 Samella C2c | 15 | 0 | 15 | 0 | 15 | 0 | 15 | 15 | 15 | 15 | 15 | 0 | 0 | 15 | 15 | 15 |

| Division | Sitenames | Year | | | | | | | | | | | | | | Grand Total | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | Phase I | | Phase II | | | | | | |
| | | (Extent in ha) | | | | | | | Total(Extent in ha) | | (Extent in ha) | | | | Total (ha) | | |
| | | I | II | III | IV | | V | | | | VI | VII | VIII | IX | | | |
| | | Establishmt* | Establishment* | Establishment | Establishment | Maintenance | Establishment | Maintenance | Establishment | Maintenance | Maintenance | Maintenance | Maintenance | Maintenance | Maintenance | Maintenance | Maintenance |
| | P-22 Gutiana Batiana | 20 | 0 | 20 | 0 | 20 | 0 | 20 | 20 | 20 | 20 | 20 | 0 | 0 | 20 | 20 | 20 |
| | P-24 Ghangot C1a | 15 | 0 | 15 | 0 | 15 | 0 | 15 | 15 | 15 | 15 | 15 | 0 | 0 | 15 | 15 | 15 |
| | Put Aua Dugar | 20 | 0 | 20 | 0 | 20 | 0 | 20 | 20 | 20 | 20 | 20 | 0 | 0 | 20 | 20 | 20 |
| | U 78 Sulhori | 10 | 0 | 10 | 0 | 10 | 0 | 10 | 10 | 10 | 10 | 10 | 0 | 0 | 10 | 10 | 10 |
| | U 81 Kathiana | 10 | 0 | 10 | 0 | 10 | 0 | 10 | 10 | 10 | 10 | 10 | 0 | 0 | 10 | 10 | 10 |
| | U-106 Gharyani Jalta | 15 | 0 | 15 | 0 | 15 | 0 | 15 | 15 | 15 | 15 | 15 | 0 | 0 | 15 | 15 | 15 |
| **Karsog** | D 279 Nadaun-1 | 0 | 35 | 0 | 22.36 | 0 | 0 | 35 | 35 | 35 | 35 | 35 | 35 | 0 | 35 | 35 | 35 |
| | D-127 Sanach | 15 | 0 | 15 | 0 | 15 | 0 | 15 | 15 | 15 | 15 | 15 | 0 | 0 | 15 | 15 | 15 |
| | D-127 Sanach-1 | 45 | 0 | 45 | 0 | 45 | 0 | 45 | 45 | 45 | 45 | 0 | 0 | 0 | 45 | 45 | 45 |
| | D-184 Maha Dev Banoni | 0 | 0 | 0 | 0 | 0 | 25 | 0 | 25 | 0 | 25 | 25 | 25 | 25 | 25 | 25 | 25 |
| | D-193 Katach C-III | 25 | 0 | 25 | 0 | 25 | 0 | 25 | 25 | 25 | 25 | 25 | 0 | 0 | 25 | 25 | 25 |
| | D-203 Thach | 0 | 0 | 0 | 0 | 0 | 20 | 0 | 20 | 0 | 20 | 20 | 20 | 20 | 20 | 20 | 20 |
| | D-203 Thach-1 | 0 | 30 | 0 | 22.22 | 0 | 0 | 30 | 30 | 30 | 30 | 30 | 30 | 0 | 30 | 30 | 30 |
| | D-233 Richhani | 0 | 0 | 0 | 0 | 0 | 25 | 0 | 25 | 0 | 25 | 25 | 25 | 25 | 25 | 25 | 25 |
| | D-252 Naganal | 15 | 0 | 15 | 0 | 15 | 0 | 15 | 15 | 15 | 15 | 15 | 0 | 0 | 15 | 15 | 15 |

| Division | Sitenames | Year | | | | | | | | | | | | | | Grand Total | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | Phase I | | Phase II | | | | | | |
| | | (Extent in ha) | | | | | | | Total(Extent in ha) | | (Extent in ha) | | | | Total (ha) | | |
| | | I | II | III | IV | | V | | | | VI | VII | VIII | IX | | | |
| | | Establishmt* | Establishment* | Establishment | Establishment | Maintenance | Establishment | Maintenance | Establishment | Maintenance | Maintenance | Maintenance | Maintenance | Maintenance | Maintenance | Maintenance | Maintenance |
| | D-257 Jagal | 0 | 0 | 0 | 0 | 0 | 40 | 0 | 40 | 0 | 40 | 40 | 40 | 0 | 40 | 40 | 40 |
| | D-257 Jagal | 20 | 0 | 20 | 0 | 20 | 0 | 20 | 20 | 20 | 20 | 20 | 0 | 0 | 20 | 20 | 20 |
| | D-259 | 0 | 0 | 0 | 0 | 0 | 18 | 0 | 18 | 0 | 18 | 18 | 18 | 18 | 18 | 18 | 18 |
| | D-260 Lotla | 18 | 0 | 18 | 0 | 18 | 0 | 18 | 18 | 18 | 18 | 18 | 0 | 0 | 18 | 18 | 18 |
| | D-270 Ruhmani | 15 | 0 | 15 | 0 | 15 | 0 | 15 | 15 | 15 | 15 | 15 | 0 | 0 | 15 | 15 | 15 |
| | D-273 Lassi | 0 | 20 | 0 | 14.82 | 0 | 0 | 20 | 20 | 20 | 20 | 20 | 20 | 0 | 20 | 20 | 20 |
| | D-275 Kathaloo | 15 | 0 | 15 | 0 | 15 | 0 | 15 | 15 | 15 | 15 | 15 | 0 | 0 | 15 | 15 | 15 |
| | D-276 Rucehad | 0 | 0 | 0 | 0 | 0 | 15 | 0 | 15 | 0 | 15 | 15 | 15 | 15 | 15 | 15 | 15 |
| | D-280 Nadaun | 0 | 25 | 0 | 15.97 | 0 | 0 | 25 | 25 | 25 | 25 | 25 | 25 | 0 | 25 | 25 | 25 |
| | D-283 Raidhar | 0 | 0 | 0 | 0 | 0 | 20 | 0 | 20 | 0 | 20 | 20 | 20 | 20 | 20 | 20 | 20 |
| | D-296 | 0 | 0 | 0 | 0 | 0 | 20 | 0 | 20 | 0 | 20 | 20 | 20 | 20 | 20 | 20 | 20 |
| | D-297 Surahi | 20 | 0 | 20 | 0 | 20 | 0 | 20 | 20 | 20 | 20 | 20 | 0 | 0 | 20 | 20 | 20 |
| | D-73 Gharlol C-II | 20 | 0 | 20 | 0 | 20 | 0 | 20 | 20 | 20 | 20 | 20 | 0 | 0 | 20 | 20 | 20 |
| | Karsog | 30 | 0 | 30 | 0 | 30 | 0 | 30 | 30 | 30 | 30 | 30 | 0 | 0 | 30 | 30 | 30 |
| **Kinnaur** | khaia (p/land ) | 0 | 0 | 0 | 0 | 0 | 45 | 0 | 45 | 0 | 45 | 45 | 45 | 0 | 45 | 45 | 45 |
| | khaia (p/land ) | 25 | 0 | 25 | 0 | 25 | 0 | 25 | 25 | 25 | 25 | 25 | 0 | 0 | 25 | 25 | 25 |
| | Kinnaur | 20 | 0 | 20 | 0 | 20 | 0 | 20 | 20 | 20 | 20 | 20 | 0 | 0 | 20 | 20 | 20 |
| | Lahyok | 20 | 0 | 20 | 0 | 20 | 0 | 20 | 20 | 20 | 20 | 20 | 0 | 0 | 20 | 20 | 20 |
| | Lahyok | 40 | 0 | 40 | 0 | 40 | 0 | 40 | 40 | 40 | 40 | 0 | 0 | 0 | 40 | 40 | 40 |

| Division | Sitenames | Year | | | | | | | | | | | | | | Grand Total | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | Phase I | | Phase II | | | | | | |
| | | (Extent in ha) | | | | | | | Total(Extent in ha) | | (Extent in ha) | | | | Total (ha) | | |
| | | I | II | III | IV | | V | | | | VI | VII | VIII | IX | | | |
| | | Establishmt* | Establishment* | Establishment | Establishment | Maintenance | Establishment | Maintenance | Establishment | Maintenance | Maintenance | Maintenance | Maintenance | Maintenance | Maintenance | Maintenance | Maintenance |
| | Nichar | 20 | 0 | 20 | 0 | 20 | 0 | 20 | 20 | 20 | 20 | 20 | 0 | 0 | 20 | 20 | 20 |
| | Niglong (vikas nagar) | 15 | 0 | 15 | 0 | 15 | 0 | 15 | 15 | 15 | 15 | 15 | 0 | 0 | 15 | 15 | 15 |
| | Nigul Seri | 25 | 0 | 25 | 0 | 25 | 0 | 25 | 25 | 25 | 25 | 25 | 0 | 0 | 25 | 25 | 25 |
| | Nigul Seri-1 | 0 | 35 | 0 | 8.14 | 0 | 0 | 35 | 35 | 35 | 35 | 35 | 0 | 0 | 35 | 35 | 35 |
| | Rurang kanda | 60 | 0 | 60 | 0 | 60 | 0 | 60 | 60 | 60 | 60 | 60 | 0 | 0 | 60 | 60 | 60 |
| | UPF Tranda | 0 | 15 | 0 | 9.58 | 0 | 0 | 15 | 15 | 15 | 15 | 15 | 15 | 0 | 15 | 15 | 15 |
| | UPF Thach | 10 | 0 | 10 | 0 | 10 | 0 | 10 | 10 | 10 | 10 | 0 | 0 | 0 | 10 | 10 | 10 |
| **Kotgarh** | Bithal Kanda | 0 | 10 | 0 | 6.39 | 0 | 0 | 10 | 10 | 10 | 10 | 10 | 10 | 0 | 10 | 10 | 10 |
| | DPF Awar C-31 | 0 | 15 | 0 | 11.06 | 0 | 0 | 15 | 15 | 15 | 15 | 15 | 15 | 0 | 15 | 15 | 15 |
| | DPF Chhichr C-38 (b) | 15 | 0 | 15 | 0 | 15 | 0 | 15 | 15 | 15 | 15 | 15 | 0 | 0 | 15 | 15 | 15 |
| | DPF Hawan C-45 | 15 | 0 | 15 | 0 | 15 | 0 | 15 | 15 | 15 | 15 | 15 | 0 | 0 | 15 | 15 | 15 |
| | DPF Jhamunda | 15 | 0 | 15 | 0 | 15 | 0 | 15 | 15 | 15 | 15 | 15 | 0 | 0 | 15 | 15 | 15 |
| | DPF Kapu CN-35 | 15 | 0 | 15 | 0 | 15 | 0 | 15 | 15 | 15 | 15 | 15 | 0 | 0 | 15 | 15 | 15 |
| | DPF Manu CN 21 | 0 | 15 | 0 | 9.58 | 0 | 0 | 15 | 15 | 15 | 15 | 15 | 15 | 0 | 15 | 15 | 15 |
| | DPF Nihari C-49 | 10 | 0 | 10 | 0 | 10 | 0 | 10 | 10 | 10 | 10 | 10 | 0 | 0 | 10 | 10 | 10 |
| | RF Nagkelo C-59 (A) | 10 | 0 | 10 | 0 | 10 | 0 | 10 | 10 | 10 | 10 | 10 | 0 | 0 | 10 | 10 | 10 |

| Division | Sitenames | Year | | | | | | | | | | | | | | Grand Total | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | Phase I | | Phase II | | | | | | |
| | | (Extent in ha) | | | | | | | Total(Extent in ha) | | (Extent in ha) | | | | Total (ha) | | |
| | | I | II | III | IV | | V | | | | VI | VII | VIII | IX | | | |
| | | Establishmt* | Establishment* | Establishment | Establishment | Maintenance | Establishment | Maintenance | Establishment | Maintenance | Maintenance | Maintenance | Maintenance | Maintenance | Maintenance | Maintenance | Maintenance |
| | UPF Banaharkandi C233 | 15 | 0 | 15 | 0 | 15 | 0 | 15 | 15 | 15 | 15 | 15 | 0 | 0 | 15 | 15 | 15 |
| | UPF Deha C-207 | 0 | 15 | 0 | 11.06 | 0 | 0 | 15 | 15 | 15 | 15 | 15 | 15 | 0 | 15 | 15 | 15 |
| | UPF Jarola C-213 | 20 | 0 | 20 | 0 | 20 | 0 | 20 | 20 | 20 | 20 | 20 | 0 | 0 | 20 | 20 | 20 |
| | UPF Khalantu C-218 | 0 | 15 | 0 | 9.58 | 0 | 0 | 15 | 15 | 15 | 15 | 15 | 15 | 0 | 15 | 15 | 15 |
| | UPF Madhawn C-282 | 0 | 15 | 0 | 11.06 | 0 | 0 | 15 | 15 | 15 | 15 | 15 | 15 | 0 | 15 | 15 | 15 |
| **Kunihar** | DPF 309 Manjyal C-1 | 15 | 0 | 15 | 0 | 15 | 0 | 15 | 15 | 15 | 15 | 15 | 0 | 0 | 15 | 15 | 15 |
| | DPF 309 Manjyal C-1 | 0 | 15 | 0 | 7.76 | 0 | 0 | 15 | 15 | 15 | 15 | 15 | 15 | 0 | 15 | 15 | 15 |
| | DPF 77 Kangu C-1B | 0 | 15 | 0 | 8.46 | 0 | 0 | 15 | 15 | 15 | 15 | 15 | 15 | 0 | 15 | 15 | 15 |
| | DPF Daho Ki Dhar, C-6 | 0 | 15 | 0 | 8.46 | 0 | 0 | 15 | 15 | 15 | 15 | 15 | 15 | 0 | 15 | 15 | 15 |
| | DPF Sharon | 0 | 85 | 0 | 47.95 | 0 | 0 | 85 | 85 | 85 | 85 | 85 | 85 | 0 | 85 | 85 | 85 |
| | Kunihar | 20 | 0 | 20 | 0 | 20 | 0 | 20 | 20 | 20 | 20 | 20 | 0 | 0 | 20 | 20 | 20 |
| | Shilru DPF | 0 | 15 | 0 | 11.11 | 0 | 0 | 15 | 15 | 15 | 15 | 15 | 15 | 0 | 15 | 15 | 15 |
| | U-344 Chyale Ki Dhar | 0 | 15 | 0 | 8.46 | 0 | 0 | 15 | 15 | 15 | 15 | 15 | 15 | 0 | 15 | 15 | 15 |
| | U-346 Kail | 0 | 15 | 0 | 8.46 | 0 | 0 | 15 | 15 | 15 | 15 | 15 | 15 | 0 | 15 | 15 | 15 |
| | U-387 Chatiud | 0 | 15 | 0 | 8.46 | 0 | 0 | 15 | 15 | 15 | 15 | 15 | 15 | 0 | 15 | 15 | 15 |

| Division | Sitenames | Year | | | | | | | Grand Total | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | Phase I | | Phase II | | | | | | |
| | | (Extent in ha) | | | | | | | Total(Extent in ha) | | (Extent in ha) | | | | Total (ha) | | |
| | | I | II | III | IV | | V | | | | VI | VII | VIII | IX | | | |
| | | Establishmt* | Establishment* | Establishment | Establishment | Maintenance | Establishment | Maintenance | Establishment | Maintenance | Maintenance | Maintenance | Maintenance | Maintenance | Maintenance | Maintenance | Maintenance |
| | UPF 305KoKhari | 0 | 10 | 0 | 5.64 | 0 | 0 | 10 | 10 | 10 | 10 | 10 | 10 | 0 | 10 | 10 | 10 |
| | UPF 334 Ladech West | 10 | 0 | 10 | 0 | 10 | 0 | 10 | 10 | 10 | 10 | 10 | 0 | 0 | 10 | 10 | 10 |
| | UPF Dochi | 0 | 15 | 0 | 8.46 | 0 | 0 | 15 | 15 | 15 | 15 | 15 | 15 | 0 | 15 | 15 | 15 |
| **Nachan** | Baneshidhar | 0 | 30 | 0 | 22.13 | 0 | 0 | 30 | 30 | 30 | 30 | 30 | 30 | 0 | 30 | 30 | 30 |
| | Bharoon-1 | 0 | 30 | 0 | 22.22 | 0 | 0 | 30 | 30 | 30 | 30 | 30 | 30 | 0 | 30 | 30 | 30 |
| | Bhella | 0 | 30 | 0 | 22.22 | 0 | 0 | 30 | 30 | 30 | 30 | 30 | 30 | 0 | 30 | 30 | 30 |
| | Bhoombhai site | 0 | 35 | 0 | 25.82 | 0 | 0 | 35 | 35 | 35 | 35 | 35 | 35 | 0 | 35 | 35 | 35 |
| | Malach | 0 | 30 | 0 | 22.13 | 0 | 0 | 30 | 30 | 30 | 30 | 30 | 30 | 0 | 30 | 30 | 30 |
| | Nachan | 0 | 0 | 0 | 0 | 0 | 120 | 0 | 120 | 0 | 120 | 120 | 120 | 120 | 120 | 120 | 120 |
| | Nachan -2 | 0 | 45 | 0 | 33.19 | 0 | 0 | 45 | 45 | 45 | 45 | 45 | 45 | 0 | 45 | 45 | 45 |
| | Nachan -2 | 0 | 40 | 0 | 29.5 | 0 | 0 | 40 | 40 | 40 | 40 | 40 | 40 | 0 | 40 | 40 | 40 |
| **Nalagarh** | Chikni Khad | 100 | 0 | 100 | 0 | 100 | 0 | 100 | 100 | 100 | 100 | 100 | 0 | 0 | 100 | 100 | 100 |
| | Chikni Khad (2) | 0 | 0 | 0 | 0 | 0 | 100 | 0 | 100 | 0 | 100 | 100 | 100 | 100 | 100 | 100 | 100 |
| | Chikni Khad (3) | 0 | 120 | 0 | 59.27 | 0 | 0 | 120 | 120 | 120 | 120 | 120 | 120 | 0 | 120 | 120 | 120 |
| | D-168 Bhalwa, Salhaar and taller | 0 | 10 | 0 | 5.64 | 0 | 0 | 10 | 10 | 10 | 10 | 10 | 10 | 0 | 10 | 10 | 10 |
| | D-169 Talli | 0 | 15 | 0 | 9.58 | 0 | 0 | 15 | 15 | 15 | 15 | 15 | 15 | 0 | 15 | 15 | 15 |

| Division | Sitenames | Year | | | | | | | | | | | | | | Grand Total | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | Phase I | | Phase II | | | | | | |
| | | (Extent in ha) | | | | | | | Total(Extent in ha) | | (Extent in ha) | | | | Total (ha) | | |
| | | I | II | III | IV | | V | | | | VI | VII | VIII | IX | | | |
| | | Establishmt* | Establishment* | Establishment | Establishment | Maintenance | Establishment | Maintenance | Establishment | Maintenance | Maintenance | Maintenance | Maintenance | Maintenance | Maintenance | Maintenance | Maintenance |
| | Gambar, Gamrola Khad | 0 | 200 | 0 | 103.48 | 0 | 0 | 200 | 200 | 200 | 200 | 200 | 200 | 0 | 200 | 200 | 200 |
| | Gamber, Kuwaj Khad | 90 | 0 | 90 | 0 | 90 | 0 | 90 | 90 | 90 | 90 | 90 | 0 | 0 | 90 | 90 | 90 |
| | Gamber, Kuwaj Khad | 0 | 110 | 0 | 56.91 | 0 | 0 | 110 | 110 | 110 | 110 | 110 | 110 | 0 | 110 | 110 | 110 |
| | Gamber, Kuwaj Khad (2) | 0 | 25 | 0 | 12.93 | 0 | 0 | 25 | 25 | 25 | 25 | 25 | 25 | 0 | 25 | 25 | 25 |
| | Gamrala Khad | 100 | 0 | 100 | 0 | 100 | 0 | 100 | 100 | 100 | 100 | 100 | 0 | 0 | 100 | 100 | 100 |
| | Ghamber, Kawaj Khad | 0 | 30 | 0 | 15.52 | 0 | 0 | 30 | 30 | 30 | 30 | 30 | 30 | 0 | 30 | 30 | 30 |
| | Khokra (Shamlat) | 20 | 0 | 20 | 0 | 20 | 0 | 20 | 20 | 20 | 20 | 20 | 0 | 0 | 20 | 20 | 20 |
| | Kuwaj | 0 | 20 | 0 | 10.35 | 0 | 0 | 20 | 20 | 20 | 20 | 20 | 20 | 0 | 20 | 20 | 20 |
| | Landewal (Shamlat) Shitlpur | 0 | 20 | 0 | 11.28 | 0 | 0 | 20 | 20 | 20 | 20 | 20 | 20 | 0 | 20 | 20 | 20 |
| | Machha (Shamlat) | 22 | 0 | 22 | 0 | 22 | 0 | 22 | 22 | 22 | 22 | 22 | 0 | 0 | 22 | 22 | 22 |
| | Malku majra (Shamlat) Dasho Majra (Shamlat) | 15 | 0 | 15 | 0 | 15 | 0 | 15 | 15 | 15 | 15 | 15 | 0 | 0 | 15 | 15 | 15 |
| | N/Chanla ( Nerli Chanala) | 20 | 0 | 20 | 0 | 20 | 0 | 20 | 20 | 20 | 20 | 20 | 0 | 0 | 20 | 20 | 20 |
| | Nalagarh | 20 | 0 | 20 | 0 | 20 | 0 | 20 | 20 | 20 | 20 | 20 | 0 | 0 | 20 | 20 | 20 |

| Division | Sitenames | Year | | | | | | | | | | | | | | Grand Total | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | Phase I | | Phase II | | | | | | |
| | | (Extent in ha) | | | | | | | Total(Extent in ha) | | (Extent in ha) | | | | Total (ha) | | |
| | | I | II | III | IV | | V | | | | VI | VII | VIII | IX | | | |
| | | Establishmt* | Establishment* | Establishment | Establishment | Maintenance | Establishment | Maintenance | Establishment | Maintenance | Maintenance | Maintenance | Maintenance | Maintenance | Maintenance | Maintenance | Maintenance |
| | palli kahd | 0 | 0 | 0 | 0 | 0 | 100 | 0 | 100 | 0 | 100 | 100 | 100 | 100 | 100 | 100 | 100 |
| | Sai (Shamlat) | 50 | 0 | 50 | 0 | 50 | 0 | 50 | 50 | 50 | 50 | 50 | 0 | 0 | 50 | 50 | 50 |
| **Rampur** | Anni at Luhri | 0 | 0 | 0 | 0 | 0 | 10 | 0 | 10 | 0 | 10 | 10 | 10 | 10 | 10 | 10 | 10 |
| | Rampur | 15 | 0 | 15 | 0 | 15 | 0 | 15 | 15 | 15 | 15 | 15 | 0 | 0 | 15 | 15 | 15 |
| | UPF Luhri C271 | 0 | 35 | 0 | 8.14 | 0 | 0 | 35 | 35 | 35 | 35 | 35 | 0 | 0 | 35 | 35 | 35 |
| | UPF Luhri C271 | 15 | 0 | 15 | 0 | 15 | 0 | 15 | 15 | 15 | 15 | 15 | 0 | 0 | 15 | 15 | 15 |
| | UPF Luhri C271 | 25 | 0 | 25 | 0 | 25 | 0 | 25 | 25 | 25 | 25 | 25 | 0 | 0 | 25 | 25 | 25 |
| | UPF Luhri C271 | 25 | 0 | 25 | 0 | 25 | 0 | 25 | 25 | 25 | 25 | 25 | 0 | 0 | 25 | 25 | 25 |
| | UPF Luhri C271-1 | 35 | 0 | 35 | 0 | 35 | 0 | 35 | 35 | 35 | 35 | 0 | 0 | 0 | 35 | 35 | 35 |
| | UPF Newal | 0 | 10 | 0 | 6.39 | 0 | 0 | 10 | 10 | 10 | 10 | 10 | 10 | 0 | 10 | 10 | 10 |
| | UPF Newal -1 | 0 | 0 | 0 | 0 | 0 | 40 | 0 | 40 | 0 | 40 | 40 | 40 | 0 | 40 | 40 | 40 |
| **Shimla** | Chhachhru Nalla (Ganoti Jungle - D-82 Kasumpti) | 0 | 40 | 0 | 29.63 | 0 | 0 | 40 | 40 | 40 | 40 | 40 | 40 | 0 | 40 | 40 | 40 |
| | Ganoti Nalla ( D-82 Kasumpti) | 0 | 30 | 0 | 22.22 | 0 | 0 | 30 | 30 | 30 | 30 | 30 | 30 | 0 | 30 | 30 | 30 |
| | GCL Bhagalli | 0 | 25 | 0 | 18.44 | 0 | 0 | 25 | 25 | 25 | 25 | 25 | 25 | 0 | 25 | 25 | 25 |
| | Shimla | 0 | 35 | 0 | 17.29 | 0 | 0 | 35 | 35 | 35 | 35 | 35 | 35 | 0 | 35 | 35 | 35 |

| Division | Sitenames | Year | | | | | | | Phase I | | Phase II | | | | | Grand Total | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | (Extent in ha) | | | | | | | Total(Extent in ha) | | (Extent in ha) | | | | Total (ha) | | |
| | | I | II | III | IV | | V | | | | VI | VII | VIII | IX | | | |
| | | Establishmt* | Establishment* | Establishment | Establishment | Maintenance | Establishment | Maintenance | Establishment | Maintenance | Maintenance | Maintenance | Maintenance | Maintenance | Maintenance | Maintenance | Maintenance |
| **Solan** | Delgi | 10 | 0 | 10 | 0 | 10 | 0 | 10 | 10 | 10 | 10 | 10 | 0 | 0 | 10 | 10 | 10 |
| | Parli Rano | 10 | 0 | 10 | 0 | 10 | 0 | 10 | 10 | 10 | 10 | 10 | 0 | 0 | 10 | 10 | 10 |
| | Solan | 15 | 0 | 15 | 0 | 15 | 0 | 15 | 15 | 15 | 15 | 15 | 0 | 0 | 15 | 15 | 15 |
| **Spiti Wildlife** | Chame | 0 | 100 | 0 | 99.3 | 0 | 0 | 100 | 100 | 100 | 100 | 100 | 0 | 0 | 100 | 100 | 100 |
| | Spiti WL | 25 | 0 | 25 | 0 | 25 | 0 | 25 | 25 | 25 | 25 | 25 | 0 | 0 | 25 | 25 | 25 |
| | Thoyor Thevo | 0 | 100 | 0 | 40.85 | 0 | 0 | 100 | 100 | 100 | 100 | 100 | 100 | 0 | 100 | 100 | 100 |
| | Zukti | 0 | 0 | 0 | 0 | 0 | 100 | 0 | 100 | 0 | 100 | 100 | 100 | 100 | 100 | 100 | 100 |
| **Suket** | Dhawal, Barpat, Dhawal-II Ahen Sunali | 0 | 25 | 0 | 18.52 | 0 | 0 | 25 | 25 | 25 | 25 | 25 | 25 | 0 | 25 | 25 | 25 |
| | ND 292 Fafna | 0 | 0 | 0 | 0 | 0 | 75 | 0 | 75 | 0 | 75 | 75 | 75 | 75 | 75 | 75 | 75 |
| | ND 293 Chauri-I | 0 | 15 | 0 | 7.41 | 0 | 0 | 15 | 15 | 15 | 15 | 15 | 15 | 0 | 15 | 15 | 15 |
| | ND 294 Chauri-II | 0 | 0 | 0 | 0 | 0 | 65 | 0 | 65 | 0 | 65 | 65 | 65 | 65 | 65 | 65 | 65 |
| | ND 298 Neri Roparu | 0 | 0 | 0 | 0 | 0 | 55 | 0 | 55 | 0 | 55 | 55 | 55 | 55 | 55 | 55 | 55 |
| | ND 299 Gehru II | 0 | 0 | 0 | 0 | 0 | 65 | 0 | 65 | 0 | 65 | 65 | 65 | 65 | 65 | 65 | 65 |
| | ND 301 Gehru | 0 | 10 | 0 | 4.94 | 0 | 0 | 10 | 10 | 10 | 10 | 10 | 10 | 0 | 10 | 10 | 10 |
| | ND 303 Dharli Brad | 0 | 10 | 0 | 4.94 | 0 | 0 | 10 | 10 | 10 | 10 | 10 | 10 | 0 | 10 | 10 | 10 |
| | OD 296 Chalon | 0 | 25 | 0 | 12.35 | 0 | 0 | 25 | 25 | 25 | 25 | 25 | 25 | 0 | 25 | 25 | 25 |

| Division | Sitenames | Year | | | | | | | | | | | | | | Grand Total | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | Phase I | | Phase II | | | | | | |
| | | (Extent in ha) | | | | | | | Total(Extent in ha) | | (Extent in ha) | | | | Total (ha) | | |
| | | I | II | III | IV | | V | | | | VI | VII | VIII | IX | | | |
| | | Establishmt* | Establishment* | Establishment | Establishment | Maintenance | Establishment | Maintenance | Establishment | Maintenance | Maintenance | Maintenance | Maintenance | Maintenance | Maintenance | Maintenance | Maintenance |
| | OD 305 Salyana | 20 | 0 | 20 | 0 | 20 | 0 | 20 | 20 | 20 | 20 | 20 | 0 | 0 | 20 | 20 | 20 |
| | Suket | 3 | 0 | 3 | 0 | 3 | 0 | 3 | 3 | 3 | 3 | 3 | 0 | 0 | 3 | 3 | 3 |
| **Theog** | Dudhbag-1 | 0 | 15 | 0 | 11.06 | 0 | 0 | 15 | 15 | 15 | 15 | 15 | 15 | 0 | 15 | 15 | 15 |
| | Jugo Nalla -1 | 0 | 20 | 0 | 14.75 | 0 | 0 | 20 | 20 | 20 | 20 | 20 | 20 | 0 | 20 | 20 | 20 |
| | kadyog nalla -1 | 0 | 25 | 0 | 18.44 | 0 | 0 | 25 | 25 | 25 | 25 | 25 | 25 | 0 | 25 | 25 | 25 |
| | kalyog -1 | 0 | 25 | 0 | 18.44 | 0 | 0 | 25 | 25 | 25 | 25 | 25 | 25 | 0 | 25 | 25 | 25 |
| | Kiyary Nalla -1 | 0 | 30 | 0 | 22.13 | 0 | 0 | 30 | 30 | 30 | 30 | 30 | 30 | 0 | 30 | 30 | 30 |
| | Lagal Nalla -1 | 0 | 20 | 0 | 14.75 | 0 | 0 | 20 | 20 | 20 | 20 | 20 | 20 | 0 | 20 | 20 | 20 |
| | Theog | 0 | 0 | 0 | 0 | 0 | 130 | 0 | 130 | 0 | 130 | 130 | 130 | 130 | 130 | 130 | 130 |
| **Una** | DPF Ban Dhanet C3a | 0 | 15 | 0 | 7.41 | 0 | 0 | 15 | 15 | 15 | 15 | 15 | 15 | 0 | 15 | 15 | 15 |
| | DPF Ban Dhanet C3b | 0 | 15 | 0 | 9.58 | 0 | 0 | 15 | 15 | 15 | 15 | 15 | 15 | 0 | 15 | 15 | 15 |
| | DPF Ban Dhanet C3C | 0 | 15 | 0 | 7.41 | 0 | 0 | 15 | 15 | 15 | 15 | 15 | 15 | 0 | 15 | 15 | 15 |
| | DPF Bohru C1C | 0 | 20 | 0 | 9.88 | 0 | 0 | 20 | 20 | 20 | 20 | 20 | 20 | 0 | 20 | 20 | 20 |
| | DPF Dhunesar C2C | 0 | 20 | 0 | 10.35 | 0 | 0 | 20 | 20 | 20 | 20 | 20 | 20 | 0 | 20 | 20 | 20 |
| | DPF Dhunser 3C | 0 | 15 | 0 | 8.46 | 0 | 0 | 15 | 15 | 15 | 15 | 15 | 15 | 0 | 15 | 15 | 15 |
| | DPF Dhunser C2.9 NB | 0 | 15 | 0 | 8.1 | 0 | 0 | 15 | 15 | 15 | 15 | 15 | 15 | 0 | 15 | 15 | 15 |

| Division | Sitenames | Year | | | | | | | | | | | | | | Grand Total | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | Phase I | | Phase II | | | | | | |
| | | (Extent in ha) | | | | | | | Total(Extent in ha) | | (Extent in ha) | | | | Total (ha) | | |
| | | I | II | III | IV | | V | | | | VI | VII | VIII | IX | | | |
| | | Establishmt* | Establishment* | Establishment | Establishment | Maintenance | Establishment | Maintenance | Establishment | Maintenance | Maintenance | Maintenance | Maintenance | Maintenance | Maintenance | Maintenance | Maintenance |
| | DPF Dhunser C2D | 0 | 25 | 0 | 12.93 | 0 | 0 | 25 | 25 | 25 | 25 | 25 | 25 | 0 | 25 | 25 | 25 |
| | DPF Kariara C-1 C | 0 | 0 | 0 | 0 | 0 | 70 | 0 | 70 | 0 | 70 | 70 | 70 | 70 | 70 | 70 | 70 |
| | DPF Ramgarh Awarta | 15 | 0 | 15 | 0 | 15 | 0 | 15 | 15 | 15 | 15 | 15 | 0 | 0 | 15 | 15 | 15 |
| | DPF Ramgarh Awarta (C7B) | 40 | 0 | 40 | 0 | 40 | 0 | 40 | 40 | 40 | 40 | 40 | 0 | 0 | 40 | 40 | 40 |
| | DPF Ramgarh Awarta (C7C) | 0 | 0 | 0 | 0 | 0 | 60 | 0 | 60 | 0 | 60 | 60 | 60 | 60 | 60 | 60 | 60 |
| | DPF Ramgarh Parla C1B SB | 0 | 18 | 0 | 8.89 | 0 | 0 | 18 | 18 | 18 | 18 | 18 | 18 | 0 | 18 | 18 | 18 |
| | DPF Sarkaru C2 a | 0 | 15 | 0 | 9.58 | 0 | 0 | 15 | 15 | 15 | 15 | 15 | 15 | 0 | 15 | 15 | 15 |
| | DPF Sarkaru Gharplani | 15 | 0 | 15 | 0 | 15 | 0 | 15 | 15 | 15 | 15 | 15 | 0 | 0 | 15 | 15 | 15 |
| | DPF sarkaru Ghor Plani | 0 | 15 | 0 | 7.41 | 0 | 0 | 15 | 15 | 15 | 15 | 15 | 15 | 0 | 15 | 15 | 15 |
| | FRH nangal Complex at Nangal | 0 | 15 | 0 | 8.46 | 0 | 0 | 15 | 15 | 15 | 15 | 15 | 15 | 0 | 15 | 15 | 15 |
| | Una | 25 | 0 | 25 | 0 | 25 | 0 | 25 | 25 | 25 | 25 | 25 | 0 | 0 | 25 | 25 | 25 |
| | UPF Busal (C-1) | 0 | 0 | 0 | 0 | 0 | 35 | 0 | 35 | 0 | 35 | 35 | 35 | 35 | 35 | 35 | 35 |
| | UPF Busal (C-3) | 30 | 0 | 30 | 0 | 30 | 0 | 30 | 30 | 30 | 30 | 30 | 0 | 0 | 30 | 30 | 30 |
| | UPF Busal C-2 | 0 | 0 | 0 | 0 | 0 | 78 | 0 | 78 | 0 | 78 | 78 | 78 | 78 | 78 | 78 | 78 |

| Division | Sitenames | Year | | | | | | | Grand Total | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | Phase I | | Phase II | | | | | | |
| | | (Extent in ha) | | | | | | | Total(Extent in ha) | | (Extent in ha) | | | | Total (ha) | | |
| | | I | II | III | IV | | V | | | | VI | VII | VIII | IX | | | |
| | | Establishmt* | Establishment* | Establishment | Establishment | Maintenance | Establishment | Maintenance | Establishment | Maintenance | Maintenance | Maintenance | Maintenance | Maintenance | Maintenance | Maintenance | Maintenance |
| | UPF Daroh | 0 | 20 | 0 | 12.78 | 0 | 0 | 20 | 20 | 20 | 20 | 20 | 20 | 0 | 20 | 20 | 20 |
| | UPF Malangar Bharmana | 0 | 10 | 0 | 4.94 | 0 | 0 | 10 | 10 | 10 | 10 | 10 | 10 | 0 | 10 | 10 | 10 |
| | UPF Marhot Brahmha | 0 | 15 | 0 | 7.41 | 0 | 0 | 15 | 15 | 15 | 15 | 15 | 15 | 0 | 15 | 15 | 15 |
| | UPF Pansai | 0 | 10 | 0 | 4.94 | 0 | 0 | 10 | 10 | 10 | 10 | 10 | 10 | 0 | 10 | 10 | 10 |
| | UPF Parojan C-2 | 0 | 0 | 0 | 0 | 0 | 25 | 0 | 25 | 0 | 25 | 25 | 25 | 25 | 25 | 25 | 25 |
| | UPF Samlara | 0 | 25 | 0 | 12.35 | 0 | 0 | 25 | 25 | 25 | 25 | 25 | 25 | 0 | 25 | 25 | 25 |
| **Total** | | **2327** | **2515** | **2327** | **1505.08** | **2327** | **2211** | **4842** | **7053** | **4842** | **7053** | **6923** | **4556** | **2086** | **7053** | **7053** | **7053** |

## Site Wise cost (Rs.in Lakhs) of proposal area in Natural Landscape in Himachal Pradesh

| Division | Sitename | Year | | | | | | | | | Year | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Phase I (Rs.in Lakhs) | | | | | | | | | Phase II (Rs. in Lakhs) | | | | | Total (Rs. In lakhs) | | Grand Total (Rs. in Lakhs) |
| | | I | II | III | IV | | V | | Total | | VI | VII | VIII | IX | Total | | | |
| | | Est | Est | Est | Est | Main | Est | Main | Est | Main | Main | Main | Main | Main | Main | Est | Main | |
| **Anni** | Ani at Luheri | 0 | 1.45 | 14 | 7.41 | 0 | 0 | 3.88 | 22.85 | 3.88 | 2.07 | 1.61 | 0.06 | 0 | 3.74 | 22.85 | 7.62 | 30.47 |
| | Badari Dugh | 0 | 0.84 | 12.48 | 6.39 | 0 | 0 | 3.98 | 19.71 | 3.98 | 3.19 | 2.61 | 0.86 | 0 | 6.66 | 19.71 | 10.64 | 30.35 |
| | Badari Dugh | 1.45 | 14 | 7.41 | 0 | 3.88 | 0 | 2.07 | 22.85 | 5.95 | 1.61 | 0.06 | 0 | 0 | 1.67 | 22.85 | 7.62 | 30.47 |
| | Bangu Jhaker | 0 | 1.45 | 14 | 7.41 | 0 | 0 | 3.88 | 22.85 | 3.88 | 2.07 | 1.61 | 0.06 | 0 | 3.74 | 22.85 | 7.62 | 30.47 |
| | BanguJhakar-1 | 0 | 1 | 14.58 | 7.38 | 0 | 0 | 3.7 | 22.95 | 3.7 | 2.07 | 1.61 | 0.06 | 0 | 3.74 | 22.95 | 7.44 | 30.4 |
| | Beri nalla UPF Nore C-63 | 2.1 | 31.19 | 15.97 | 0 | 9.95 | 0 | 7.97 | 49.27 | 17.92 | 6.54 | 2.15 | 0 | 0 | 8.68 | 49.27 | 26.6 | 75.86 |
| | Bila jan | 2 | 29.16 | 14.75 | 0 | 7.41 | 0 | 4.14 | 45.91 | 11.55 | 3.22 | 0.12 | 0 | 0 | 3.34 | 45.91 | 14.89 | 60.8 |
| | Chalndi Dhar | 0 | 0.79 | 11.92 | 4.94 | 0 | 0 | 3.36 | 17.65 | 3.36 | 2.72 | 2.25 | 0.86 | 0 | 5.83 | 17.65 | 9.19 | 26.83 |
| | Chkadhar (UPF Khalair C-68) | 0 | 0.29 | 2.8 | 1.48 | 0 | 0 | 0.78 | 4.57 | 0.78 | 0.41 | 0.32 | 0.01 | 0 | 0.75 | 4.57 | 1.53 | 6.09 |
| | Jaglandi | 0 | 2 | 29.16 | 14.75 | 0 | 0 | 7.41 | 45.91 | 7.41 | 4.14 | 3.22 | 0.12 | 0 | 7.48 | 45.91 | 14.89 | 60.8 |
| | Jaglandi | 2.9 | 27.99 | 14.82 | 0 | 7.76 | 0 | 4.14 | 45.71 | 11.91 | 3.22 | 0.12 | 0 | 0 | 3.34 | 45.71 | 15.25 | 60.95 |
| | Jimna Dogri | 0 | 1.8 | 26.24 | 13.28 | 0 | 0 | 6.67 | 41.32 | 6.67 | 3.73 | 2.9 | 0.1 | 0 | 6.73 | 41.32 | 13.4 | 54.72 |
| | Khegsu | 0 | 0 | 3.97 | 59.58 | 0 | 24.7 | 0 | 88.25 | 0 | 16.78 | 13.58 | 11.26 | 4.29 | 45.91 | 88.25 | 45.91 | 134.16 |
| | Kotera Kod (UPF Shedric) | 0 | 0 | 16.66 | 160.95 | 0 | 85.19 | 0 | 262.81 | 0 | 44.64 | 23.82 | 18.52 | 0.67 | 87.65 | 262.81 | 87.65 | 350.45 |
| | Kukar Jan (UPF | 0 | 0 | 5.96 | 89.38 | 0 | 37.04 | 0 | 132.38 | 0 | 25.17 | 20.37 | 16.89 | 6.44 | 68.87 | 132.38 | 68.87 | 201.24 |

| Division | Sitename | Year | | | | | | | | | Year | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Phase I (Rs.in Lakhs) | | | | | | | | | Phase II (Rs. in Lakhs) | | | | | Total (Rs. In lakhs) | | Grand Total (Rs. in Lakhs) |
| | | I | II | III | IV | | V | | Total | | VI | VII | VIII | IX | Total | | | |
| | | Est | Est | Est | Est | Main | Est | Main | Est | Main | Main | Main | Main | Main | Main | Est | Main | |
| | Nither) | | | | | | | | | | | | | | | | | |
| | Luna Lot | 0 | 1.8 | 26.24 | 13.28 | 0 | 0 | 6.67 | 41.32 | 6.67 | 3.73 | 2.9 | 0.1 | 0 | 6.73 | 41.32 | 13.4 | 54.72 |
| | Patohardhar | 0 | 2.9 | 27.99 | 14.82 | 0 | 0 | 7.76 | 45.71 | 7.76 | 4.14 | 3.22 | 0.12 | 0 | 7.48 | 45.71 | 15.24 | 60.95 |
| | Ropri | 0 | 1.26 | 17.91 | 7.76 | 0 | 0 | 5.14 | 26.93 | 5.14 | 4.15 | 3.44 | 1.29 | 0 | 8.87 | 26.93 | 14.01 | 40.94 |
| | UPF Dagani | 0 | 1.45 | 14 | 7.41 | 0 | 0 | 3.88 | 22.85 | 3.88 | 2.07 | 1.61 | 0.06 | 0 | 3.74 | 22.85 | 7.62 | 30.47 |
| | UPF Jhangi C-32 (Thunga Jan) | 0 | 1.5 | 21.87 | 11.06 | 0 | 0 | 5.56 | 34.43 | 5.56 | 3.11 | 2.42 | 0.09 | 0 | 5.61 | 34.43 | 11.17 | 45.6 |
| **Bilaspur** | Bilaspur | 0 | 0 | 1.26 | 18.72 | 0 | 9.58 | 0 | 29.56 | 0 | 5.97 | 4.78 | 3.92 | 1.29 | 15.96 | 29.56 | 15.96 | 45.52 |
| | C-1 Osal jamun | 0 | 4.76 | 71.5 | 29.64 | 0 | 0 | 20.14 | 105.9 | 20.14 | 16.29 | 13.51 | 5.15 | 0 | 34.96 | 105.9 | 55.1 | 161 |
| | C-10 Raehera -1 | 0 | 0.79 | 11.92 | 4.94 | 0 | 0 | 3.36 | 17.65 | 3.36 | 2.72 | 2.25 | 0.86 | 0 | 5.83 | 17.65 | 9.19 | 26.83 |
| | C-17 Chaugan | 6.74 | 22.85 | 10.15 | 0 | 7.53 | 0 | 4.69 | 39.75 | 12.22 | 3.93 | 1.55 | 0 | 0 | 5.47 | 39.75 | 17.69 | 57.44 |
| | C-17 Chaugan | 1.87 | 6.35 | 2.82 | 0 | 2.09 | 0 | 1.3 | 11.04 | 3.39 | 1.09 | 0.43 | 0 | 0 | 1.52 | 11.04 | 4.91 | 15.95 |
| | C-35 Tange Walla | 3.75 | 12.7 | 5.64 | 0 | 4.18 | 0 | 2.6 | 22.08 | 6.79 | 2.18 | 0.86 | 0 | 0 | 3.04 | 22.08 | 9.83 | 31.91 |
| | C-43 Gadyana | 3.75 | 12.7 | 5.64 | 0 | 4.18 | 0 | 2.6 | 22.08 | 6.79 | 2.18 | 0.86 | 0 | 0 | 3.04 | 22.08 | 9.83 | 31.91 |
| | C-48 Thunj | 0.42 | 6.24 | 3.19 | 0 | 1.99 | 0 | 1.59 | 9.85 | 3.58 | 1.31 | 0.43 | 0 | 0 | 1.74 | 9.85 | 5.32 | 15.17 |
| | C-49 Kathiun | 2.85 | 42.42 | 21.72 | 0 | 13.53 | 0 | 10.84 | 67 | 24.36 | 8.89 | 2.92 | 0 | 0 | 11.81 | 67 | 36.17 | 103.18 |
| | C-9 Tihara | 0.4 | 5.96 | 2.47 | 0 | 1.68 | 0 | 1.36 | 8.83 | 3.04 | 1.13 | 0.43 | 0 | 0 | 1.56 | 8.83 | 4.6 | 13.42 |

| Division | Sitename | Year | | | | | | | | | Year | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Phase I (Rs.in Lakhs) | | | | | | | | | Phase II (Rs. in Lakhs) | | | | | Total (Rs. In lakhs) | | Grand Total (Rs. in Lakhs) |
| | | I | II | III | IV | | V | | Total | | VI | VII | VIII | IX | Total | | | |
| | | Est | Est | Est | Est | Main | Est | Main | Est | Main | Main | Main | Main | Main | Main | Est | Main | |
| | C2 Jangla | 0 | 0 | 4.62 | 68.62 | 0 | 35.14 | 0 | 108.39 | 0 | 21.88 | 17.53 | 14.38 | 4.72 | 58.52 | 108.39 | 58.52 | 166.9 |
| | C3 (a) Nala Ka Sidh | 0 | 0 | 7.54 | 113.21 | 0 | 46.92 | 0 | 167.68 | 0 | 31.88 | 25.8 | 21.39 | 8.16 | 87.23 | 167.68 | 87.23 | 254.91 |
| | C4 (1) Surphat | 2.1 | 31.19 | 15.97 | 0 | 9.95 | 0 | 7.97 | 49.27 | 17.92 | 6.54 | 2.15 | 0 | 0 | 8.68 | 49.27 | 26.6 | 75.86 |
| | C6C Jhoulla | 0 | 5.56 | 83.42 | 34.58 | 0 | 0 | 23.49 | 123.55 | 23.49 | 19.01 | 15.76 | 6.01 | 0 | 40.78 | 123.55 | 64.27 | 187.83 |
| | Dahad | 1.75 | 26.22 | 10.87 | 0 | 7.38 | 0 | 5.97 | 38.83 | 13.36 | 4.95 | 1.89 | 0 | 0 | 6.84 | 38.83 | 20.2 | 59.03 |
| | DPF (9a) Chalheli | 0 | 0 | 6.3 | 93.58 | 0 | 47.92 | 0 | 147.8 | 0 | 29.84 | 23.91 | 19.61 | 6.44 | 79.79 | 147.8 | 79.79 | 227.59 |
| | DPF Balghar | 0 | 4.29 | 64.35 | 26.67 | 0 | 0 | 18.12 | 95.31 | 18.12 | 14.66 | 12.16 | 4.64 | 0 | 31.46 | 95.31 | 49.58 | 144.9 |
| | DPF Baryanle | 6.74 | 22.85 | 10.15 | 0 | 7.53 | 0 | 4.69 | 39.75 | 12.22 | 3.93 | 1.55 | 0 | 0 | 5.47 | 39.75 | 17.69 | 57.44 |
| | DPF Bathrin | 7.49 | 25.39 | 11.28 | 0 | 8.37 | 0 | 5.21 | 44.16 | 13.57 | 4.36 | 1.72 | 0 | 0 | 6.08 | 44.16 | 19.65 | 63.82 |
| | DPF Birewali | 2.1 | 29.84 | 12.93 | 0 | 8.57 | 0 | 6.91 | 44.88 | 15.48 | 5.73 | 2.15 | 0 | 0 | 7.88 | 44.88 | 23.36 | 68.24 |
| | DPF C-17 Chaughan | 1.26 | 17.91 | 7.76 | 0 | 5.14 | 0 | 4.15 | 26.93 | 9.29 | 3.44 | 1.29 | 0 | 0 | 4.73 | 26.93 | 14.02 | 40.94 |
| | DPF C-3a Panyala | 1.26 | 18.72 | 9.58 | 0 | 5.97 | 0 | 4.78 | 29.56 | 10.75 | 3.92 | 1.29 | 0 | 0 | 5.21 | 29.56 | 15.96 | 45.52 |
| | DPF C-5 (A) Palti | 3.36 | 49.91 | 25.56 | 0 | 15.91 | 0 | 12.75 | 78.83 | 28.66 | 10.46 | 3.44 | 0 | 0 | 13.89 | 78.83 | 42.55 | 121.38 |
| | DPF C-6 Anti | 3.75 | 12.7 | 5.64 | 0 | 4.18 | 0 | 2.6 | 22.08 | 6.79 | 2.18 | 0.86 | 0 | 0 | 3.04 | 22.08 | 9.83 | 31.91 |
| | DPF C-9 trontra | 1.19 | 17.88 | 7.41 | 0 | 5.03 | 0 | 4.07 | 26.48 | 9.11 | 3.38 | 1.29 | 0 | 0 | 4.67 | 26.48 | 13.78 | 40.25 |
| | DPF Gatol | 1.19 | 17.88 | 7.41 | 0 | 5.03 | 0 | 4.07 | 26.48 | 9.11 | 3.38 | 1.29 | 0 | 0 | 4.67 | 26.48 | 13.78 | 40.25 |

| Division | Sitename | Year | | | | | | | | | Year | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Phase I (Rs.in Lakhs) | | | | | | | | | Phase II (Rs. in Lakhs) | | | | | Total (Rs. In lakhs) | | Grand Total (Rs. in Lakhs) |
| | | I | II | III | IV | | V | | Total | | VI | VII | VIII | IX | Total | | | |
| | | Est | Est | Est | Est | Main | Est | Main | Est | Main | Main | Main | Main | Main | Main | Est | Main | |
| | C4 (6) Randoh | | | | | | | | | | | | | | | | | |
| | DPF Kharli | 3.75 | 12.7 | 5.64 | 0 | 4.18 | 0 | 2.6 | 22.08 | 6.79 | 2.18 | 0.86 | 0 | 0 | 3.04 | 22.08 | 9.83 | 31.91 |
| | DPF Kothi | 1.19 | 17.88 | 7.41 | 0 | 5.03 | 0 | 4.07 | 26.48 | 9.11 | 3.38 | 1.29 | 0 | 0 | 4.67 | 26.48 | 13.78 | 40.25 |
| | DPF Malagan - 1 | 7.09 | 24.57 | 10.81 | 0 | 7.94 | 0 | 5.01 | 42.47 | 12.94 | 4.27 | 1.72 | 0 | 0 | 5.99 | 42.47 | 18.93 | 61.4 |
| | DPF Maleta | 1.01 | 14.97 | 7.67 | 0 | 4.77 | 0 | 3.83 | 23.65 | 8.6 | 3.14 | 1.03 | 0 | 0 | 4.17 | 23.65 | 12.77 | 36.41 |
| | DPF Malhot | 3.75 | 12.7 | 5.64 | 0 | 4.18 | 0 | 2.6 | 22.08 | 6.79 | 2.18 | 0.86 | 0 | 0 | 3.04 | 22.08 | 9.83 | 31.91 |
| | DPF Rattanpur | 1.26 | 18.72 | 9.58 | 0 | 5.97 | 0 | 4.78 | 29.56 | 10.75 | 3.92 | 1.29 | 0 | 0 | 5.21 | 29.56 | 15.96 | 45.52 |
| | DPF Sandhla | 1.19 | 17.88 | 7.41 | 0 | 5.03 | 0 | 4.07 | 26.48 | 9.11 | 3.38 | 1.29 | 0 | 0 | 4.67 | 26.48 | 13.78 | 40.25 |
| | Kunihar | 0 | 0 | 2.17 | 20.99 | 0 | 11.11 | 0 | 34.28 | 0 | 5.82 | 3.11 | 2.42 | 0.09 | 11.43 | 34.28 | 11.43 | 45.71 |
| | UF Bargaon | 5.62 | 19.04 | 8.46 | 0 | 6.28 | 0 | 3.9 | 33.12 | 10.18 | 3.27 | 1.29 | 0 | 0 | 4.56 | 33.12 | 14.74 | 47.86 |
| | UF Dohak | 7.49 | 25.39 | 11.28 | 0 | 8.37 | 0 | 5.21 | 44.16 | 13.57 | 4.36 | 1.72 | 0 | 0 | 6.08 | 44.16 | 19.65 | 63.82 |
| | UPF Chanarda | 1.59 | 23.83 | 9.88 | 0 | 6.71 | 0 | 5.43 | 35.3 | 12.14 | 4.5 | 1.72 | 0 | 0 | 6.22 | 35.3 | 18.36 | 53.67 |
| | UPF Baloh | 1.59 | 23.83 | 9.88 | 0 | 6.71 | 0 | 5.43 | 35.3 | 12.14 | 4.5 | 1.72 | 0 | 0 | 6.22 | 35.3 | 18.36 | 53.67 |
| | UPF Baner | 1.26 | 18.72 | 9.58 | 0 | 5.97 | 0 | 4.78 | 29.56 | 10.75 | 3.92 | 1.29 | 0 | 0 | 5.21 | 29.56 | 15.96 | 45.52 |
| | UPF Bharsara | 1.43 | 21.45 | 8.89 | 0 | 6.04 | 0 | 4.89 | 31.77 | 10.93 | 4.05 | 1.55 | 0 | 0 | 5.6 | 31.77 | 16.53 | 48.3 |
| | UPF Brota Dabla ( nag Thakura | 5.62 | 19.04 | 8.46 | 0 | 6.28 | 0 | 3.9 | 33.12 | 10.18 | 3.27 | 1.29 | 0 | 0 | 4.56 | 33.12 | 14.74 | 47.86 |

| Division | Sitename | Year | | | | | | | | | Year | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Phase I (Rs.in Lakhs) | | | | | | | | | Phase II (Rs. in Lakhs) | | | | | Total (Rs. In lakhs) | | Grand Total (Rs. in Lakhs) |
| | | I | II | III | IV | | V | | Total | | VI | VII | VIII | IX | Total | | | |
| | | Est | Est | Est | Est | Main | Est | Main | Est | Main | Main | Main | Main | Main | Main | Est | Main | |
| | Gola) | | | | | | | | | | | | | | | | | |
| | UPF Chalela | 1.26 | 18.72 | 9.58 | 0 | 5.97 | 0 | 4.78 | 29.56 | 10.75 | 3.92 | 1.29 | 0 | 0 | 5.21 | 29.56 | 15.96 | 45.52 |
| | UPF Chalela | 1.26 | 18.72 | 9.58 | 0 | 5.97 | 0 | 4.78 | 29.56 | 10.75 | 3.92 | 1.29 | 0 | 0 | 5.21 | 29.56 | 15.96 | 45.52 |
| | UPF Chehri | 0 | 1.19 | 17.88 | 7.41 | 0 | 0 | 5.03 | 26.48 | 5.03 | 4.07 | 3.38 | 1.29 | 0 | 8.74 | 26.48 | 13.77 | 40.25 |
| | UPF Gwalthai | 0 | 0 | 6.35 | 95.33 | 0 | 39.51 | 0 | 141.2 | 0 | 26.85 | 21.72 | 18.02 | 6.87 | 73.46 | 141.2 | 73.46 | 214.66 |
| | UPF Jalagri | 0 | 0.84 | 12.48 | 6.39 | 0 | 0 | 3.98 | 19.71 | 3.98 | 3.19 | 2.61 | 0.86 | 0 | 6.66 | 19.71 | 10.64 | 30.35 |
| | UPF kadoh | 0 | 0 | 28.09 | 95.21 | 0 | 42.31 | 0 | 165.62 | 0 | 31.38 | 19.52 | 16.36 | 6.44 | 73.7 | 165.62 | 73.7 | 239.32 |
| | UPF Khurani | 0.79 | 11.92 | 4.94 | 0 | 3.36 | 0 | 2.72 | 17.65 | 6.07 | 2.25 | 0.86 | 0 | 0 | 3.11 | 17.65 | 9.18 | 26.83 |
| | UPF Kulziar II | 3.75 | 12.7 | 5.64 | 0 | 4.18 | 0 | 2.6 | 22.08 | 6.79 | 2.18 | 0.86 | 0 | 0 | 3.04 | 22.08 | 9.83 | 31.91 |
| | UPF Lehri | 1.19 | 17.88 | 7.41 | 0 | 5.03 | 0 | 4.07 | 26.48 | 9.11 | 3.38 | 1.29 | 0 | 0 | 4.67 | 26.48 | 13.78 | 40.25 |
| | UPF Nakrana | 1.19 | 17.88 | 7.41 | 0 | 5.03 | 0 | 4.07 | 26.48 | 9.11 | 3.38 | 1.29 | 0 | 0 | 4.67 | 26.48 | 13.78 | 40.25 |
| | UPF Neemawali | 0.95 | 14.3 | 5.93 | 0 | 4.03 | 0 | 3.26 | 21.18 | 7.29 | 2.7 | 1.03 | 0 | 0 | 3.73 | 21.18 | 11.02 | 32.2 |
| | UPF Palela | 1.19 | 17.88 | 7.41 | 0 | 5.03 | 0 | 4.07 | 26.48 | 9.11 | 3.38 | 1.29 | 0 | 0 | 4.67 | 26.48 | 13.78 | 40.25 |
| | UPF Shira | 3.55 | 12.28 | 5.4 | 0 | 3.97 | 0 | 2.5 | 21.23 | 6.47 | 2.14 | 0.86 | 0 | 0 | 3 | 21.23 | 9.47 | 30.7 |
| **Hamirpur** | Choa | 1.26 | 18.72 | 9.58 | 0 | 5.97 | 0 | 4.78 | 29.56 | 10.75 | 3.92 | 1.29 | 0 | 0 | 5.21 | 29.56 | 15.96 | 45.52 |
| | Kathiana | 1.59 | 23.83 | 9.88 | 0 | 6.71 | 0 | 5.43 | 35.3 | 12.14 | 4.5 | 1.72 | 0 | 0 | 6.22 | 35.3 | 18.36 | 53.67 |
| | P 19 Kharal | 0 | 0 | 6.72 | 99.82 | 0 | 51.12 | 0 | 157.65 | 0 | 31.83 | 25.5 | 20.92 | 6.87 | 85.11 | 157.65 | 85.11 | 242.77 |
| | P 21 Bijhari | 1.68 | 24.95 | 12.78 | 0 | 7.96 | 0 | 6.38 | 39.41 | 14.33 | 5.23 | 1.72 | 0 | 0 | 6.95 | 39.41 | 21.28 | 60.69 |
| | P 25 | 0 | 0 | 4.2 | 62.39 | 0 | 31.9 | 0 | 98.53 | 0 | 19.89 | 15.94 | 13.07 | 4.29 | 53.2 | 98.53 | 53.2 | 151.73 |

| Division | Sitename | Year | | | | | | | | | Year | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Phase I (Rs.in Lakhs) | | | | | | | | | Phase II (Rs. in Lakhs) | | | | | Total (Rs. In lakhs) | | Grand Total (Rs. in Lakhs) |
| | | I | II | III | IV | | V | | Total | | VI | VII | VIII | IX | Total | | | |
| | | Est | Est | Est | Est | Main | Est | Main | Est | Main | Main | Main | Main | Main | Main | Est | Main | |
| | Khahsora | | | | | | 5 | | | | | | | | | | | |
| | P-11 Sathrion | 1.26 | 18.72 | 9.58 | 0 | 5.97 | 0 | 4.78 | 29.56 | 10.75 | 3.92 | 1.29 | 0 | 0 | 5.21 | 29.56 | 15.96 | 45.52 |
| | P-14 Relli C5b | 2.1 | 31.19 | 15.97 | 0 | 9.95 | 0 | 7.97 | 49.27 | 17.92 | 6.54 | 2.15 | 0 | 0 | 8.68 | 49.27 | 26.6 | 75.86 |
| | P-16 Dhar Sidh C-3c | 0 | 0 | 6.3 | 93.58 | 0 | 47.92 | 0 | 147.8 | 0 | 29.84 | 23.91 | 19.61 | 6.44 | 79.79 | 147.8 | 79.79 | 227.59 |
| | P-16 Dhar Sidh C5a | 1.26 | 18.72 | 9.58 | 0 | 5.97 | 0 | 4.78 | 29.56 | 10.75 | 3.92 | 1.29 | 0 | 0 | 5.21 | 29.56 | 15.96 | 45.52 |
| | P-17 Samella C2c | 1.26 | 18.72 | 9.58 | 0 | 5.97 | 0 | 4.78 | 29.56 | 10.75 | 3.92 | 1.29 | 0 | 0 | 5.21 | 29.56 | 15.96 | 45.52 |
| | P-22 Gutiana Batiana | 1.68 | 24.95 | 12.78 | 0 | 7.96 | 0 | 6.38 | 39.41 | 14.33 | 5.23 | 1.72 | 0 | 0 | 6.95 | 39.41 | 21.28 | 60.69 |
| | P-24 Ghangot C1a | 1.26 | 18.72 | 9.58 | 0 | 5.97 | 0 | 4.78 | 29.56 | 10.75 | 3.92 | 1.29 | 0 | 0 | 5.21 | 29.56 | 15.96 | 45.52 |
| | Put Aua Dugar | 1.68 | 24.95 | 12.78 | 0 | 7.96 | 0 | 6.38 | 39.41 | 14.33 | 5.23 | 1.72 | 0 | 0 | 6.95 | 39.41 | 21.28 | 60.69 |
| | U 78 Sulhori | 0.84 | 12.48 | 6.39 | 0 | 3.98 | 0 | 3.19 | 19.71 | 7.17 | 2.61 | 0.86 | 0 | 0 | 3.47 | 19.71 | 10.64 | 30.35 |
| | U 81 Kathiana | 0.84 | 12.48 | 6.39 | 0 | 3.98 | 0 | 3.19 | 19.71 | 7.17 | 2.61 | 0.86 | 0 | 0 | 3.47 | 19.71 | 10.64 | 30.35 |
| | U-106 Gharyani Jalta | 1.26 | 18.72 | 9.58 | 0 | 5.97 | 0 | 4.78 | 29.56 | 10.75 | 3.92 | 1.29 | 0 | 0 | 5.21 | 29.56 | 15.96 | 45.52 |
| **Karsog** | D 279 Nadaun-1 | 0 | 2.94 | 43.67 | 22.36 | 0 | 0 | 13.93 | 68.97 | 13.93 | 11.16 | 9.15 | 3.01 | 0 | 23.31 | 68.97 | 37.24 | 106.21 |
| | D-127 Sanach | 1.26 | 18.72 | 9.58 | 0 | 5.97 | 0 | 4.78 | 29.56 | 10.75 | 3.92 | 1.29 | 0 | 0 | 5.21 | 29.56 | 15.96 | 45.52 |
| | D-127 | 8.32 | 67.23 | 10.47 | 0 | 6.66 | 0 | 4.35 | 86.02 | 11.01 | 1.31 | 0 | 0 | 0 | 1.31 | 86.02 | 12.32 | 98.34 |

| Division | Sitename | Year | | | | | | | | | Year | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Phase I (Rs.in Lakhs) | | | | | | | | | Phase II (Rs. in Lakhs) | | | | | Total (Rs. In lakhs) | | Grand Total (Rs. in Lakhs) |
| | | I | II | III | IV | | V | | Total | | VI | VII | VIII | IX | Total | | | |
| | | Est | Est | Est | Est | Main | Est | Main | Est | Main | Main | Main | Main | Main | Main | Est | Main | |
| | Sanach-1 | | | | | | | | | | | | | | | | | |
| | D-184 Maha Dev Banoni | 0 | 0 | 2.1 | 31.19 | 0 | 15.97 | 0 | 49.27 | 0 | 9.95 | 7.97 | 6.54 | 2.15 | 26.6 | 49.27 | 26.6 | 75.86 |
| | D-193 Katach C-III | 3.62 | 34.99 | 18.52 | 0 | 9.7 | 0 | 5.18 | 57.13 | 14.88 | 4.03 | 0.15 | 0 | 0 | 4.17 | 57.13 | 19.05 | 76.19 |
| | D-203 Thach | 0 | 0 | 2.9 | 27.99 | 0 | 14.82 | 0 | 45.71 | 0 | 7.76 | 4.14 | 3.22 | 0.12 | 15.24 | 45.71 | 15.24 | 60.95 |
| | D-203 Thach-1 | 0 | 4.35 | 41.99 | 22.22 | 0 | 0 | 11.64 | 68.56 | 11.64 | 6.21 | 4.83 | 0.17 | 0 | 11.22 | 68.56 | 22.86 | 91.42 |
| | D-233 Richhani | 0 | 0 | 2.1 | 31.19 | 0 | 15.97 | 0 | 49.27 | 0 | 9.95 | 7.97 | 6.54 | 2.15 | 26.6 | 49.27 | 26.6 | 75.86 |
| | D-252 Naganal | 1.26 | 18.72 | 9.58 | 0 | 5.97 | 0 | 4.78 | 29.56 | 10.75 | 3.92 | 1.29 | 0 | 0 | 5.21 | 29.56 | 15.96 | 45.52 |
| | D-257 Jagal | 0 | 0 | 7.4 | 59.76 | 0 | 9.3 | 0 | 76.46 | 0 | 5.92 | 3.86 | 1.17 | 0 | 10.95 | 76.46 | 10.95 | 87.41 |
| | D-257 Jagal | 2.9 | 27.99 | 14.82 | 0 | 7.76 | 0 | 4.14 | 45.71 | 11.91 | 3.22 | 0.12 | 0 | 0 | 3.34 | 45.71 | 15.25 | 60.95 |
| | D-259 | 0 | 0 | 1.51 | 22.46 | 0 | 11.5 | 0 | 35.47 | 0 | 7.16 | 5.74 | 4.71 | 1.55 | 19.15 | 35.47 | 19.15 | 54.62 |
| | D-260 Lotla | 2.61 | 25.19 | 13.33 | 0 | 6.99 | 0 | 3.73 | 41.14 | 10.71 | 2.9 | 0.1 | 0 | 0 | 3 | 41.14 | 13.71 | 54.85 |
| | D-270 Ruhmani | 1.26 | 18.72 | 9.58 | 0 | 5.97 | 0 | 4.78 | 29.56 | 10.75 | 3.92 | 1.29 | 0 | 0 | 5.21 | 29.56 | 15.96 | 45.52 |
| | D-273 Lassi | 0 | 2.9 | 27.99 | 14.82 | 0 | 0 | 7.76 | 45.71 | 7.76 | 4.14 | 3.22 | 0.12 | 0 | 7.48 | 45.71 | 15.24 | 60.95 |
| | D-275 Kathaloo | 2.17 | 20.99 | 11.11 | 0 | 5.82 | 0 | 3.11 | 34.28 | 8.93 | 2.42 | 0.09 | 0 | 0 | 2.5 | 34.28 | 11.43 | 45.71 |
| | D-276 Rucehad | 0 | 0 | 2.17 | 20.99 | 0 | 11.11 | 0 | 34.28 | 0 | 5.82 | 3.11 | 2.42 | 0.09 | 11.43 | 34.28 | 11.43 | 45.71 |
| | D-280 | 0 | 2.1 | 31.19 | 15.97 | 0 | 0 | 9.95 | 49.27 | 9.95 | 7.97 | 6.54 | 2.15 | 0 | 16.65 | 49.27 | 26.6 | 75.86 |

| Division | Sitename | Year | | | | | | | | | Year | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Phase I (Rs.in Lakhs) | | | | | | | | | Phase II (Rs. in Lakhs) | | | | | Total (Rs. In lakhs) | | Grand Total (Rs. in Lakhs) |
| | | I | II | III | IV | | V | | Total | | VI | VII | VIII | IX | Total | | | |
| | | Est | Est | Est | Est | Main | Est | Main | Est | Main | Main | Main | Main | Main | Main | Est | Main | |
| | Nadaun | | | | | | | | | | | | | | | | | |
| | D-283 Raidhar | 0 | 0 | 2.9 | 27.99 | 0 | 14.82 | 0 | 45.71 | 0 | 7.76 | 4.14 | 3.22 | 0.12 | 15.24 | 45.71 | 15.24 | 60.95 |
| | D-296 | 0 | 0 | 2.9 | 27.99 | 0 | 14.82 | 0 | 45.71 | 0 | 7.76 | 4.14 | 3.22 | 0.12 | 15.24 | 45.71 | 15.24 | 60.95 |
| | D-297 Surahi | 1.68 | 24.95 | 12.78 | 0 | 7.96 | 0 | 6.38 | 39.41 | 14.33 | 5.23 | 1.72 | 0 | 0 | 6.95 | 39.41 | 21.28 | 60.69 |
| | D-73 Gharlol C-II | 7.49 | 25.39 | 11.28 | 0 | 8.37 | 0 | 5.21 | 44.16 | 13.57 | 4.36 | 1.72 | 0 | 0 | 6.08 | 44.16 | 19.65 | 63.82 |
| | Karsog | 2.52 | 37.43 | 19.17 | 0 | 11.94 | 0 | 9.56 | 59.12 | 21.5 | 7.84 | 2.58 | 0 | 0 | 10.42 | 59.12 | 31.92 | 91.04 |
| **Kinnaur** | khaia (p/land ) | 2.5 | 36.45 | 18.44 | 0 | 9.26 | 0 | 5.18 | 57.39 | 14.44 | 4.03 | 0.15 | 0 | 0 | 4.17 | 57.39 | 18.61 | 76 |
| | khaia (p/land ) | 0 | 0 | 8.32 | 67.23 | 0 | 10.47 | 0 | 86.02 | 0 | 6.66 | 4.35 | 1.31 | 0 | 12.32 | 86.02 | 12.32 | 98.34 |
| | Kinnaur | 0 | 24.26 | 8.17 | 0 | 5.6 | 0 | 4.14 | 32.43 | 9.74 | 3.22 | 0.12 | 0 | 0 | 3.34 | 32.43 | 13.08 | 45.51 |
| | Lahyok | 7.4 | 59.76 | 9.3 | 0 | 5.92 | 0 | 3.86 | 76.46 | 9.78 | 1.17 | 0 | 0 | 0 | 1.17 | 76.46 | 10.95 | 87.41 |
| | Lahyok | 0 | 24.26 | 8.17 | 0 | 5.6 | 0 | 4.14 | 32.43 | 9.74 | 3.22 | 0.12 | 0 | 0 | 3.34 | 32.43 | 13.08 | 45.51 |
| | Nichar | 0 | 24.26 | 8.17 | 0 | 5.6 | 0 | 4.14 | 32.43 | 9.74 | 3.22 | 0.12 | 0 | 0 | 3.34 | 32.43 | 13.08 | 45.51 |
| | Niglong (vikas nagar) | 1.5 | 21.87 | 11.06 | 0 | 5.56 | 0 | 3.11 | 34.43 | 8.66 | 2.42 | 0.09 | 0 | 0 | 2.5 | 34.43 | 11.16 | 45.6 |
| | Nigul Seri | 2.1 | 29.84 | 12.93 | 0 | 8.57 | 0 | 6.91 | 44.88 | 15.48 | 5.73 | 2.15 | 0 | 0 | 7.88 | 44.88 | 23.36 | 68.24 |
| | Nigul Seri-1 | 0 | 6.47 | 52.29 | 8.14 | 0 | 0 | 5.18 | 66.91 | 5.18 | 3.38 | 1.02 | 0 | 0 | 4.4 | 66.91 | 9.58 | 76.49 |
| | Rurang kanda | 9 | 80.27 | 20.33 | 0 | 14.48 | 0 | 11.34 | 109.6 | 25.82 | 8.6 | 0.44 | 0 | 0 | 9.04 | 109.6 | 34.86 | 144.46 |
| | UPF Tranda | 0 | 1.26 | 18.72 | 9.58 | 0 | 0 | 5.97 | 29.56 | 5.97 | 4.78 | 3.92 | 1.29 | 0 | 9.99 | 29.56 | 15.96 | 45.52 |
| | UPF Thach | 3.7 | 17.16 | 7.57 | 0 | 3.68 | 0 | 2.55 | 28.43 | 6.23 | 1.08 | 0 | 0 | 0 | 1.08 | 28.43 | 7.31 | 35.75 |

| Division | Sitename | Year | | | | | | | | | Year | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Phase I (Rs.in Lakhs) | | | | | | | | | Phase II (Rs. in Lakhs) | | | | | Total (Rs. In lakhs) | | Grand Total (Rs. in Lakhs) |
| | | I | II | III | IV | | V | | Total | | VI | VII | VIII | IX | Total | | | |
| | | Est | Est | Est | Est | Main | Est | Main | Est | Main | Main | Main | Main | Main | Main | Est | Main | |
| **Kotgarh** | Bithal Kanda | 0 | 0.84 | 12.48 | 6.39 | 0 | 0 | 3.98 | 19.71 | 3.98 | 3.19 | 2.61 | 0.86 | 0 | 6.66 | 19.71 | 10.64 | 30.35 |
| | DPF Awar C-31 | 0 | 1.5 | 21.87 | 11.06 | 0 | 0 | 5.56 | 34.43 | 5.56 | 3.11 | 2.42 | 0.09 | 0 | 5.61 | 34.43 | 11.17 | 45.6 |
| | DPF Chhichr C-38 (b) | 1.5 | 21.87 | 11.06 | 0 | 5.56 | 0 | 3.11 | 34.43 | 8.66 | 2.42 | 0.09 | 0 | 0 | 2.5 | 34.43 | 11.16 | 45.6 |
| | DPF Hawan C-45 | 1.26 | 18.72 | 9.58 | 0 | 5.97 | 0 | 4.78 | 29.56 | 10.75 | 3.92 | 1.29 | 0 | 0 | 5.21 | 29.56 | 15.96 | 45.52 |
| | DPF Jhamunda | 2.17 | 20.99 | 11.11 | 0 | 5.82 | 0 | 3.11 | 34.28 | 8.93 | 2.42 | 0.09 | 0 | 0 | 2.5 | 34.28 | 11.43 | 45.71 |
| | DPF Kapu CN-35 | 1.19 | 17.88 | 7.41 | 0 | 5.03 | 0 | 4.07 | 26.48 | 9.11 | 3.38 | 1.29 | 0 | 0 | 4.67 | 26.48 | 13.78 | 40.25 |
| | DPF Manu CN 21 | 0 | 1.26 | 18.72 | 9.58 | 0 | 0 | 5.97 | 29.56 | 5.97 | 4.78 | 3.92 | 1.29 | 0 | 9.99 | 29.56 | 15.96 | 45.52 |
| | DPF Nihari C-49 | 0.84 | 12.48 | 6.39 | 0 | 3.98 | 0 | 3.19 | 19.71 | 7.17 | 2.61 | 0.86 | 0 | 0 | 3.47 | 19.71 | 10.64 | 30.35 |
| | RF Nagkelo C-59 (A) | 1 | 14.58 | 7.38 | 0 | 3.7 | 0 | 2.07 | 22.95 | 5.77 | 1.61 | 0.06 | 0 | 0 | 1.67 | 22.95 | 7.44 | 30.4 |
| | UPF Banahar kandi C233 | 1.26 | 18.72 | 9.58 | 0 | 5.97 | 0 | 4.78 | 29.56 | 10.75 | 3.92 | 1.29 | 0 | 0 | 5.21 | 29.56 | 15.96 | 45.52 |
| | UPF Deha C-207 | 0 | 1.5 | 21.87 | 11.06 | 0 | 0 | 5.56 | 34.43 | 5.56 | 3.11 | 2.42 | 0.09 | 0 | 5.61 | 34.43 | 11.17 | 45.6 |
| | UPF Jarola C-213 | 1.68 | 24.95 | 12.78 | 0 | 7.96 | 0 | 6.38 | 39.41 | 14.33 | 5.23 | 1.72 | 0 | 0 | 6.95 | 39.41 | 21.28 | 60.69 |
| | UPF Khalantu | 0 | 1.26 | 18.72 | 9.58 | 0 | 0 | 5.97 | 29.56 | 5.97 | 4.78 | 3.92 | 1.29 | 0 | 9.99 | 29.56 | 15.96 | 45.52 |

| Division | Sitename | Year | | | | | | | | | Year | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Phase I (Rs.in Lakhs) | | | | | | | | | Phase II (Rs. in Lakhs) | | | | | Total (Rs. In lakhs) | | Grand Total (Rs. in Lakhs) |
| | | I | II | III | IV | | V | | Total | | VI | VII | VIII | IX | Total | | | |
| | | Est | Est | Est | Est | Main | Est | Main | Est | Main | Main | Main | Main | Main | Main | Est | Main | |
| | C-218 | | | | | | | | | | | | | | | | | |
| | UPF Madhawn C-282 | 0 | 1.5 | 21.87 | 11.06 | 0 | 0 | 5.56 | 34.43 | 5.56 | 3.11 | 2.42 | 0.09 | 0 | 5.61 | 34.43 | 11.17 | 45.6 |
| **Kunihar** | DPF 309 Manjyal C-1 | 5.62 | 19.04 | 8.46 | 0 | 6.28 | 0 | 3.9 | 33.12 | 10.18 | 3.27 | 1.29 | 0 | 0 | 4.56 | 33.12 | 14.74 | 47.86 |
| | DPF 309 Manjyal C-1 | 0 | 1.26 | 17.91 | 7.76 | 0 | 0 | 5.14 | 26.93 | 5.14 | 4.15 | 3.44 | 1.29 | 0 | 8.87 | 26.93 | 14.01 | 40.94 |
| | DPF 77 Kangu C-1B | 0 | 5.62 | 19.04 | 8.46 | 0 | 0 | 6.28 | 33.12 | 6.28 | 3.9 | 3.27 | 1.29 | 0 | 8.46 | 33.12 | 14.74 | 47.86 |
| | DPF Daho Ki Dhar, C-6 | 0 | 5.62 | 19.04 | 8.46 | 0 | 0 | 6.28 | 33.12 | 6.28 | 3.9 | 3.27 | 1.29 | 0 | 8.46 | 33.12 | 14.74 | 47.86 |
| | DPF Sharon | 0 | 31.84 | 107.91 | 47.95 | 0 | 0 | 35.57 | 187.7 | 35.57 | 22.12 | 18.54 | 7.3 | 0 | 47.96 | 187.7 | 83.53 | 271.23 |
| | Kunihar | 7.49 | 25.39 | 11.28 | 0 | 8.37 | 0 | 5.21 | 44.16 | 13.57 | 4.36 | 1.72 | 0 | 0 | 6.08 | 44.16 | 19.65 | 63.82 |
| | Shilru DPF | 0 | 2.17 | 20.99 | 11.11 | 0 | 0 | 5.82 | 34.28 | 5.82 | 3.11 | 2.42 | 0.09 | 0 | 5.61 | 34.28 | 11.43 | 45.71 |
| | U-344 Chyale Ki Dhar | 0 | 5.62 | 19.04 | 8.46 | 0 | 0 | 6.28 | 33.12 | 6.28 | 3.9 | 3.27 | 1.29 | 0 | 8.46 | 33.12 | 14.74 | 47.86 |
| | U-346 Kail | 0 | 5.62 | 19.04 | 8.46 | 0 | 0 | 6.28 | 33.12 | 6.28 | 3.9 | 3.27 | 1.29 | 0 | 8.46 | 33.12 | 14.74 | 47.86 |
| | U-387 Chatiud | 0 | 5.62 | 19.04 | 8.46 | 0 | 0 | 6.28 | 33.12 | 6.28 | 3.9 | 3.27 | 1.29 | 0 | 8.46 | 33.12 | 14.74 | 47.86 |
| | UPF 305KoKhari | 0 | 3.75 | 12.7 | 5.64 | 0 | 0 | 4.18 | 22.08 | 4.18 | 2.6 | 2.18 | 0.86 | 0 | 5.64 | 22.08 | 9.82 | 31.91 |
| | UPF 334 Ladech West | 3.75 | 12.7 | 5.64 | 0 | 4.18 | 0 | 2.6 | 22.08 | 6.79 | 2.18 | 0.86 | 0 | 0 | 3.04 | 22.08 | 9.83 | 31.91 |

| Division | Sitename | Year | | | | | | | | | Year | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Phase I (Rs.in Lakhs) | | | | | | | | | Phase II (Rs. in Lakhs) | | | | | Total (Rs. In lakhs) | | Grand Total (Rs. in Lakhs) |
| | | I | II | III | IV | | V | | Total | | VI | VII | VIII | IX | Total | | | |
| | | Est | Est | Est | Est | Main | Est | Main | Est | Main | Main | Main | Main | Main | Main | Est | Main | |
| | UPF Dochi | 0 | 5.62 | 19.04 | 8.46 | 0 | 0 | 6.28 | 33.12 | 6.28 | 3.9 | 3.27 | 1.29 | 0 | 8.46 | 33.12 | 14.74 | 47.86 |
| **Nachan** | Baneshidhar | 0 | 3 | 43.74 | 22.13 | 0 | 0 | 11.11 | 68.86 | 11.11 | 6.21 | 4.83 | 0.17 | 0 | 11.22 | 68.86 | 22.33 | 91.19 |
| | Bharoon-1 | 0 | 4.35 | 41.99 | 22.22 | 0 | 0 | 11.64 | 68.56 | 11.64 | 6.21 | 4.83 | 0.17 | 0 | 11.22 | 68.56 | 22.86 | 91.42 |
| | Bhella | 0 | 4.35 | 41.99 | 22.22 | 0 | 0 | 11.64 | 68.56 | 11.64 | 6.21 | 4.83 | 0.17 | 0 | 11.22 | 68.56 | 22.86 | 91.42 |
| | Bhoombhai site | 0 | 3.5 | 51.03 | 25.82 | 0 | 0 | 12.96 | 80.34 | 12.96 | 7.25 | 5.64 | 0.2 | 0 | 13.09 | 80.34 | 26.05 | 106.39 |
| | Malach | 0 | 3 | 43.74 | 22.13 | 0 | 0 | 11.11 | 68.86 | 11.11 | 6.21 | 4.83 | 0.17 | 0 | 11.22 | 68.86 | 22.33 | 91.19 |
| | Nachan | 0 | 0 | 10.08 | 149.73 | 0 | 76.68 | 0 | 236.48 | 0 | 47.74 | 38.25 | 31.37 | 10.31 | 127.67 | 236.48 | 127.67 | 364.15 |
| | Nachan -2 | 0 | 4 | 58.32 | 29.5 | 0 | 0 | 14.81 | 91.82 | 14.81 | 8.28 | 6.44 | 0.23 | 0 | 14.96 | 91.82 | 29.77 | 121.59 |
| | Nachan -2 | 0 | 4.5 | 65.61 | 33.19 | 0 | 0 | 16.67 | 103.3 | 16.67 | 9.32 | 7.25 | 0.26 | 0 | 16.83 | 103.3 | 33.5 | 136.79 |
| **Nalagarh** | Chikni Khad | 7.94 | 119.17 | 49.39 | 0 | 33.56 | 0 | 27.15 | 176.5 | 60.72 | 22.52 | 8.59 | 0 | 0 | 31.11 | 176.5 | 91.83 | 268.33 |
| | Chikni Khad (2) | 0 | 0 | 7.94 | 119.17 | 0 | 49.39 | 0 | 176.5 | 0 | 33.56 | 27.15 | 22.52 | 8.59 | 91.83 | 176.5 | 91.83 | 268.33 |
| | Chikni Khad (3) | 0 | 9.53 | 143 | 59.27 | 0 | 0 | 40.28 | 211.8 | 40.28 | 32.58 | 27.03 | 10.31 | 0 | 69.92 | 211.8 | 110.2 | 321.99 |
| | D-168 Bhalwa, Salhaar and taller | 0 | 3.75 | 12.7 | 5.64 | 0 | 0 | 4.18 | 22.08 | 4.18 | 2.6 | 2.18 | 0.86 | 0 | 5.64 | 22.08 | 9.82 | 31.91 |
| | D-169 Talli | 0 | 1.26 | 18.72 | 9.58 | 0 | 0 | 5.97 | 29.56 | 5.97 | 4.78 | 3.92 | 1.29 | 0 | 9.99 | 29.56 | 15.96 | 45.52 |
| | Gambar, Gam rola Khad | 0 | 16.79 | 238.74 | 103.48 | 0 | 0 | 68.57 | 359.01 | 68.57 | 55.3 | 45.84 | 17.18 | 0 | 118.32 | 359.01 | 186.89 | 545.9 |
| | Gamber, Kuwaj Khad | 7.56 | 112.29 | 57.51 | 0 | 35.81 | 0 | 28.69 | 177.36 | 64.49 | 23.53 | 7.73 | 0 | 0 | 31.26 | 177.36 | 95.75 | 273.11 |
| | Gamber, | 0 | 9.24 | 131.31 | 56.91 | 0 | 0 | 37.71 | 197.46 | 37.71 | 30.42 | 25.21 | 9.45 | 0 | 65.08 | 197.46 | 102.79 | 300.25 |

| Division | Sitename | Year | | | | | | | | | Year | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Phase I (Rs.in Lakhs) | | | | | | | | | Phase II (Rs. in Lakhs) | | | | | Total (Rs. In lakhs) | | Grand Total (Rs. in Lakhs) |
| | | I | II | III | IV | | V | | Total | | VI | VII | VIII | IX | Total | | | |
| | | Est | Est | Est | Est | Main | Est | Main | Est | Main | Main | Main | Main | Main | Main | Est | Main | |
| | Kuwaj Khad | | | | | | | | | | | | | | | | | |
| | Gamber, Kuwaj Khad (2) | 0 | 2.1 | 29.84 | 12.93 | 0 | 0 | 8.57 | 44.88 | 8.57 | 6.91 | 5.73 | 2.15 | 0 | 14.79 | 44.88 | 23.36 | 68.24 |
| | Gamrala Khad | 8.4 | 119.37 | 51.74 | 0 | 34.28 | 0 | 27.65 | 179.51 | 61.94 | 22.92 | 8.59 | 0 | 0 | 31.51 | 179.51 | 93.45 | 272.95 |
| | Ghamber, Kawaj Khad | 0 | 2.52 | 35.81 | 15.52 | 0 | 0 | 10.29 | 53.85 | 10.29 | 8.3 | 6.88 | 2.58 | 0 | 17.75 | 53.85 | 28.04 | 81.89 |
| | Khokra (Shamlat) | 7.49 | 25.39 | 11.28 | 0 | 8.37 | 0 | 5.21 | 44.16 | 13.57 | 4.36 | 1.72 | 0 | 0 | 6.08 | 44.16 | 19.65 | 63.82 |
| | Kuwaj | 0 | 1.68 | 23.87 | 10.35 | 0 | 0 | 6.86 | 35.9 | 6.86 | 5.53 | 4.58 | 1.72 | 0 | 11.83 | 35.9 | 18.69 | 54.59 |
| | Landewal (Shamlat) Shitlpur | 0 | 7.49 | 25.39 | 11.28 | 0 | 0 | 8.37 | 44.16 | 8.37 | 5.21 | 4.36 | 1.72 | 0 | 11.29 | 44.16 | 19.66 | 63.82 |
| | Machha (Shamlat) | 1.75 | 26.22 | 10.87 | 0 | 7.38 | 0 | 5.97 | 38.83 | 13.36 | 4.95 | 1.89 | 0 | 0 | 6.84 | 38.83 | 20.2 | 59.03 |
| | Malku majra (Shamlat) Dasho Majra (Shamlat) | 5.32 | 18.43 | 8.1 | 0 | 5.95 | 0 | 3.76 | 31.85 | 9.71 | 3.21 | 1.29 | 0 | 0 | 4.49 | 31.85 | 14.2 | 46.05 |
| | N/Chanla ( Nerli Chanala) | 1.59 | 23.83 | 9.88 | 0 | 6.71 | 0 | 5.43 | 35.3 | 12.14 | 4.5 | 1.72 | 0 | 0 | 6.22 | 35.3 | 18.36 | 53.67 |
| | Nalagarh | 1.59 | 23.83 | 9.88 | 0 | 6.71 | 0 | 5.43 | 35.3 | 12.14 | 4.5 | 1.72 | 0 | 0 | 6.22 | 35.3 | 18.36 | 53.67 |
| | palli kahd | 0 | 0 | 7.94 | 119.17 | 0 | 49.39 | 0 | 176.5 | 0 | 33.56 | 27.15 | 22.52 | 8.59 | 91.83 | 176.5 | 91.83 | 268.33 |
| | Sai (Shamlat) | 3.97 | 59.58 | 24.7 | 0 | 16.78 | 0 | 13.58 | 88.25 | 30.36 | 11.26 | 4.29 | 0 | 0 | 15.55 | 88.25 | 45.91 | 134.16 |

| Division | Sitename | Year | | | | | | | | | Year | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Phase I (Rs.in Lakhs) | | | | | | | | | Phase II (Rs. in Lakhs) | | | | | Total (Rs. In lakhs) | | Grand Total (Rs. in Lakhs) |
| | | I | II | III | IV | | V | | Total | | VI | VII | VIII | IX | Total | | | |
| | | Est | Est | Est | Est | Main | Est | Main | Est | Main | Main | Main | Main | Main | Main | Est | Main | |
| **Rampur** | Anni at Luhri | 0 | 0 | 0.84 | 11.94 | 0 | 5.17 | 0 | 17.95 | 0 | 3.43 | 2.77 | 2.29 | 0.86 | 9.34 | 17.95 | 9.34 | 27.3 |
| | Rampur | 1.26 | 17.91 | 7.76 | 0 | 5.14 | 0 | 4.15 | 26.93 | 9.29 | 3.44 | 1.29 | 0 | 0 | 4.73 | 26.93 | 14.02 | 40.94 |
| | UPF Luhri C271 | 2.1 | 29.84 | 12.93 | 0 | 8.57 | 0 | 6.91 | 44.88 | 15.48 | 5.73 | 2.15 | 0 | 0 | 7.88 | 44.88 | 23.36 | 68.24 |
| | UPF Luhri C271 | 1.26 | 18.72 | 9.58 | 0 | 5.97 | 0 | 4.78 | 29.56 | 10.75 | 3.92 | 1.29 | 0 | 0 | 5.21 | 29.56 | 15.96 | 45.52 |
| | UPF Luhri C271 | 2.1 | 29.84 | 12.93 | 0 | 8.57 | 0 | 6.91 | 44.88 | 15.48 | 5.73 | 2.15 | 0 | 0 | 7.88 | 44.88 | 23.36 | 68.24 |
| | UPF Luhri C271 | 0 | 6.47 | 52.29 | 8.14 | 0 | 0 | 5.18 | 66.91 | 5.18 | 3.38 | 1.02 | 0 | 0 | 4.4 | 66.91 | 9.58 | 76.49 |
| | UPF Luhri C271-1 | 6.47 | 52.29 | 8.14 | 0 | 5.18 | 0 | 3.38 | 66.91 | 8.56 | 1.02 | 0 | 0 | 0 | 1.02 | 66.91 | 9.58 | 76.49 |
| | UPF Newal | 0 | 0.84 | 12.48 | 6.39 | 0 | 0 | 3.98 | 19.71 | 3.98 | 3.19 | 2.61 | 0.86 | 0 | 6.66 | 19.71 | 10.64 | 30.35 |
| | UPF Newal -1 | 0 | 0 | 7.4 | 59.76 | 0 | 9.3 | 0 | 76.46 | 0 | 5.92 | 3.86 | 1.17 | 0 | 10.95 | 76.46 | 10.95 | 87.41 |
| **Shimla** | Chhachhru Nalla (Ganoti Jungle - D-82 Kasumpti) | 0 | 5.8 | 55.98 | 29.63 | 0 | 0 | 15.53 | 91.41 | 15.53 | 8.28 | 6.44 | 0.23 | 0 | 14.96 | 91.41 | 30.49 | 121.9 |
| | Ganoti Nalla ( D-82 Kasumpti) | 0 | 4.35 | 41.99 | 22.22 | 0 | 0 | 11.64 | 68.56 | 11.64 | 6.21 | 4.83 | 0.17 | 0 | 11.22 | 68.56 | 22.86 | 91.42 |
| | GCL Bhagalli | 0 | 2.5 | 36.45 | 18.44 | 0 | 0 | 9.26 | 57.39 | 9.26 | 5.18 | 4.03 | 0.15 | 0 | 9.35 | 57.39 | 18.61 | 76 |
| | Shimla | 0 | 2.78 | 41.71 | 17.29 | 0 | 0 | 11.75 | 61.78 | 11.75 | 9.5 | 7.88 | 3.01 | 0 | 20.39 | 61.78 | 32.14 | 93.91 |
| **Solan** | Delgi | 0.84 | 11.94 | 5.17 | 0 | 3.43 | 0 | 2.77 | 17.95 | 6.19 | 2.29 | 0.86 | 0 | 0 | 3.15 | 17.95 | 9.34 | 27.3 |
| | Parli Rano | 0.84 | 11.94 | 5.17 | 0 | 3.43 | 0 | 2.77 | 17.95 | 6.19 | 2.29 | 0.86 | 0 | 0 | 3.15 | 17.95 | 9.34 | 27.3 |

| Division | Sitename | Year | | | | | | | | | Year | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Phase I (Rs.in Lakhs) | | | | | | | | | Phase II (Rs. in Lakhs) | | | | | Total (Rs. In lakhs) | | Grand Total (Rs. in Lakhs) |
| | | I | II | III | IV | | V | | Total | | VI | VII | VIII | IX | Total | | | |
| | | Est | Est | Est | Est | Main | Est | Main | Est | Main | Main | Main | Main | Main | Main | Est | Main | |
| | Solan | 1.26 | 17.91 | 7.76 | 0 | 5.14 | 0 | 4.15 | 26.93 | 9.29 | 3.44 | 1.29 | 0 | 0 | 4.73 | 26.93 | 14.02 | 40.94 |
| **Spiti Wildlife** | Chame | 0 | 32.72 | 175.44 | 99.3 | 0 | 0 | 36.95 | 307.46 | 36.95 | 26.55 | 15.82 | 0 | 0 | 42.37 | 307.46 | 79.32 | 386.78 |
| | Spiti WL | 0 | 30.33 | 10.21 | 0 | 7 | 0 | 5.18 | 40.54 | 12.18 | 4.03 | 0.15 | 0 | 0 | 4.17 | 40.54 | 16.35 | 56.89 |
| | Thoyor Thevo | 0 | 0 | 121.31 | 40.85 | 0 | 0 | 27.99 | 162.16 | 27.99 | 20.71 | 16.11 | 0.58 | 0 | 37.4 | 162.16 | 65.39 | 227.55 |
| | Zukti | 0 | 0 | 16.92 | 17.37 | 0 | 105.39 | 0 | 139.67 | 0 | 50.57 | 38.33 | 25.79 | 0.73 | 115.41 | 139.67 | 115.41 | 255.09 |
| **Suket** | Dhawal, Barpat, Dhawal-II Ahen Sunali | 0 | 3.62 | 34.99 | 18.52 | 0 | 0 | 9.7 | 57.13 | 9.7 | 5.18 | 4.03 | 0.15 | 0 | 9.35 | 57.13 | 19.05 | 76.19 |
| | ND 292 Fafna | 0 | 0 | 5.96 | 89.38 | 0 | 37.04 | 0 | 132.38 | 0 | 25.17 | 20.37 | 16.89 | 6.44 | 68.87 | 132.38 | 68.87 | 201.24 |
| | ND 293 Chauri-I | 0 | 1.19 | 17.88 | 7.41 | 0 | 0 | 5.03 | 26.48 | 5.03 | 4.07 | 3.38 | 1.29 | 0 | 8.74 | 26.48 | 13.77 | 40.25 |
| | ND 294 Chauri-II | 0 | 0 | 5.16 | 77.46 | 0 | 32.11 | 0 | 114.73 | 0 | 21.82 | 17.65 | 14.64 | 5.58 | 59.69 | 114.73 | 59.69 | 174.41 |
| | ND 298 Neri Roparu | 0 | 0 | 4.37 | 65.54 | 0 | 27.17 | 0 | 97.08 | 0 | 18.46 | 14.93 | 12.39 | 4.72 | 50.5 | 97.08 | 50.5 | 147.58 |
| | ND 299 Gehru II | 0 | 0 | 9.42 | 90.97 | 0 | 48.15 | 0 | 148.54 | 0 | 25.23 | 13.46 | 10.47 | 0.38 | 49.54 | 148.54 | 49.54 | 198.08 |
| | ND 301 Gehru | 0 | 0.79 | 11.92 | 4.94 | 0 | 0 | 3.36 | 17.65 | 3.36 | 2.72 | 2.25 | 0.86 | 0 | 5.83 | 17.65 | 9.19 | 26.83 |
| | ND 303 Dharli Brad | 0 | 0.79 | 11.92 | 4.94 | 0 | 0 | 3.36 | 17.65 | 3.36 | 2.72 | 2.25 | 0.86 | 0 | 5.83 | 17.65 | 9.19 | 26.83 |
| | OD 296 Chalon | 0 | 1.99 | 29.79 | 12.35 | 0 | 0 | 8.39 | 44.13 | 8.39 | 6.79 | 5.63 | 2.15 | 0 | 14.57 | 44.13 | 22.96 | 67.08 |
| | OD 305 Salyana | 1.68 | 24.95 | 12.78 | 0 | 7.96 | 0 | 6.38 | 39.41 | 14.33 | 5.23 | 1.72 | 0 | 0 | 6.95 | 39.41 | 21.28 | 60.69 |

| Division | Sitename | Year | | | | | | | | | Year | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Phase I (Rs.in Lakhs) | | | | | | | | | Phase II (Rs. in Lakhs) | | | | | Total (Rs. In lakhs) | | Grand Total (Rs. in Lakhs) |
| | | I | II | III | IV | | V | | Total | | VI | VII | VIII | IX | Total | | | |
| | | Est | Est | Est | Est | Main | Est | Main | Est | Main | Main | Main | Main | Main | Main | Est | Main | |
| | Suket | 0.25 | 3.74 | 1.92 | 0 | 1.19 | 0 | 0.96 | 5.91 | 2.15 | 0.78 | 0.26 | 0 | 0 | 1.04 | 5.91 | 3.19 | 9.1 |
| **Theog** | Dudhbag-1 | 0 | 1.5 | 21.87 | 11.06 | 0 | 0 | 5.56 | 34.43 | 5.56 | 3.11 | 2.42 | 0.09 | 0 | 5.61 | 34.43 | 11.17 | 45.6 |
| | Jugo Nalla -1 | 0 | 2 | 29.16 | 14.75 | 0 | 0 | 7.41 | 45.91 | 7.41 | 4.14 | 3.22 | 0.12 | 0 | 7.48 | 45.91 | 14.89 | 60.8 |
| | kadyog nalla -1 | 0 | 2.5 | 36.45 | 18.44 | 0 | 0 | 9.26 | 57.39 | 9.26 | 5.18 | 4.03 | 0.15 | 0 | 9.35 | 57.39 | 18.61 | 76 |
| | kalyog -1 | 0 | 2.5 | 36.45 | 18.44 | 0 | 0 | 9.26 | 57.39 | 9.26 | 5.18 | 4.03 | 0.15 | 0 | 9.35 | 57.39 | 18.61 | 76 |
| | Kiyary Nalla -1 | 0 | 3 | 43.74 | 22.13 | 0 | 0 | 11.11 | 68.86 | 11.11 | 6.21 | 4.83 | 0.17 | 0 | 11.22 | 68.86 | 22.33 | 91.19 |
| | Lagal Nalla -1 | 0 | 2 | 29.16 | 14.75 | 0 | 0 | 7.41 | 45.91 | 7.41 | 4.14 | 3.22 | 0.12 | 0 | 7.48 | 45.91 | 14.89 | 60.8 |
| | Theog | 0 | 0 | 13 | 189.53 | 0 | 95.89 | 0 | 298.41 | 0 | 48.14 | 26.92 | 20.94 | 0.76 | 96.76 | 298.41 | 96.76 | 395.18 |
| **Una** | DPF Ban Dhanet C3a | 0 | 1.19 | 17.88 | 7.41 | 0 | 0 | 5.03 | 26.48 | 5.03 | 4.07 | 3.38 | 1.29 | 0 | 8.74 | 26.48 | 13.77 | 40.25 |
| | DPF Ban Dhanet C3b | 0 | 1.26 | 18.72 | 9.58 | 0 | 0 | 5.97 | 29.56 | 5.97 | 4.78 | 3.92 | 1.29 | 0 | 9.99 | 29.56 | 15.96 | 45.52 |
| | DPF Ban Dhanet C3C | 0 | 1.19 | 17.88 | 7.41 | 0 | 0 | 5.03 | 26.48 | 5.03 | 4.07 | 3.38 | 1.29 | 0 | 8.74 | 26.48 | 13.77 | 40.25 |
| | DPF Bohru C1C | 0 | 1.59 | 23.83 | 9.88 | 0 | 0 | 6.71 | 35.3 | 6.71 | 5.43 | 4.5 | 1.72 | 0 | 11.65 | 35.3 | 18.36 | 53.67 |
| | DPF Dhunesar C2C | 0 | 1.68 | 23.87 | 10.35 | 0 | 0 | 6.86 | 35.9 | 6.86 | 5.53 | 4.58 | 1.72 | 0 | 11.83 | 35.9 | 18.69 | 54.59 |
| | DPF Dhunser 3C | 0 | 5.62 | 19.04 | 8.46 | 0 | 0 | 6.28 | 33.12 | 6.28 | 3.9 | 3.27 | 1.29 | 0 | 8.46 | 33.12 | 14.74 | 47.86 |
| | DPF | 0 | 5.32 | 18.43 | 8.1 | 0 | 0 | 5.95 | 31.85 | 5.95 | 3.76 | 3.21 | 1.29 | 0 | 8.25 | 31.85 | 14.2 | 46.05 |

| Division | Sitename | Year | | | | | | | | | Year | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Phase I (Rs.in Lakhs) | | | | | | | | | Phase II (Rs. in Lakhs) | | | | | Total (Rs. In lakhs) | | Grand Total (Rs. in Lakhs) |
| | | I | II | III | IV | | V | | Total | | VI | VII | VIII | IX | Total | | | |
| | | Est | Est | Est | Est | Main | Est | Main | Est | Main | Main | Main | Main | Main | Main | Est | Main | |
| | Dhunser C2.9 NB | | | | | | | | | | | | | | | | | |
| | DPF Dhunser C2D | 0 | 2.1 | 29.84 | 12.93 | 0 | 0 | 8.57 | 44.88 | 8.57 | 6.91 | 5.73 | 2.15 | 0 | 14.79 | 44.88 | 23.36 | 68.24 |
| | DPF Kariara C-1 C | 0 | 0 | 5.88 | 83.56 | 0 | 36.22 | 0 | 125.65 | 0 | 24 | 19.36 | 16.04 | 6.01 | 65.41 | 125.65 | 65.41 | 191.07 |
| | DPF Ramgarh Awarta | 1.19 | 17.88 | 7.41 | 0 | 5.03 | 0 | 4.07 | 26.48 | 9.11 | 3.38 | 1.29 | 0 | 0 | 4.67 | 26.48 | 13.78 | 40.25 |
| | DPF Ramgarh Awarta (C7B) | 3.18 | 47.67 | 19.76 | 0 | 13.43 | 0 | 10.86 | 70.6 | 24.29 | 9.01 | 3.44 | 0 | 0 | 12.44 | 70.6 | 36.73 | 107.33 |
| | DPF Ramgarh Awarta (C7C) | 0 | 0 | 4.76 | 71.5 | 0 | 29.64 | 0 | 105.9 | 0 | 20.14 | 16.29 | 13.51 | 5.15 | 55.1 | 105.9 | 55.1 | 161 |
| | DPF Ramgarh Parla C1B SB | 0 | 1.43 | 21.45 | 8.89 | 0 | 0 | 6.04 | 31.77 | 6.04 | 4.89 | 4.05 | 1.55 | 0 | 10.49 | 31.77 | 16.53 | 48.3 |
| | DPF Sarkaru C2a | 0 | 1.26 | 18.72 | 9.58 | 0 | 0 | 5.97 | 29.56 | 5.97 | 4.78 | 3.92 | 1.29 | 0 | 9.99 | 29.56 | 15.96 | 45.52 |
| | DPF Sarkaru Gharplani | 1.26 | 17.91 | 7.76 | 0 | 5.14 | 0 | 4.15 | 26.93 | 9.29 | 3.44 | 1.29 | 0 | 0 | 4.73 | 26.93 | 14.02 | 40.94 |
| | DPF sarkaru Ghor Plani | 0 | 1.19 | 17.88 | 7.41 | 0 | 0 | 5.03 | 26.48 | 5.03 | 4.07 | 3.38 | 1.29 | 0 | 8.74 | 26.48 | 13.77 | 40.25 |

| Division | Sitename | Year | | | | | | | | | Year | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Phase I (Rs.in Lakhs) | | | | | | | | | Phase II (Rs. in Lakhs) | | | | | Total (Rs. In lakhs) | | Grand Total (Rs. in Lakhs) |
| | | I | II | III | IV | | V | | Total | | VI | VII | VIII | IX | Total | | | |
| | | Est | Est | Est | Est | Main | Est | Main | Est | Main | Main | Main | Main | Main | Main | Est | Main | |
| | FRH nangal Complex at Nangal | 0 | 5.62 | 19.04 | 8.46 | 0 | 0 | 6.28 | 33.12 | 6.28 | 3.9 | 3.27 | 1.29 | 0 | 8.46 | 33.12 | 14.74 | 47.86 |
| | Una | 1.99 | 29.79 | 12.35 | 0 | 8.39 | 0 | 6.79 | 44.13 | 15.18 | 5.63 | 2.15 | 0 | 0 | 7.78 | 44.13 | 22.96 | 67.08 |
| | UPF Busal (C-1) | 0 | 0 | 2.78 | 41.71 | 0 | 17.29 | 0 | 61.78 | 0 | 11.75 | 9.5 | 7.88 | 3.01 | 32.14 | 61.78 | 32.14 | 93.91 |
| | UPF Busal (C-3) | 2.38 | 35.75 | 14.82 | 0 | 10.07 | 0 | 8.15 | 52.95 | 18.22 | 6.76 | 2.58 | 0 | 0 | 9.33 | 52.95 | 27.55 | 80.5 |
| | UPF Busal C-2 | 0 | 0 | 6.19 | 92.95 | 0 | 38.53 | 0 | 137.67 | 0 | 26.18 | 21.18 | 17.57 | 6.7 | 71.62 | 137.67 | 71.62 | 209.29 |
| | UPF Daroh | 0 | 1.68 | 24.95 | 12.78 | 0 | 0 | 7.96 | 39.41 | 7.96 | 6.38 | 5.23 | 1.72 | 0 | 13.32 | 39.41 | 21.28 | 60.69 |
| | UPF Malangar Bharmana | 0 | 0.79 | 11.92 | 4.94 | 0 | 0 | 3.36 | 17.65 | 3.36 | 2.72 | 2.25 | 0.86 | 0 | 5.83 | 17.65 | 9.19 | 26.83 |
| | UPF Marhot Brahmha | 0 | 1.19 | 17.88 | 7.41 | 0 | 0 | 5.03 | 26.48 | 5.03 | 4.07 | 3.38 | 1.29 | 0 | 8.74 | 26.48 | 13.77 | 40.25 |
| | UPF Pansai | 0 | 0.79 | 11.92 | 4.94 | 0 | 0 | 3.36 | 17.65 | 3.36 | 2.72 | 2.25 | 0.86 | 0 | 5.83 | 17.65 | 9.19 | 26.83 |
| | UPF Parojan C-2 | 0 | 0 | 1.99 | 29.79 | 0 | 12.35 | 0 | 44.13 | 0 | 8.39 | 6.79 | 5.63 | 2.15 | 22.96 | 44.13 | 22.96 | 67.08 |
| | UPF Samlara | 0 | 1.99 | 29.79 | 12.35 | 0 | 0 | 8.39 | 44.13 | 8.39 | 6.79 | 5.63 | 2.15 | 0 | 14.57 | 44.13 | 22.96 | 67.08 |
| **Total** | | **300.03** | **3265.25** | **4815.07** | **4202.81** | **826.99** | **1298.94** | **1514.07** | **13882.05** | **2341.05** | **1919.39** | **1249.13** | **604.62** | **139.28** | **3912.39** | **13882.05** | **6253.44** | **20135.60** |

# List of sites along with Area and Latitude & Longitudes

| District | Division | Sitename | Area | GPS Co-ordinate-1 | | | GPS Co-ordinate-1I | | | GPS Co-ordinate-1II | | | GPS Co-ordinate-1V | | | Priority |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Lat | Long | Ele | Lat | Long | Ele | Lat | Long | Ele | Lat | Long | Ele | |
| Mandi | Karsog | D-203 Thach | 20 | 31.3304 | 77.2840 | 0 | 31.3305 | 77.2840 | 0 | 31.3291 | 77.2849 | 0 | 31.3291 | 77.2859 | 0 | High |
| Mandi | Karsog | D-193 Katach C-III | 25 | 31.3572 | 77.2605 | 0 | 31.3586 | 77.2584 | 0 | 31.3592 | 77.2601 | 0 | 31.3583 | 77.2611 | 0 | High |
| Mandi | Karsog | D-184 Maha Dev Banoni | 25 | 31.3680 | 77.2320 | 0 | 31.3680 | 77.2318 | 0 | 31.3667 | 77.2327 | 0 | 31.3675 | 77.2332 | 0 | High |
| Mandi | Karsog | D-73 Gharlol C-II | 20 | 31.3410 | 77.0575 | 0 | 31.3373 | 78.3500 | 0 | 31.3348 | 77.0747 | 0 | 31.3420 | 77.0723 | 0 | High |
| Mandi | Karsog | D-233 Richhani | 25 | 31.3983 | 77.2644 | 0 | 31.3975 | 77.2636 | 0 | 31.3975 | 77.2647 | 0 | 31.3983 | 77.2653 | 0 | High |
| Mandi | Karsog | D-127 Sanach | 15 | 31.3261 | 77.2958 | 0 | 31.3269 | 77.2975 | 0 | 31.3247 | 77.2956 | 0 | 31.3256 | 77.2875 | 0 | High |
| Mandi | Karsog | D-252 Naganal | 15 | 31.3872 | 77.3697 | 0 | 31.3889 | 77.3675 | 0 | 31.3897 | 77.3675 | 0 | 31.3906 | 77.3703 | 0 | High |
| Mandi | Karsog | D 279 Nadaun-1 | 35 | 31.4843 | 77.3136 | 2098 | 31.4842 | 77.3130 | 2156 | 31.4843 | 77.3136 | 2099 | 31.4842 | 77.3141 | 2064 | High |
| Mandi | Karsog | D-280 Nadaun | 25 | 31.4709 | 77.2867 | 2036 | 31.4714 | 77.2886 | 1950 | 31.4705 | 77.2881 | 1952 | 31.4701 | 77.2871 | 1989 | High |
| Mandi | Karsog | D-259 | 18 | 31.4541 | 77.2958 | 1820 | 31.4535 | 77.2956 | 1801 | 31.4534 | 77.2959 | 1780 | 31.4538 | 77.2962 | 1786 | High |
| Mandi | Karsog | D-270 Ruhmani | 15 | 31.3527 | 77.1909 | 1616 | 31.3523 | 77.1909 | 1625 | 31.3524 | 77.1912 | 1613 | 31.3529 | 77.1914 | 1594 | High |
| Mandi | Karsog | D-297 Surahi | 20 | 31.5000 | 77.2965 | 2280 | 0.0000 | 0.0000 | 0 | 0.0000 | 0.0000 | 0 | 0.0000 | 0.0000 | 0 | High |
| Mandi | Karsog | D-257 Jagal | 20 | 31.4691 | 77.2736 | 2187 | 31.4690 | 77.2733 | 2143 | 31.4691 | 77.2737 | 2155 | 31.4694 | 77.2739 | 2178 | High |
| Mandi | Karsog | D-296 | 20 | 31.4709 | 77.3106 | 1872 | 0.0000 | 0.0000 | 0 | 0.0000 | 0.0000 | 0 | 0.0000 | 0.0000 | 0 | High |
| Mandi | Karsog | D-283 Raidhar | 20 | 31.4642 | 77.2892 | 1825 | 0.0000 | 0.0000 | 0 | 0.0000 | 0.0000 | 0 | 0.0000 | 0.0000 | 0 | Moderate |
| Mandi | Karsog | D-273 Lassi | 20 | 31.4704 | 77.2720 | 2228 | 31.4699 | 77.2717 | 2180 | 31.4700 | 77.2730 | 2188 | 31.4705 | 77.2736 | 2188 | High |
| Mandi | Karsog | D-276 Rucehad | 15 | 31.4671 | 77.2879 | 1953 | 0.0000 | 0.0000 | 0 | 0.0000 | 0.0000 | 0 | 0.0000 | 0.0000 | 0 | Moderate |
| Mandi | Karsog | D-275 Kathaloo | 15 | 31.4250 | 77.2883 | 0 | 0.0000 | 0.0000 | 0 | 0.0000 | 0.0000 | 0 | 0.0000 | 0.0000 | 0 | High |
| Mandi | Karsog | D-260 Lotla | 18 | 31.4829 | 77.2744 | 2646 | 0.0000 | 0.0000 | 0 | 0.0000 | 0.0000 | 0 | 0.0000 | 0.0000 | 0 | High |
| Kullu | Anni | UPF Jhangi C-32 (Thunga Jan) | 15 | 31.5561 | 77.5767 | 2294 | 31.5531 | 77.5772 | 2255 | 31.5536 | 77.5789 | 2447 | 31.5217 | 77.5786 | 2474 | High |
| Kullu | Anni | Jimna Dogri | 18 | 31.5658 | 77.5800 | 0 | 31.5653 | 77.5633 | 0 | 31.5661 | 77.5681 | 0 | 31.5653 | 77.5669 | 0 | High |
| Kullu | Anni | Badari Dugh | 10 | 31.4973 | 77.6542 | 2039 | 31.4964 | 77.6526 | 2097 | 31.4958 | 77.6537 | 1984 | 31.4966 | 77.6554 | 1908 | High |
| Kullu | Anni | Badari Dugh | 10 | 31.5014 | 77.7028 | 0 | 31.5017 | 77.7025 | 0 | 31.5008 | 77.7000 | 0 | 31.5008 | 77.7014 | 0 | Moderate |
| Kullu | Anni | Luna Lot | 18 | 31.4081 | 77.4694 | 0 | 31.4078 | 77.4697 | 0 | 31.4103 | 77.4722 | 0 | 31.4094 | 77.4717 | 0 | High |
| Kullu | Anni | Patohardhar | 20 | 31.3950 | 77.5147 | 1879 | 31.3971 | 77.5128 | 2051 | 31.3958 | 77.5098 | 2055 | 31.3951 | 77.5095 | 1992 | High |
| Kullu | Anni | Kotera Kod (UPF Shedric) | 115 | 31.4100 | 77.5408 | 2151 | 31.4097 | 77.5403 | 2160 | 31.4103 | 77.5397 | 2165 | 31.4119 | 77.5386 | 0 | Moderate |
| Kullu | Anni | Kukar Jan (UPF Nither) | 75 | 31.5965 | 77.8798 | 892 | 31.5928 | 77.8832 | 880 | 31.5960 | 77.8881 | 883 | 31.6017 | 77.8940 | 882 | High |
| Kullu | Anni | Chalndi Dhar | 10 | 31.6394 | 77.9069 | 0 | 31.6375 | 77.9061 | 0 | 31.6406 | 77.9108 | 0 | 31.6408 | 77.8964 | 0 | High |
| Kullu | Anni | UPF Dagani | 10 | 31.4275 | 77.5334 | 0 | 31.4264 | 77.5364 | 0 | 31.4258 | 77.5319 | 0 | 31.4253 | 77.5347 | 0 | Moderate |
| Kullu | Anni | Beri nalla | 25 | 31.459 | 77.551 | 140 | 31.461 | 77.552 | 0 | 31.461 | 77.553 | 0 | 31.4589 | 77.551 | 0 | Mod |

| | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | UPF Nore C-63 | | 2 | 7 | 5 | 7 | 8 | | 1 | 6 | | | 9 | | erate |
| Kullu | Anni | Chkadhar (UPF Khalair C-68) | 2 | 31.4664 | 77.5322 | 1900 | 31.4658 | 77.5333 | 1900 | 31.4647 | 77.5314 | 0 | 31.4642 | 77.5317 | 0 | High |
| Kullu | Anni | Bila jan | 20 | 31.4692 | 77.4886 | 2739 | 31.4722 | 77.4914 | 2782 | 31.4694 | 77.4736 | 2630 | 31.4711 | 77.4928 | 2652 | High |
| Kullu | Anni | Khegsu | 50 | 31.3596 | 77.4599 | 1438 | 31.3580 | 77.4553 | 1303 | 31.3604 | 77.4551 | 1400 | 31.3594 | 77.4597 | 1375 | High |
| Kullu | Anni | Ropri | 15 | 31.3565 | 77.4134 | 1080 | 31.3576 | 77.4139 | 0 | 31.3588 | 77.4139 | 0 | 31.3593 | 77.4155 | 0 | High |
| Kullu | Anni | Bangu Jhaker | 10 | 31.3962 | 77.4307 | 0 | 31.3956 | 77.4315 | 0 | 31.3953 | 77.4315 | 0 | 31.3923 | 77.4345 | 0 | High |
| Lahaul Spiti | Spiti Wildlife | Chame | 100 | 32.2245 | 78.1199 | 4628 | 32.2143 | 78.1152 | 4683 | 32.2077 | 78.1098 | 4584 | 32.2191 | 78.1106 | 4597 | Low |
| Lahaul Spiti | Spiti Wildlife | Zukti | 100 | 32.4811 | 78.2825 | 4943 | 32.2628 | 78.3614 | 4871 | 32.3072 | 78.2606 | 4678 | 32.2578 | 78.3889 | 4672 | Low |
| Lahaul Spiti | Spiti Wildlife | Thoyor Thevo | 100 | 32.3331 | 78.0206 | 4363 | 32.5069 | 78.1747 | 4549 | 32.3656 | 78.2614 | 4343 | 32.3983 | 78.0400 | 4347 | Low |
| Kullu | Anni | BanguJhakar-1 | 10 | 31.3962 | 77.4307 | 0 | 31.3956 | 77.4310 | 0 | 31.3953 | 77.4315 | 0 | 31.3923 | 77.4345 | 0 | High |
| Kullu | Anni | Jaglandi | 20 | 31.3664 | 77.4336 | 1580 | 31.3655 | 77.4325 | 1561 | 31.3650 | 77.4329 | 1512 | 31.3656 | 77.4337 | 1510 | High |
| Kullu | Anni | Jaglandi | 20 | 30.4078 | 77.4464 | 2275 | 30.4078 | 77.4514 | 2292 | 30.4089 | 77.4569 | 2274 | 30.4042 | 77.4611 | 2296 | Moderate |
| Bilaspur | Bilaspur | DPF MALAGAN-1 | 20 | 31.3847 | 76.6147 | 0 | 31.3850 | 76.6156 | 0 | 31.3839 | 76.6158 | 0 | 31.3839 | 76.6147 | 0 | High |
| Bilaspur | Bilaspur | UPF Baloh | 20 | 31.4056 | 76.6222 | 0 | 31.4056 | 76.6219 | 0 | 31.4058 | 76.6222 | 0 | 31.4056 | 76.6222 | 0 | Moderate |
| Bilaspur | Bilaspur | C6C Jhoulla | 70 | 31.3481 | 76.6397 | 0 | 31.3439 | 76.6339 | 0 | 31.3394 | 76.6367 | 0 | 31.3403 | 76.6403 | 0 | Moderate |
| Bilaspur | Bilaspur | DPF Balghar | 54 | 31.3789 | 76.6117 | 0 | 31.3775 | 76.6081 | 0 | 31.3722 | 76.6111 | 0 | 31.3775 | 76.6144 | 0 | High |
| Bilaspur | Bilaspur | UPF kadoh | 75 | 31.3647 | 76.5636 | 0 | 31.3619 | 76.5622 | 0 | 31.3603 | 76.5633 | 0 | 31.3617 | 76.5661 | 0 | High |
| Bilaspur | Bilaspur | DPF C-17 Chaughan | 15 | 31.3372 | 76.6142 | 0 | 31.3367 | 76.6150 | 0 | 31.3422 | 76.6161 | 0 | 31.3383 | 76.6161 | 0 | High |
| Bilaspur | Bilaspur | C-43 Gadyana | 10 | 31.3025 | 76.6259 | 849 | 31.2976 | 76.6347 | 840 | 31.3015 | 76.6324 | 843 | 31.3029 | 76.6323 | 845 | High |
| Bilaspur | Bilaspur | DPF Bathrin | 20 | 31.3134 | 76.6398 | 657 | 31.3135 | 76.6394 | 711 | 31.3133 | 76.6396 | 744 | 31.3133 | 76.6399 | 709 | High |
| Bilaspur | Bilaspur | DPF Kharli | 10 | 31.4850 | 77.3419 | 0 | 31.4944 | 77.3225 | 0 | 31.5167 | 77.3094 | 0 | 31.5250 | 77.3139 | 0 | Moderate |
| Bilaspur | Bilaspur | DPF Malhot | 10 | 31.5192 | 76.7150 | 0 | 31.5272 | 76.7539 | 0 | 31.2842 | 76.7256 | 0 | 31.5242 | 76.6753 | 0 | High |
| Bilaspur | Bilaspur | UF Bargaon | 15 | 31.5775 | 76.3842 | 2220 | 31.5558 | 76.7503 | 1907 | 31.6672 | 76.7033 | 1920 | 31.6653 | 76.7336 | 2155 | Moderate |
| Bilaspur | Bilaspur | UPF Kulziar II | 10 | 31.5733 | 76.5636 | 0 | 31.4808 | 76.8011 | 0 | 31.5242 | 76.5628 | 0 | 31.5925 | 76.7583 | 0 | Moderate |
| Solan | Nalagarh | Landewal (Shamlat) Shitlpur | 20 | 31.0439 | 76.9786 | 374 | 31.0831 | 76.8025 | 378 | 31.0233 | 76.7869 | 381 | 31.1381 | 76.8667 | 0 | High |
| Solan | Nalagarh | Malku majra (Shamlat) Dasho Majra (Shamlat) | 15 | 30.9524 | 76.7633 | 370 | 0.0000 | 0.0000 | 0 | 0.0000 | 0.0000 | 0 | 0.0000 | 0.0000 | 0 | High |
| Solan | Nalagarh | D-168 Bhalwa, Salhaar and taller | 10 | 31.2311 | 77.0208 | 975 | 31.2156 | 77.0219 | 0 | 31.2311 | 77.0208 | 0 | 31.2344 | 76.9708 | 0 | High |
| Solan | Nalagarh | D-169 Talli | 15 | 31.0864 | 76.9069 | 908 | 31.0853 | 76.9006 | 923 | 31.0872 | 76.9133 | 908 | 31.1394 | 76.9494 | 862 | High |
| Solan | Nalagarh | Khokra (Shamlat) | 20 | 31.0903 | 76.9333 | 386 | 31.0994 | 76.9333 | 358 | 31.1169 | 76.9333 | 364 | 31.1319 | 76.9394 | 357 | High |
| Solan | Nalagarh | Sai (Shamlat) | 50 | 31.2156 | 76.7709 | 621 | 31.2156 | 76.7709 | 622 | 31.2156 | 76.7708 | 620 | 31.2156 | 76.7709 | 621 | High |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Solan | Nalagarh | Machha (Shamlat) | 22 | 31.1354 | 76.8494 | 1043 | 31.1351 | 76.8493 | 1030 | 31.1351 | 76.8495 | 950 | 31.1354 | 76.8472 | 1064 | High |
| Solan | Nalagarh | Gamrala Khad | 100 | 31.1045 | 76.8729 | 1100 | 31.1044 | 76.8701 | 1100 | 31.1042 | 76.8701 | 1100 | 31.1206 | 77.3529 | 1050 | High |
| Solan | Nalagarh | Ghamber, Kawaj Khad | 30 | 31.1271 | 76.8423 | 900 | 31.0001 | 76.8367 | 1100 | 31.1008 | 76.8421 | 1050 | 31.0918 | 76.8605 | 1122 | High |
| Solan | Nalagarh | Gambar, Gam rola Khad | 200 | 31.0839 | 76.8875 | 895 | 31.0856 | 76.8880 | 890 | 31.0671 | 76.8902 | 895 | 31.0670 | 76.8702 | 890-1175 | High |
| Solan | Nalagarh | Kuwaj | 20 | 31.1150 | 76.8044 | 912 | 31.0978 | 76.8164 | 919 | 31.0819 | 76.7706 | 950 | 31.0658 | 76.7539 | 945 | High |
| Solan | Nalagarh | Gamber, Kuwaj Khad | 110 | 31.1636 | 76.7689 | 1300 | 31.1703 | 76.7589 | 1290 | 31.1672 | 76.7669 | 1280 | 31.1503 | 76.7011 | 1305 | High |
| Solan | Nalagarh | Gamber, Kuwaj Khad | 90 | 31.0992 | 76.8114 | 850-1030 | 31.1153 | 76.8139 | 875 | 31.1311 | 76.6814 | 895 | 31.1139 | 76.6639 | 890 | High |
| Solan | Nalagarh | Gamber, Kuwaj Khad (2) | 25 | 31.0466 | 76.8512 | 861 | 31.0512 | 76.8526 | 850 | 31.0625 | 76.8479 | 835 | 31.0630 | 76.8478 | 835 | High |
| Solan | Nalagarh | Chikni Khad | 100 | 31.0750 | 76.7017 | 758 | 31.0416 | 76.6706 | 760 | 31.0909 | 76.6367 | 770 | 31.0738 | 76.6576 | 770 | High |
| Solan | Nalagarh | palli kahd | 100 | 31.1540 | 76.7249 | 758 | 31.1414 | 76.7211 | 758 | 31.1415 | 76.7471 | 971 | 31.1243 | 76.7135 | 975 | High |
| Solan | Nalagarh | Chikni Khad (2) | 100 | 31.1227 | 77.0947 | 471 | 31.0868 | 76.7486 | 607 | 31.0913 | 76.7471 | 637-971 | 31.0821 | 76.7653 | 471 | High |
| Solan | Nalagarh | Chikni Khad (3) | 1203 ;/ | 31.0405 | 76.8143 | 904 | 0.0000 | 0.0000 | 0 | 0.0000 | 0.0000 | 0 | 0.0000 | 0.0000 | 0 | High |
| Una | Una | FRH nangal Complex at Nangal | 15 | 31.3682 | 76.3710 | 352 | 31.3685 | 76.3734 | 357 | 31.3656 | 76.3745 | 349 | 31.3644 | 76.3718 | 345 | High |
| Una | Una | DPF Sarkaru Gharplani | 15 | 31.6669 | 76.2925 | 611 | 31.6950 | 76.3119 | 613 | 31.6664 | 76.2953 | 612 | 31.6625 | 76.3175 | 580 | Moderate |
| Una | Una | DPF Sarkaru C2 a | 15 | 31.6575 | 76.2931 | 657 | 31.6556 | 76.2919 | 603 | 31.6556 | 76.2919 | 635 | 31.6758 | 76.2914 | 617 | High |
| Una | Una | UPF Samlara | 25 | 31.6788 | 76.3241 | 640 | 31.6793 | 76.3241 | 645 | 31.6801 | 76.3262 | 650 | 31.6801 | 76.3262 | 643 | High |
| Una | Una | DPF sarkaru Ghor Plani | 15 | 31.6983 | 76.3069 | 0 | 31.6947 | 31.6947 | 0 | 31.6817 | 76.3069 | 0 | 31.7156 | 76.3414 | 0 | High |
| Una | Una | UPF Malangar Bharmana | 10 | 31.5922 | 76.3894 | 594 | 31.5939 | 76.3889 | 578 | 31.5931 | 76.3900 | 604 | 0.0000 | 0.0000 | 0 | High |
| Una | Una | UPF Marhot Brahmha | 15 | 31.6454 | 76.3382 | 617 | 0.0000 | 0.0000 | 0 | 0.0000 | 0.0000 | 0 | 0.0000 | 0.0000 | 0 | Moderate |
| Una | Una | UPF Pansai | 10 | 31.5297 | 76.4258 | 571 | 31.5333 | 76.4222 | 558 | 31.5347 | 76.4217 | 603 | 31.5269 | 76.4247 | 582 | High |
| Una | Una | UPF Daroh | 20 | 31.5578 | 76.4194 | 980 | 31.5411 | 76.4083 | 976 | 31.5611 | 76.4197 | 987 | 31.5608 | 76.4169 | 973 | Moderate |
| Una | Una | DPF Dhunesar C2C | 20 | 31.6553 | 76.2631 | 0 | 31.6623 | 76.2698 | 0 | 31.6436 | 76.2643 | 0 | 31.6497 | 76.2633 | 0 | High |
| Una | Una | DPF Dhunser C2.9 NB | 15 | 31.6554 | 76.2576 | 0 | 31.6505 | 76.2571 | 0 | 31.6544 | 76.2600 | 0 | 0.0000 | 0.0000 | 0 | High |
| Una | Una | DPF Dhunser C2D | 25 | 31.6524 | 76.2603 | 0 | 31.6517 | 76.2609 | 0 | 31.6513 | 76.2597 | 0 | 31.6519 | 76.2612 | 0 | High |
| Una | Una | DPF Dhunser 3C | 15 | 31.6554 | 76.2576 | 0 | 31.6548 | 76.2571 | 0 | 31.6542 | 76.2600 | 0 | 31.6529 | 76.2608 | 0 | High |
| Una | Una | DPF Ramgarh Awarta | 15 | 31.6120 | 76.3522 | 559 | 0.0000 | 0.0000 | 0 | 0.0000 | 0.0000 | 0 | 0.0000 | 0.0000 | 0 | High |
| Una | Una | DPF Ramgarh Awarta (C7B) | 40 | 31.5803 | 76.3343 | 608 | 0.0000 | 0.0000 | 0 | 0.0000 | 0.0000 | 0 | 0.0000 | 0.0000 | 0 | High |
| Una | Una | DPF Kariara C-1 C | 70 | 31.5940 | 76.3453 | 0 | 31.5951 | 76.3474 | 0 | 31.5928 | 76.3478 | 0 | 31.5927 | 76.3460 | 0 | Moderate |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Una | Una | UPF Busal (C-1) | 35 | 31.5503 | 76.3732 | 0 | 31.5507 | 76.3706 | 0 | 31.5537 | 76.3664 | 0 | 31.5537 | 76.3664 | 0 | Moderate |
| Una | Una | UPF Busal C-2 | 78 | 31.1040 | 76.6294 | 0 | 31.9616 | 76.0549 | 0 | 31.9481 | 76.6267 | 0 | 31.5635 | 76.3689 | 0 | High |
| Una | Una | DPF Ramgarh Awarta (C7C) | 60 | 31.5040 | 76.3732 | 0 | 31.5062 | 76.3676 | 0 | 31.5131 | 76.5373 | 0 | 31.5034 | 76.3800 | 0 | Moderate |
| Una | Una | UPF Busal (C-3) | 30 | 31.5831 | 76.3322 | 611 | 0.0000 | 0.0000 | 0 | 0.0000 | 0.0000 | 0 | 0.0000 | 0.0000 | 0 | Moderate |
| Una | Una | DPF Bohru C1C | 20 | 31.4222 | 76.4148 | 625 | 31.4226 | 76.4171 | 1535 | 31.4243 | 76.4175 | 1570 | 31.4248 | 76.4146 | 1572 | High |
| Una | Una | DPF Ramgarh Parla C1B SB | 18 | 31.4641 | 76.3776 | 0 | 31.4659 | 76.3801 | 0 | 31.4684 | 76.3778 | 0 | 31.4669 | 76.3753 | 0 | High |
| Una | Una | UPF Parojan C-2 | 25 | 31.4309 | 76.4314 | 562 | 31.4298 | 76.4302 | 578 | 31.4285 | 76.4323 | 580 | 31.4300 | 76.4329 | 560 | High |
| Una | Una | DPF Ban Dhanet C3b | 15 | 31.6268 | 76.3046 | 0 | 31.6257 | 76.5636 | 0 | 31.6225 | 76.3001 | 0 | 31.6761 | 76.3006 | 0 | High |
| Una | Una | DPF Ban Dhanet C3a | 15 | 31.6242 | 76.2977 | 0 | 31.6248 | 76.2994 | 0 | 31.6261 | 76.3114 | 0 | 31.6217 | 76.3034 | 0 | High |
| Una | Una | DPF Ban Dhanet C3C | 15 | 31.6761 | 76.3006 | 0 | 31.6975 | 76.4442 | 0 | 31.7044 | 76.3311 | 0 | 31.6839 | 76.3458 | 0 | High |
| Shimla | Rampur | UPF Newal | 10 | 31.5327 | 77.7551 | 1987 | 31.5321 | 77.7560 | 1893 | 31.5336 | 31.5336 | 1854 | 31.5348 | 77.7560 | 1965 | Moderate |
| Solan | Kunihar | UPF Dochi | 15 | 31.0941 | 76.9884 | 0 | 31.0946 | 76.9911 | 0 | 32.4266 | 76.9910 | 0 | 31.0929 | 76.9907 | 0 | High |
| Solan | Kunihar | UPF 334 Ladech West | 10 | 31.1038 | 76.8827 | 801 | 31.1035 | 76.8814 | 809 | 31.1023 | 76.8808 | 830 | 31.1004 | 76.8821 | 850 | High |
| Solan | Kunihar | DPF Daho Ki Dhar, C-6 | 15 | 31.0835 | 76.9288 | 766 | 31.0837 | 76.9303 | 789 | 31.0831 | 76.9324 | 855 | 31.0849 | 76.9326 | 859 | High |
| Solan | Kunihar | DPF 309 Manjyal C-1 | 15 | 30.9295 | 77.0641 | 1367 | 0.0000 | 0.0000 | 0 | 0.0000 | 0.0000 | 0 | 0.0000 | 0.0000 | 0 | High |
| Solan | Kunihar | DPF 309 Manjyal C-1 | 15 | 31.1160 | 836.0000 | 1064 | 31.1160 | 836.0000 | 1067 | 31.1154 | 836.0000 | 1091 | 31.1138 | 836.0000 | 1137 | High |
| Solan | Kunihar | UPF 305KoKhari | 10 | 31.1251 | 836.0000 | 1158 | 31.1255 | 836.0000 | 1208 | 31.1274 | 836.0000 | 1206 | 31.1276 | 836.0000 | 1171 | High |
| Solan | Kunihar | DPF 77 Kangu C-1B | 15 | 31.1233 | 76.9571 | 895 | 31.1246 | 76.9571 | 1213 | 31.1232 | 76.9570 | 1280 | 31.1242 | 76.9581 | 1185 | High |
| Solan | Kunihar | Shilru DPF | 15 | 31.2164 | 76.8769 | 1852 | 31.2180 | 76.8758 | 1897 | 31.2172 | 76.8754 | 1870 | 31.2187 | 76.8761 | 1890 | High |
| Solan | Kunihar | U-387 Chatiud | 15 | 31.0290 | 76.9404 | 1115 | 31.0264 | 76.9421 | 1164 | 31.0258 | 76.9413 | 1140 | 31.0253 | 76.9403 | 1170 | High |
| Solan | Kunihar | U-346 Kail | 15 | 31.0507 | 76.9266 | 978 | 31.0527 | 76.9288 | 957 | 31.0518 | 76.9260 | 3946 | 31.0574 | 76.9262 | 3942 | High |
| Solan | Kunihar | U-344 Chyale Ki Dhar | 15 | 31.0559 | 76.9224 | 323 | 31.0569 | 76.9227 | 312 | 31.0578 | 76.9223 | 0 | 31.0574 | 76.9260 | 297 | High |
| Shimla | Kotgarh | RF Nagkelo C-59 (A) | 10 | 31.3037 | 76.5585 | 2513 | 31.3025 | 76.5585 | 2492 | 31.3018 | 76.5062 | 2483 | 31.3028 | 76.5076 | 2570 | High |
| Shimla | Kotgarh | Bithal Kanda | 10 | 31.3489 | 77.4869 | 1208 | 31.3489 | 77.4856 | 1204 | 31.3511 | 77.4898 | 937 | 31.3529 | 77.4841 | 912 | High |
| Shimla | Kotgarh | UPF Madhawn C-282 | 15 | 31.2754 | 77.4591 | 0 | 31.2769 | 77.4594 | 0 | 31.2781 | 77.4619 | 0 | 31.2759 | 77.4589 | 0 | High |
| Shimla | Kotgarh | DPF Kapu CN-35 | 15 | 31.3449 | 77.4671 | 1190 | 31.3446 | 77.4679 | 1164 | 31.3446 | 77.4685 | 1196 | 31.3460 | 77.4686 | 1202 | High |
| Shimla | Kotgarh | DPF Nihari C-49 | 10 | 31.3153 | 77.4567 | 1500 | 0.0000 | 0.0000 | 0 | 0.0000 | 0.0000 | 0 | 0.0000 | 0.0000 | 0 | High |
| Shimla | Kotgarh | DPF Jhamunda | 15 | 31.2166 | 77.4557 | 2664 | 0.0000 | 0.0000 | 0 | 0.0000 | 0.0000 | 0 | 0.0000 | 0.0000 | 0 | High |
| Shimla | Kotgarh | DPF Chhichr C-38 (b) | 15 | 31.2644 | 77.4228 | 2475 | 31.2653 | 77.4250 | 2469 | 31.2750 | 77.4181 | 2466 | 31.2753 | 77.4186 | 2478 | High |
| Shimla | Kotgarh | DPF Hawan C-45 | 15 | 31.2919 | 77.4524 | 2123 | 31.2933 | 77.4041 | 2045 | 31.2938 | 77.4550 | 2015 | 31.2912 | 77.4526 | 2106 | High |
| Shimla | Kotgarh | UPF Banahar | 15 | 31.3272 | 77.3544 | 1410 | 31.3264 | 77.3556 | 1440 | 31.3275 | 77.3544 | 1450 | 31.3272 | 77.3536 | 1480 | High |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | kandi C233 | | | | | | | | | | | | | | |
| Shimla | Kotgarh | DPF Awar C-31 | 15 | 31.2867 | 77.3953 | 2288 | 31.2822 | 77.3992 | 2295 | 31.2775 | 77.4022 | 2310 | 31.2825 | 77.3956 | 2290 | High |
| Shimla | Kotgarh | DPF Manu CN 21 | 15 | 31.3311 | 77.4117 | 1300 | 31.3258 | 77.4128 | 1350 | 31.3258 | 77.4125 | 1375 | 31.3267 | 77.4122 | 1420 | High |
| Shimla | Rampur | UPF Luhri C271 | 15 | 31.3311 | 77.4322 | 1288 | 31.3300 | 77.4319 | 1290 | 31.3331 | 77.4317 | 1300 | 31.3390 | 77.4342 | 1310 | High |
| Shimla | Kotgarh | UPF Deha C-207 | 15 | 31.2486 | 77.3569 | 0 | 31.2489 | 77.3569 | 0 | 31.2489 | 77.0406 | 0 | 31.2397 | 77.3581 | 0 | High |
| Shimla | Kotgarh | UPF Khalantu C-218 | 15 | 31.5011 | 77.3986 | 1115 | 31.4961 | 77.3736 | 1108 | 31.4903 | 77.3739 | 1100 | 31.5319 | 77.4264 | 1048 | Moderate |
| Shimla | Kotgarh | UPF Jarola C-213 | 20 | 31.4319 | 77.6272 | 1770 | 31.4328 | 77.6369 | 1775 | 31.4411 | 77.6433 | 1781 | 31.4244 | 77.6189 | 1675 | High |
| Bilaspur | Bilaspur | DPF C-3a Panyala | 15 | 31.4616 | 76.7156 | 683 | 31.4607 | 76.7157 | 673 | 31.4621 | 76.7213 | 706 | 31.4648 | 76.7219 | 712 | Moderate |
| Bilaspur | Bilaspur | DPF Gatol C4 (6) Randoh | 15 | 31.4756 | 76.7033 | 661 | 31.4756 | 76.7033 | 660 | 31.4756 | 76.7035 | 661 | 31.4756 | 76.7034 | 661 | High |
| Bilaspur | Bilaspur | DPF Kothi | 15 | 31.4647 | 76.7192 | 656 | 31.4637 | 76.7188 | 690 | 31.4645 | 76.7206 | 697 | 31.4636 | 76.7191 | 689 | Moderate |
| Bilaspur | Bilaspur | C-1 Osal jamun | 60 | 31.4160 | 76.6951 | 0 | 31.4187 | 76.6957 | 0 | 31.4187 | 76.6943 | 0 | 31.4164 | 76.6941 | 0 | High |
| Bilaspur | Bilaspur | DPF C-9 trontra | 15 | 31.4319 | 76.7226 | 0 | 31.4282 | 76.7239 | 0 | 31.4279 | 76.7227 | 0 | 31.4296 | 76.7230 | 0 | High |
| Bilaspur | Bilaspur | C-10 Raehera -1 | 10 | 31.4370 | 76.7272 | 0 | 31.4371 | 76.7289 | 0 | 31.4351 | 76.7276 | 0 | 31.4357 | 76.7292 | 0 | High |
| Bilaspur | Bilaspur | DPF C-5 (A) Palti | 40 | 31.4598 | 76.7572 | 0 | 31.4608 | 76.7567 | 0 | 31.4600 | 76.7545 | 0 | 31.4607 | 76.7541 | 0 | High |
| Bilaspur | Bilaspur | C-9 Tihara | 5 | 31.4096 | 76.7720 | 0 | 31.4106 | 76.7733 | 0 | 31.4099 | 76.7753 | 0 | 31.4089 | 76.7737 | 0 | High |
| Hamirpur | Hamirpur | P-22 Gutiana Batiana | 20 | 31.5858 | 76.6964 | 790 | 31.5217 | 76.7106 | 801 | 31.5175 | 76.7106 | 0 | 31.7381 | 76.6211 | 771 | Moderate |
| Bilaspur | Bilaspur | UPF Palela | 15 | 31.4741 | 76.7841 | 0 | 31.4733 | 76.7834 | 0 | 31.4709 | 76.7839 | 0 | 31.4666 | 76.7851 | 0 | High |
| Bilaspur | Bilaspur | DPF Baryanle | 18 | 31.6422 | 77.3402 | 0 | 31.6428 | 77.3395 | 0 | 31.6458 | 77.3420 | 0 | 31.6462 | 77.3404 | 0 | High |
| Bilaspur | Bilaspur | UPF Shira | 10 | 31.3528 | 76.7809 | 1090 | 31.3526 | 76.7810 | 1074 | 31.3528 | 76.7814 | 1070 | 31.3531 | 76.7812 | 1090 | High |
| Bilaspur | Bilaspur | C-17 Chaugan | 5 | 31.3372 | 76.6142 | 0 | 31.3367 | 76.6150 | 0 | 31.3422 | 76.6161 | 0 | 31.3383 | 76.6161 | 0 | High |
| Shimla | Shimla | GCL Bhagalli | 25 | 31.0936 | 77.1102 | 1580 | 31.0938 | 77.1100 | 1565 | 31.0937 | 77.1099 | 1550 | 31.0937 | 77.1098 | 1540 | High |
| Bilaspur | Bilaspur | UF Dohak | 20 | 31.5636 | 76.5047 | 1819 | 31.5678 | 76.4786 | 1904 | 31.5133 | 76.7044 | 2105 | 31.5731 | 76.4858 | 1870 | Moderate |
| Bilaspur | Bilaspur | DPF C-6 Anti | 10 | 31.6642 | 76.7389 | 2604 | 31.4350 | 76.6731 | 2743 | 31.3792 | 76.7147 | 0 | 31.5778 | 76.7681 | 0 | Moderate |
| Bilaspur | Bilaspur | C-35 Tange Walla | 10 | 31.3431 | 76.6178 | 588 | 31.4036 | 76.6286 | 580 | 31.3967 | 76.6756 | 612 | 31.4169 | 76.8058 | 710 | Moderate |
| Solan | Nalagarh | N/Chanla ( Nerli Chanala) | 20 | 31.2155 | 78.7712 | 613 | 31.2156 | 78.7707 | 622 | 31.2162 | 78.7711 | 623 | 31.2163 | 78.7711 | 622 | High |
| Bilaspur | Bilaspur | UPF Brota Dabla ( nag Thakura Gola) | 15 | 31.3456 | 76.4486 | 0 | 31.3450 | 76.4458 | 0 | 31.3431 | 76.4481 | 0 | 31.3442 | 76.4489 | 0 | High |
| Bilaspur | Bilaspur | UPF Chanarda | 20 | 31.3703 | 76.4150 | 0 | 31.3719 | 76.4178 | 0 | 31.3733 | 76.4175 | 0 | 31.3731 | 76.4197 | 0 | High |
| Bilaspur | Bilaspur | UPF Gwalthai | 80 | 31.3700 | 76.4153 | 0 | 31.3711 | 76.4167 | 0 | 31.3725 | 76.4161 | 0 | 31.3733 | 76.4014 | 0 | High |
| Bilaspur | Bilaspur | DPF Sandhla | 15 | 31.3527 | 76.4959 | 0 | 31.3508 | 76.4117 | 0 | 31.3519 | 76.4923 | 0 | 31.3497 | 76.4933 | 0 | High |
| Bilaspur | Bilaspur | UPF Lehri | 15 | 31.3683 | 76.4466 | 528 | 31.3681 | 76.4467 | 535 | 31.3684 | 76.4470 | 528 | 31.3680 | 76.4466 | 528 | High |
| Kinnaur | Kinnaur | Rurang kanda | 60 | 31.5214 | 78.1914 | 2825 | 31.5217 | 78.1969 | 2830 | 31.5183 | 78.1956 | 2835 | 31.5219 | 78.1847 | 0 | Moderate |
| Bilaspur | Bilaspur | UPF Neemawali | 12 | 31.3041 | 76.5825 | 548 | 31.3363 | 76.6157 | 567 | 31.3794 | 76.7019 | 796 | 31.3836 | 76.6781 | 744 | High |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Bilaspur | Bilaspur | UPF Chalela | 15 | 31.3008 | 76.5760 | 664 | 31.2981 | 76.5710 | 685 | 31.3014 | 76.5793 | 576 | 31.3044 | 76.5755 | 568 | High |
| Bilaspur | Bilaspur | UPF Chalela | 15 | 31.4836 | 76.9849 | 0 | 31.4863 | 76.9846 | 0 | 31.4836 | 76.9826 | 0 | 31.4836 | 76.9826 | 0 | Moderate |
| Kinnaur | Kinnaur | Lahyok | 20 | 31.8478 | 78.6475 | 3852 | 0.0000 | 0.0000 | 0 | 0.0000 | 0.0000 | 0 | 0.0000 | 0.0000 | 0 | Low |
| Kinnaur | Kinnaur | Nigul Seri | 25 | 31.5659 | 77.8849 | 1566 | 31.5661 | 77.8750 | 1470 | 31.5632 | 77.8833 | 1631 | 31.5544 | 77.8783 | 1445 | High |
| Bilaspur | Bilaspur | UPF Nakrana | 15 | 31.3032 | 76.5795 | 482 | 31.3034 | 76.5815 | 546 | 31.3037 | 76.5805 | 482 | 31.3041 | 76.5825 | 512 | High |
| Bilaspur | Bilaspur | DPF Maleta | 12 | 31.3119 | 76.5451 | 652 | 31.2586 | 76.5448 | 483 | 31.2126 | 76.7082 | 782 | 31.3409 | 76.7564 | 830 | High |
| Kinnaur | Kinnaur | UPF Thach | 10 | 31.3078 | 76.9002 | 1221 | 31.3078 | 76.9008 | 1221 | 31.3082 | 76.9009 | 1273 | 31.3084 | 76.9003 | 1261 | Moderate |
| Bilaspur | Bilaspur | DPF Birewali | 25 | 31.3478 | 76.4946 | 669 | 31.3454 | 76.4960 | 669 | 31.3507 | 76.5040 | 785 | 31.3508 | 76.5050 | 763 | High |
| Kinnaur | Kinnaur | UPF Tranda | 15 | 31.5633 | 77.8834 | 1620 | 31.5641 | 77.8843 | 0 | 31.5619 | 77.8869 | 0 | 31.5617 | 77.8867 | 0 | High |
| Kinnaur | Kinnaur | khaia (p/land) | 25 | 31.5334 | 77.9179 | 0 | 31.5260 | 77.9165 | 0 | 31.5260 | 77.9165 | 0 | 31.5653 | 77.9326 | 0 | Moderate |
| Kinnaur | Kinnaur | Niglong (vikas nagar) | 15 | 31.5342 | 77.9168 | 1852 | 31.5339 | 77.9168 | 1903 | 31.5331 | 77.9183 | 1928 | 31.5325 | 77.9184 | 1923 | Moderate |
| Bilaspur | Bilaspur | C4 (1) Surphat | 25 | 31.3822 | 76.6950 | 0 | 31.3864 | 76.6908 | 0 | 31.3903 | 76.6961 | 0 | 31.3867 | 76.7008 | 0 | High |
| Bilaspur | Bilaspur | Dahad | 22 | 31.3511 | 76.6744 | 0 | 31.3400 | 76.6667 | 0 | 31.3567 | 76.6792 | 0 | 31.7578 | 76.7344 | 0 | Moderate |
| Bilaspur | Bilaspur | C2 Jangla | 55 | 31.3519 | 76.7036 | 0 | 31.3525 | 76.7056 | 0 | 31.3317 | 76.7128 | 0 | 31.3350 | 76.7056 | 0 | Moderate |
| Bilaspur | Bilaspur | C3 (a) Nala Ka Sidh | 95 | 31.3044 | 76.7125 | 0 | 31.3089 | 76.7228 | 0 | 31.2983 | 76.7231 | 0 | 31.3031 | 76.7283 | 0 | Moderate |
| Bilaspur | Bilaspur | C-49 Kathiun | 34 | 31.4075 | 76.5767 | 0 | 31.4078 | 76.5753 | 0 | 31.4097 | 76.5736 | 0 | 31.4136 | 0.0000 | 0 | High |
| Bilaspur | Bilaspur | UPF Jalagri | 10 | 31.2735 | 76.7551 | 804 | 31.2753 | 76.7529 | 0 | 31.2763 | 76.7509 | 0 | 31.2745 | 76.7494 | 735 | High |
| Bilaspur | Bilaspur | UPF Chehri | 15 | 31.2628 | 76.7601 | 758 | 31.2644 | 76.7644 | 770 | 31.2655 | 76.7639 | 790 | 31.2669 | 76.7660 | 826 | High |
| Bilaspur | Bilaspur | DPF Rattanpur | 15 | 31.2402 | 76.7857 | 1040 | 31.2419 | 76.7858 | 1064 | 31.2438 | 76.7880 | 1047 | 31.2430 | 76.7897 | 1086 | High |
| Bilaspur | Bilaspur | C-48 Thunj | 5 | 31.2527 | 76.7197 | 993 | 31.2499 | 76.7210 | 0 | 31.2499 | 76.7219 | 0 | 31.2516 | 76.7224 | 0 | High |
| Bilaspur | Bilaspur | UPF Baner | 15 | 31.2297 | 76.7555 | 789 | 31.2309 | 76.7560 | 0 | 31.2299 | 76.7579 | 0 | 31.2312 | 76.7573 | 0 | High |
| Bilaspur | Bilaspur | UPF Khurani | 10 | 31.5821 | 76.4107 | 926 | 31.5830 | 76.4067 | 955 | 31.5854 | 76.4090 | 1002 | 31.5869 | 76.4062 | 968 | Moderate |
| Bilaspur | Bilaspur | UPF Bharsara | 18 | 31.2499 | 76.6265 | 0 | 31.2500 | 76.6257 | 0 | 31.2509 | 76.6248 | 0 | 31.2529 | 76.6253 | 0 | High |
| Mandi | Suket | Dhawal, Barpat, Dhawal-II Ahen Sunali | 25 | 31.4170 | 76.8916 | 0 | 31.4211 | 76.9205 | 0 | 31.4070 | 76.8806 | 0 | 31.3574 | 76.8818 | 0 | High |
| Mandi | Suket | OD 305 Salyana | 20 | 31.1178 | 77.5717 | 2128 | 0.0000 | 0.0000 | 0 | 0.0000 | 0.0000 | 0 | 0.0000 | 0.0000 | 0 | High |
| Mandi | Suket | ND 303 Dharli Brad | 10 | 31.3965 | 76.9835 | 0 | 31.5342 | 77.1144 | 0 | 0.0000 | 0.0000 | 0 | 0.0000 | 0.0000 | 0 | High |
| Mandi | Suket | ND 299 Gehru II | 65 | 31.3737 | 76.9641 | 1829 | 0.0000 | 0.0000 | 0 | 0.0000 | 0.0000 | 0 | 0.0000 | 0.0000 | 0 | High |
| Mandi | Suket | ND 301 Gehru | 10 | 31.4192 | 76.9666 | 0 | 31.4024 | 76.9492 | 0 | 0.0000 | 0.0000 | 0 | 0.0000 | 0.0000 | 0 | High |
| Hamirpur | Hamirpur | P-16 Dhar Sidh C-3c | 75 | 31.5947 | 76.7681 | 817 | 31.5992 | 76.7908 | 828 | 31.6622 | 76.7600 | 795 | 31.6811 | 76.7658 | 812 | Moderate |
| Hamirpur | Hamirpur | P-17 Samella C2c | 15 | 31.4685 | 76.5860 | 682 | 31.4682 | 76.5859 | 680 | 31.4683 | 76.5864 | 678 | 31.4688 | 76.5864 | 683 | High |
| Hamirpur | Hamirpur | P-24 Ghangot C1a | 15 | 31.5064 | 76.7511 | 740 | 31.5614 | 76.8194 | 765 | 31.6806 | 76.9069 | 780 | 31.8194 | 77.0611 | 810 | Moderate |
| Hamirpur | Hamirpur | U-106 Gharyani Jalta | 15 | 31.4740 | 76.5825 | 782 | 31.4775 | 76.5932 | 0 | 31.4740 | 76.5919 | 0 | 31.4754 | 76.5868 | 0 | High |
| Hamirpu | Hamirpur | P-16 Dhar | 15 | 31.495 | 76.778 | 0 | 31.506 | 76.805 | 0 | 31.504 | 76.745 | 0 | 31.4747 | 76.736 | 0 | Mod |

| | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| r | | Sidh C5a | | 3 | 3 | | 1 | 6 | | 2 | 8 | | | 7 | | erate |
| Hamirpur | Hamirpur | P-14 Relli C5b | 25 | 31.3531 | 76.7812 | 1088 | 31.3533 | 76.7816 | 1084 | 31.3532 | 76.7817 | 1074 | 31.3534 | 76.7816 | 1087 | High |
| Hamirpur | Hamirpur | P-11 Sathrion | 15 | 31.5129 | 76.5877 | 0 | 31.5123 | 76.5876 | 0 | 31.5119 | 76.5870 | 0 | 31.5132 | 76.5950 | 0 | High |
| Hamirpur | Hamirpur | P 21 Bijhari | 20 | 31.5878 | 76.5481 | 875 | 31.5392 | 76.5344 | 870 | 31.5381 | 76.5334 | 0 | 31.5391 | 76.5334 | 870 | High |
| Hamirpur | Hamirpur | P 19 Kharal | 80 | 31.5455 | 76.5719 | 0 | 31.5444 | 76.5617 | 0 | 31.6772 | 76.6961 | 0 | 31.5386 | 76.5711 | 0 | High |
| Hamirpur | Hamirpur | U 78 Sulhori | 10 | 31.5661 | 76.5447 | 892 | 31.5639 | 76.5636 | 890 | 31.5772 | 76.5400 | 850 | 31.5700 | 76.5389 | 0 | High |
| Hamirpur | Hamirpur | U 81 Kathiana | 10 | 31.5644 | 76.5461 | 850 | 31.5653 | 76.5450 | 865 | 31.5778 | 76.5406 | 840 | 31.5767 | 76.5556 | 0 | High |
| Hamirpur | Hamirpur | P 25 Khahsora | 50 | 31.5710 | 76.5394 | 943 | 31.5694 | 76.5414 | 975 | 31.5702 | 76.5400 | 940 | 31.5692 | 76.5383 | 929 | High |
| Hamirpur | Hamirpur | Kathiana | 20 | 31.5756 | 76.5647 | 810 | 0.0000 | 0.0000 | 0 | 0.0000 | 0.0000 | 0 | 0.0000 | 0.0000 | 0 | High |
| Hamirpur | Hamirpur | Choa | 15 | 31.5679 | 76.5606 | 820 | 0.0000 | 0.0000 | 0 | 0.0000 | 0.0000 | 0 | 0.0000 | 0.0000 | 0 | High |
| Hamirpur | Hamirpur | Put Aua Dugar | 20 | 31.5744 | 76.5183 | 921 | 31.5817 | 76.5172 | 930 | 31.5722 | 76.5167 | 920 | 31.5778 | 76.5222 | 910 | High |
| Solan | Solan | Parli Rano | 20 | 30.9410 | 77.0647 | 1266 | 0.0000 | 0.0000 | 0 | 0.0000 | 0.0000 | 0 | 0.0000 | 0.0000 | 0 | High |
| Bilaspur | Bilaspur | C-17 Chaugan | 18 | 31.3372 | 76.6142 | 0 | 31.3367 | 76.6150 | 0 | 31.3422 | 76.6161 | 0 | 31.3383 | 76.6161 | 0 | High |
| Bilaspur | Bilaspur | DPF (9a) Chalheli | 75 | 31.4514 | 76.5322 | 0 | 31.4519 | 76.5319 | 0 | 31.4528 | 76.5319 | 0 | 31.4506 | 76.5314 | 0 | High |
| Mandi | Suket | ND 292 Fafna | 75 | 31.3657 | 76.9514 | 0 | 31.3621 | 76.9499 | 0 | 31.3663 | 76.9841 | 0 | 31.3678 | 76.9409 | 0 | High |
| Mandi | Suket | ND 293 Chauri-I | 15 | 31.3657 | 76.9514 | 0 | 31.3621 | 76.9499 | 0 | 31.3663 | 76.9841 | 0 | 31.3678 | 76.9409 | 0 | High |
| Mandi | Suket | ND 294 Chauri-II | 65 | 31.3657 | 76.9514 | 0 | 31.3621 | 76.9499 | 0 | 31.3663 | 76.9841 | 0 | 31.3678 | 76.9409 | 0 | High |
| Mandi | Suket | OD 296 Chalon | 25 | 31.3657 | 76.9514 | 0 | 31.3621 | 76.9499 | 0 | 31.3663 | 76.9841 | 0 | 31.3678 | 76.9409 | 0 | High |
| Mandi | Suket | ND 298 Neri Roparu | 55 | 31.3657 | 76.9514 | 0 | 31.3621 | 76.9499 | 0 | 31.3663 | 76.9841 | 0 | 31.3678 | 76.9409 | 0 | High |
| Solan | Kunihar | DPF Sharon | 85 | 31.1367 | 76.9517 | 0 | 31.1400 | 76.9494 | 0 | 31.1389 | 76.9497 | 0 | 31.1383 | 76.9500 | 0 | High |
| Bilaspur | Bilaspur | Bilaspur | 15 | 31.3392 | 76.7632 | 828 | 31.3335 | 76.7634 | 0 | 3.3336 | 76.7635 | 0 | 31.3336 | 76.9617 | 0 | High |
| Bilaspur | Bilaspur | Kunihar | 15 | 30.0806 | 76.9618 | 963 | 30.0806 | 76.9618 | 0 | 30.0806 | 76.9618 | 0 | 30.0806 | 76.9618 | 1870 | High |
| Solan | Kunihar | Kunihar | 20 | 31.0813 | 76.9614 | 955 | 0.0000 | 0.0000 | 0 | 0.0000 | 0.0000 | 0 | 0.0000 | 0.0000 | 0 | High |
| Kullu | Anni | Ani at Luheri | 10 | 31.4336 | 77.4172 | 1225 | 0.0000 | 0.0000 | 0 | 0.0000 | 0.0000 | 0 | 0.0000 | 0.0000 | 0 | Moderate |
| Una | Una | Una | 25 | 31.6788 | 76.3241 | 640 | 31.6793 | 76.3241 | 645 | 31.6801 | 76.3262 | 650 | 31.6801 | 76.3262 | 643 | High |
| Shimla | Rampur | UPF Luhri C271 | 25 | 31.4509 | 77.6378 | 1159 | 0.0000 | 0.0000 | 0 | 0.0000 | 0.0000 | 0 | 0.0000 | 0.0000 | 0 | High |
| Mandi | Suket | Suket | 3 | 31.5060 | 76.8833 | 964 | 0.0000 | 0.0000 | 0 | 0.0000 | 0.0000 | 0 | 0.0000 | 0.0000 | 0 | Moderate |
| Mandi | Karsog | Karsog | 30 | 31.5060 | 76.8833 | 964 | 0.0000 | 0.0000 | 0 | 0.0000 | 0.0000 | 0 | 0.0000 | 0.0000 | 0 | Moderate |
| Mandi | Nachan | Nachan | 120 | 31.5060 | 76.8833 | 964 | 0.0000 | 0.0000 | 0 | 0.0000 | 0.0000 | 0 | 0.0000 | 0.0000 | 0 | Moderate |
| Lahaul Spiti | Spiti Wildlife | Spiti WL | 25 | 32.2461 | 78.0349 | 3671 | 0.0000 | 0.0000 | 0 | 0.0000 | 0.0000 | 0 | 0.0000 | 0.0000 | 0 | Low |
| Shimla | Shimla | Shimla | 35 | 31.0831 | 77.1367 | 1803 | 0.0000 | 0.0000 | 0 | 0.0000 | 0.0000 | 0 | 0.0000 | 0.0000 | 0 | High |
| Shimla | Theog | Theog | 130 | 31.1205 | 77.3616 | 2301 | 0.0000 | 0.0000 | 0 | 0.0000 | 0.0000 | 0 | 0.0000 | 0.0000 | 0 | High |
| Solan | Solan | Solan | 15 | 30.9088 | 77.0912 | 1465 | 0.0000 | 0.0000 | 0 | 0.0000 | 0.0000 | 0 | 0.0000 | 0.0000 | 0 | High |
| Solan | Nalagarh | Nalagarh | 20 | 31.0461 | 76.7024 | 346 | 0.0000 | 0.0000 | 0 | 0.0000 | 0.0000 | 0 | 0.0000 | 0.0000 | 0 | Moderate |
| Shimla | Rampur | Anni at | 10 | 31.450 | 77.637 | 115 | 0.0000 | 0.0000 | 0 | 0.0000 | 0.0000 | 0 | 0.0000 | 0.0000 | 0 | High |

| | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Luhri | | 9 | 8 | 9 | | | | | | | | | | |
| Shimla | Rampur | Rampur | 15 | 31.4509 | 77.6378 | 1159 | 0.0000 | 0.0000 | 0 | 0.0000 | 0.0000 | 0 | 0.0000 | 0.0000 | 0 | High |
| Kinnaur | Kinnaur | Kinnaur | 20 | 31.5388 | 78.2675 | 2419 | 0.0000 | 0.0000 | 0 | 0.0000 | 0.0000 | 0 | 0.0000 | 0.0000 | 0 | Low |
| Kinnaur | Kinnaur | Nichar | 20 | 31.5388 | 78.2675 | 2419 | 0.0000 | 0.0000 | 0 | 0.0000 | 0.0000 | 0 | 0.0000 | 0.0000 | 0 | Low |
| Shimla | Shimla | Chhachhru Nalla (Ganoti Jungle - D-82 Kasumpti) | 40 | 31.0756 | 77.1878 | 1860 | 31.0756 | 77.1877 | 1868 | 31.0755 | 77.3514 | 1850 | 31.0754 | 77.1875 | 1870 | High |
| Shimla | Shimla | Ganoti Nalla ( D-82 Kasumpti) | 30 | 31.0756 | 77.1878 | 0 | 31.0756 | 77.1877 | 0 | 31.0755 | 77.3514 | 0 | 31.0754 | 77.1875 | 0 | High |
| Shimla | Theog | Dudhbag-1 | 15 | 31.1417 | 77.1394 | 2195 | 31.1417 | 77.1394 | 0 | 0.0000 | 0.0000 | 0 | 0.0000 | 0.0000 | 0 | Moderate |
| Shimla | Theog | Jugo Nalla -1 | 20 | 31.2482 | 77.5727 | 1858 | 31.1404 | 77.3443 | 0 | 0.0000 | 0.0000 | 0 | 0.0000 | 0.0000 | 0 | High |
| Shimla | Theog | kadyog nalla -1 | 25 | 31.1439 | 77.3100 | 1999 | 31.1456 | 77.3114 | 1943 | 31.1422 | 77.3058 | 2180 | 0.0000 | 0.0000 | 0 | High |
| Shimla | Theog | kalyog -1 | 25 | 31.1444 | 77.3056 | 2184 | 31.1464 | 77.3053 | 2148 | 0.0000 | 0.0000 | 0 | 0.0000 | 0.0000 | 0 | High |
| Shimla | Theog | Kiyary Nalla -1 | 30 | 31.1369 | 77.3164 | 2100 | 0.0000 | 0.0000 | 0 | 0.0000 | 0.0000 | 0 | 0.0000 | 0.0000 | 0 | High |
| Shimla | Theog | Lagal Nalla - 1 | 20 | 31.1417 | 77.2160 | 0 | 0.0000 | 0.0000 | 0 | 0.0000 | 0.0000 | 0 | 0.0000 | 0.0000 | 0 | High |
| Mandi | Nachan | Nachan -2 | 45 | 31.1503 | 77.3050 | 1550 | 31.1522 | 77.3053 | 1715 | 0.0000 | 0.0000 | 0 | 0.0000 | 0.0000 | 0 | Moderate |
| Mandi | Nachan | Nachan -2 | 40 | 32.0650 | 77.1664 | 2069 | 0.0000 | 0.0000 | 0 | 0.0000 | 0.0000 | 0 | 0.0000 | 0.0000 | 0 | High |
| Mandi | Nachan | Bharoon-1 | 30 | 31.5853 | 77.1267 | 0 | 31.5850 | 77.1278 | 0 | 31.5875 | 77.1258 | 0 | 31.5858 | 77.1231 | 0 | High |
| Mandi | Nachan | Bhella | 30 | 31.8219 | 77.3122 | 1388 | 31.7858 | 77.2567 | 1365 | 31.7781 | 77.0900 | 1307 | 0.0000 | 0.0000 | 0 | High |
| Mandi | Nachan | Bhoombhai site | 35 | 31.9042 | 77.3169 | 2397 | 31.6675 | 77.2600 | 2271 | 31.6847 | 77.2075 | 2180 | 0.0000 | 0.0000 | 0 | High |
| Mandi | Nachan | Baneshidhar | 30 | 31.5550 | 77.1045 | 0 | 31.5528 | 77.0984 | 0 | 31.5332 | 77.1212 | 0 | 31.5412 | 77.1239 | 0 | High |
| Mandi | Nachan | Malach | 30 | 0.0000 | 0.0000 | 0 | 0.0000 | 0.0000 | 0 | 0.0000 | 0.0000 | 0 | 0.0000 | 0.0000 | 0 | Low |
| Kinnaur | Kinnaur | Lahyok | 40 | 31.8478 | 78.6475 | 3852 | 0.0000 | 0.0000 | 0 | 0.0000 | 0.0000 | 0 | 0.0000 | 0.0000 | 0 | Low |
| Kinnaur | Kinnaur | Nigul Seri-1 | 35 | 31.5659 | 77.8849 | 1566 | 31.5661 | 77.8750 | 1470 | 31.5632 | 77.8833 | 1631 | 31.5544 | 77.8783 | 1445 | High |
| Kinnaur | Kinnaur | khaia (p/land ) | 45 | 31.5334 | 77.9179 | 0 | 31.5260 | 77.9165 | 0 | 31.5260 | 77.9165 | 0 | 31.5653 | 77.9326 | 0 | Moderate |
| Mandi | Karsog | D-127 Sanach-1 | 45 | 31.3261 | 77.2958 | 0 | 31.3269 | 77.2975 | 0 | 31.3247 | 77.2956 | 0 | 31.3256 | 77.2875 | 0 | High |
| Mandi | Karsog | D-203 Thach-1 | 30 | 31.3304 | 77.2840 | 0 | 31.3305 | 77.2840 | 0 | 31.3291 | 77.2849 | 0 | 31.3291 | 77.2859 | 0 | High |
| Mandi | Karsog | D-257 Jagal | 40 | 31.4691 | 77.2736 | 2187 | 31.4690 | 77.2733 | 2143 | 31.4691 | 77.2737 | 2155 | 31.4694 | 77.2739 | 2178 | High |
| Shimla | Rampur | UPF Luhri C271 | 25 | 31.4509 | 77.6378 | 1159 | 0.0000 | 0.0000 | 0 | 0.0000 | 0.0000 | 0 | 0.0000 | 0.0000 | 0 | High |
| Shimla | Rampur | UPF Luhri C271-1 | 35 | 31.4509 | 77.6378 | 1159 | 0.0000 | 0.0000 | 0 | 0.0000 | 0.0000 | 0 | 0.0000 | 0.0000 | 0 | High |
| Shimla | Rampur | UPF Luhri C271 | 35 | 31.4509 | 77.6378 | 1159 | 0.0000 | 0.0000 | 0 | 0.0000 | 0.0000 | 0 | 0.0000 | 0.0000 | 0 | High |
| Shimla | Rampur | UPF Newal - 1 | 40 | 31.5327 | 77.7551 | 1987 | 31.5321 | 77.7560 | 1893 | 31.5336 | 31.5336 | 1854 | 31.5348 | 77.7560 | 1965 | Moderate |

## Division and Model Wise Proposed Area for Fire Protection and Natural Regeneration in Himachal Pradesh

| Sr.No. | Division | Activity | I | II | | III | | IV | V | Phase I | | VI | VII | Phase II | Total Area in ha |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Estb | Estb | Maint | Estb | Maint | Maint | Maint | Estb | Maint | Maint | Maint | Maint | |
| 1 | Anni | SL/HP/NL/14 - Protection Model for Natural Regeneration | 150 | 200 | 150 | 0 | 350 | 350 | 350 | 350 | 350 | 200 | 0 | 200 | 350 |
| | | SL/HP/NL/15 - Fire Protection Model | 100 | 0 | 100 | 0 | 100 | 100 | 100 | 100 | 100 | 0 | 0 | 0 | 100 |
| 2 | Bilaspur | SL/HP/NL/14 - Protection Model for Natural Regeneration | 150 | 300 | 150 | 0 | 450 | 450 | 450 | 450 | 450 | 300 | 0 | 300 | 450 |
| | | SL/HP/NL/15 - Fire Protection Model | 200 | 0 | 200 | 0 | 200 | 200 | 200 | 200 | 200 | 0 | 0 | 0 | 200 |
| 3 | Hamirpur | SL/HP/NL/14 - Protection Model for Natural Regeneration | 200 | 300 | 200 | 0 | 500 | 500 | 500 | 500 | 500 | 300 | 0 | 300 | 500 |
| | | SL/HP/NL/15 - Fire Protection Model | 100 | 0 | 100 | 0 | 100 | 100 | 100 | 100 | 100 | 0 | 0 | 0 | 100 |
| 4 | Karsog | SL/HP/NL/14 - Protection Model for Natural Regeneration | 0 | 200 | 0 | 130 | 200 | 330 | 330 | 330 | 330 | 330 | 130 | 330 | 330 |
| | | SL/HP/NL/15 - Fire Protection Model | 100 | 0 | 100 | 0 | 100 | 100 | 100 | 100 | 100 | 0 | 0 | 0 | 100 |
| 5 | Kinnaur | SL/HP/NL/14 - Protection Model for Natural Regeneration | 0 | 300 | 0 | 200 | 300 | 500 | 500 | 500 | 500 | 500 | 200 | 500 | 500 |
| | | SL/HP/NL/15 - Fire Protection Model | 100 | 0 | 100 | 0 | 100 | 100 | 100 | 100 | 100 | 0 | 0 | 0 | 100 |
| 6 | Kotgarh | SL/HP/NL/14 - Protection Model for Natural Regeneration | 0 | 200 | 0 | 180 | 200 | 380 | 380 | 380 | 380 | 380 | 180 | 380 | 380 |
| | | SL/HP/NL/15 - Fire Protection Model | 105 | 0 | 105 | 0 | 105 | 105 | 105 | 105 | 105 | 0 | 0 | 0 | 105 |
| 7 | Kunihar | SL/HP/NL/14 - Protection Model for Natural Regeneration | 150 | 0 | 150 | 180 | 150 | 330 | 330 | 330 | 330 | 180 | 180 | 180 | 330 |

| Sr.No. | Division | Activity | I | II | | III | | IV | V | Phase I | | VI | VII | Phase II | Total Area in ha |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Estb | Estb | Maint | Estb | Maint | Maint | Maint | Estb | Maint | Maint | Maint | Maint | |
| **8** | **Nachan** | **SL/HP/NL/14 - Protection Model for Natural Regeneration** | 180 | 300 | 180 | 0 | 480 | 480 | 480 | 480 | 480 | 300 | 0 | 300 | 480 |
| | | **SL/HP/NL/15 - Fire Protection Model** | 100 | 0 | 100 | 0 | 100 | 100 | 100 | 100 | 100 | 0 | 0 | 0 | 100 |
| **9** | **Nalagarh** | **SL/HP/NL/14 - Protection Model for Natural Regeneration** | 200 | 300 | 200 | 0 | 500 | 500 | 500 | 500 | 500 | 300 | 0 | 300 | 500 |
| | | **SL/HP/NL/15 - Fire Protection Model** | 100 | 0 | 100 | 0 | 100 | 100 | 100 | 100 | 100 | 0 | 0 | 0 | 100 |
| **10** | **Rampur** | **SL/HP/NL/14 - Protection Model for Natural Regeneration** | 150 | 300 | 150 | 0 | 450 | 450 | 450 | 450 | 450 | 300 | 0 | 300 | 450 |
| | | **SL/HP/NL/15 - Fire Protection Model** | 100 | 0 | 100 | 0 | 100 | 100 | 100 | 100 | 100 | 0 | 0 | 0 | 100 |
| **11** | **Shimla** | **SL/HP/NL/14 - Protection Model for Natural Regeneration** | 250 | 300 | 250 | 300 | 550 | 850 | 850 | 850 | 850 | 600 | 300 | 600 | 850 |
| | | **SL/HP/NL/15 - Fire Protection Model** | 200 | 0 | 200 | 0 | 200 | 200 | 200 | 200 | 200 | 0 | 0 | 0 | 200 |
| **12** | **Solan** | **SL/HP/NL/14 - Protection Model for Natural Regeneration** | 180 | 300 | 180 | 0 | 480 | 480 | 480 | 480 | 480 | 300 | 0 | 300 | 480 |
| | | **SL/HP/NL/15 - Fire Protection Model** | 100 | 0 | 100 | 0 | 100 | 100 | 100 | 100 | 100 | 0 | 0 | 0 | 100 |
| **13** | **Suket** | **SL/HP/NL/14 - Protection Model for Natural Regeneration** | 180 | 300 | 180 | 0 | 480 | 480 | 480 | 480 | 480 | 300 | 0 | 300 | 480 |
| | | **SL/HP/NL/15 - Fire Protection Model** | 80 | 0 | 80 | 0 | 80 | 80 | 80 | 80 | 80 | 0 | 0 | 0 | 80 |
| **14** | **Theog** | **SL/HP/NL/14 - Protection Model for Natural Regeneration** | 150 | 300 | 150 | 0 | 450 | 450 | 450 | 450 | 450 | 300 | 0 | 300 | 450 |
| | | **SL/HP/NL/15 - Fire Protection Model** | 100 | 0 | 100 | 0 | 100 | 100 | 100 | 100 | 100 | 0 | 0 | 0 | 100 |

| Sr.No. | Division | Activity | I | II | | III | | IV | V | Phase I | | VI | VII | Phase II | Total Area in ha |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Estb | Estb | Maint | Estb | Maint | Maint | Maint | Estb | Maint | Maint | Maint | Maint | |
| **15** | **Una** | **SL/HP/NL/14 - Protection Model for Natural Regeneration** | 200 | 300 | 200 | 0 | 500 | 500 | 500 | 500 | 500 | 300 | 0 | 300 | 500 |
| | | **SL/HP/NL/15 - Fire Protection Model** | 100 | 0 | 100 | 0 | 100 | 100 | 100 | 100 | 100 | 0 | 0 | 0 | 100 |
| **Total** | | | **3725** | **3900** | **3725** | **990** | **7625** | **8615** | **8615** | **8615** | **8615** | **4890** | **990** | **4890** | **8615** |

## Division Wise Proposed Cost for Fire Protection and Natural Regeneration in Himachal Pradesh

| Sr. | Division | Activity | I | II | | III | | IV | V | Phase I | | VI | VII | Phase II | Total Cost in lakh |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Estb | Estb | Maint | Estb | Maint | Maint | Maint | Estb | Maint | Maint | Maint | Maint | |
| 1 | Anni | SL/HP/NL/14 - Protection Model for Natural Regeneration | 192.45 | 256.60 | 23.08 | 0.00 | 52.10 | 48.19 | 38.57 | 449.05 | 161.94 | 16.29 | 0.00 | 16.29 | 627.28 |
| | | SL/HP/NL/15 - Fire Protection Model | 32.86 | 0.00 | 24.46 | 0.00 | 24.27 | 23.92 | 23.41 | 32.86 | 96.06 | 0.00 | 0.00 | 0.00 | 128.92 |
| 2 | Bilaspur | SL/HP/NL/14 - Protection Model for Natural Regeneration | 192.45 | 384.90 | 23.08 | 0.00 | 67.49 | 62.41 | 51.74 | 577.35 | 204.72 | 24.44 | 0.00 | 24.44 | 806.51 |
| | | SL/HP/NL/15 - Fire Protection Model | 65.72 | 0.00 | 48.92 | 0.00 | 48.54 | 47.84 | 46.82 | 65.72 | 192.12 | 0.00 | 0.00 | 0.00 | 257.84 |
| 3 | Hamirpur | SL/HP/NL/14 - Protection Model for Natural Regeneration | 256.60 | 384.90 | 30.78 | 0.00 | 74.60 | 69.00 | 55.81 | 641.50 | 230.19 | 24.44 | 0.00 | 24.44 | 896.13 |
| | | SL/HP/NL/15 - Fire Protection Model | 32.86 | 0.00 | 24.46 | 0.00 | 24.27 | 23.92 | 23.41 | 32.86 | 96.06 | 0.00 | 0.00 | 0.00 | 128.92 |

| Sr. | Division | Activity | I | II | | III | | IV | V | Phase I | | VI | VII | Phase II | Total Cost in lakh |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Estb | Estb | Maint | Estb | Maint | Maint | Maint | Estb | Maint | Maint | Maint | Maint | |
| 4 | Karsog | SL/HP/NL/14 - Protection Model for Natural Regeneration | 0.00 | 256.60 | 0.00 | 166.79 | 30.78 | 48.44 | 44.83 | 423.39 | 124.05 | 33.42 | 17.13 | 50.55 | 597.99 |
| | | SL/HP/NL/15 - Fire Protection Model | 32.86 | 0.00 | 24.46 | 0.00 | 24.27 | 23.92 | 23.41 | 32.86 | 96.06 | 0.00 | 0.00 | 0.00 | 128.92 |
| 5 | Kinnaur | SL/HP/NL/14 - Protection Model for Natural Regeneration | 0.00 | 384.90 | 0.00 | 256.60 | 46.17 | 73.43 | 67.95 | 641.50 | 187.55 | 50.79 | 26.35 | 77.14 | 906.19 |
| | | SL/HP/NL/15 - Fire Protection Model | 32.86 | 0.00 | 24.46 | 0.00 | 24.27 | 23.92 | 23.41 | 32.86 | 96.06 | 0.00 | 0.00 | 0.00 | 128.92 |
| 6 | Kotgarh | SL/HP/NL/14 - Protection Model for Natural Regeneration | 0.00 | 256.60 | 0.00 | 230.94 | 30.78 | 56.13 | 51.94 | 487.54 | 138.85 | 40.00 | 23.71 | 63.71 | 690.10 |
| | | SL/HP/NL/15 - Fire Protection Model | 34.51 | 0.00 | 25.69 | 0.00 | 25.48 | 25.12 | 24.58 | 34.51 | 100.87 | 0.00 | 0.00 | 0.00 | 135.38 |
| 7 | Kunihar | SL/HP/NL/14 - Protection Model for Natural Regeneration | 192.45 | 0.00 | 23.08 | 230.94 | 21.32 | 47.46 | 37.81 | 423.39 | 129.67 | 23.71 | 23.71 | 47.42 | 600.48 |

| Sr. | Division | Activity | I | II | | III | | IV | V | Phase I | | VI | VII | Phase II | Total Cost in lakh |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Estb | Estb | Maint | Estb | Maint | Maint | Maint | Estb | Maint | Maint | Maint | Maint | |
| **8** | **Nachan** | **SL/HP/NL/14 - Protection Model for Natural Regeneration** | 230.94 | 384.90 | 27.70 | 0.00 | 71.76 | 66.36 | 54.18 | 615.84 | 220.00 | 24.44 | 0.00 | 24.44 | 860.28 |
| | | **SL/HP/NL/15 - Fire Protection Model** | 32.86 | 0.00 | 24.46 | 0.00 | 24.27 | 23.92 | 23.41 | 32.86 | 96.06 | 0.00 | 0.00 | 0.00 | 128.92 |
| **9** | **Nalagarh** | **SL/HP/NL/14 - Protection Model for Natural Regeneration** | 256.60 | 384.90 | 30.78 | 0.00 | 74.60 | 69.00 | 55.81 | 641.50 | 230.19 | 24.44 | 0.00 | 24.44 | 896.13 |
| | | **SL/HP/NL/15 - Fire Protection Model** | 32.86 | 0.00 | 24.46 | 0.00 | 24.27 | 23.92 | 23.41 | 32.86 | 96.06 | 0.00 | 0.00 | 0.00 | 128.92 |
| **10** | **Rampur** | **SL/HP/NL/14 - Protection Model for Natural Regeneration** | 192.45 | 384.90 | 23.08 | 0.00 | 67.49 | 62.41 | 51.74 | 577.35 | 204.72 | 24.44 | 0.00 | 24.44 | 806.51 |
| | | **SL/HP/NL/15 - Fire Protection Model** | 32.86 | 0.00 | 24.46 | 0.00 | 24.27 | 23.92 | 23.41 | 32.86 | 96.06 | 0.00 | 0.00 | 0.00 | 128.92 |
| **11** | **Shimla** | **SL/HP/NL/14 - Protection Model for Natural Regeneration** | 320.75 | 384.90 | 38.47 | 384.90 | 81.71 | 121.75 | 102.54 | 1090.55 | 344.47 | 63.96 | 39.52 | 103.48 | 1538.50 |

| Sr. | Division | Activity | I | II | | III | | IV | V | Phase I | | VI | VII | Phase II | Total Cost in lakh |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Estb | Estb | Maint | Estb | Maint | Maint | Maint | Estb | Maint | Maint | Maint | Maint | |
| | | **SL/HP/NL/15 - Fire Protection Model** | 65.72 | 0.00 | 48.92 | 0.00 | 48.54 | 47.84 | 46.82 | 65.72 | 192.12 | 0.00 | 0.00 | 0.00 | 257.84 |
| **12** | **Solan** | **SL/HP/NL/14 - Protection Model for Natural Regeneration** | 230.94 | 384.90 | 27.70 | 0.00 | 71.76 | 66.36 | 54.18 | 615.84 | 220.00 | 24.44 | 0.00 | 24.44 | 860.28 |
| | | **SL/HP/NL/15 - Fire Protection Model** | 32.86 | 0.00 | 24.46 | 0.00 | 24.27 | 23.92 | 23.41 | 32.86 | 96.06 | 0.00 | 0.00 | 0.00 | 128.92 |
| **13** | **Suket** | **SL/HP/NL/14 - Protection Model for Natural Regeneration** | 230.94 | 384.90 | 27.70 | 0.00 | 71.76 | 66.36 | 54.18 | 615.84 | 220.00 | 24.44 | 0.00 | 24.44 | 860.28 |
| | | **SL/HP/NL/15 - Fire Protection Model** | 26.29 | 0.00 | 19.57 | 0.00 | 19.41 | 19.14 | 18.73 | 26.29 | 76.85 | 0.00 | 0.00 | 0.00 | 103.14 |
| **14** | **Theog** | **SL/HP/NL/14 - Protection Model for Natural Regeneration** | 192.45 | 384.90 | 23.08 | 0.00 | 67.49 | 62.41 | 51.74 | 577.35 | 204.72 | 24.44 | 0.00 | 24.44 | 806.51 |
| | | **SL/HP/NL/15 - Fire Protection Model** | 32.86 | 0.00 | 24.46 | 0.00 | 24.27 | 23.92 | 23.41 | 32.86 | 96.06 | 0.00 | 0.00 | 0.00 | 128.92 |
| **15** | **Una** | **SL/HP/NL/14 - Protection** | 256.60 | 384.90 | 30.78 | 0.00 | 74.60 | 69.00 | 55.81 | 641.50 | 230.19 | 24.44 | 0.00 | 24.44 | 896.13 |

| Sr. | Division | Activity | I | II | | III | | IV | V | Phase I | | VI | VII | Phase II | Total Cost in lakh |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Estb | Estb | Maint | Estb | Maint | Maint | Maint | Estb | Maint | Maint | Maint | Maint | |
| | | **Model for Natural Regeneration** | | | | | | | | | | | | | |
| | | **SL/HP/NL/15 - Fire Protection Model** | 32.86 | 0.00 | 24.46 | 0.00 | 24.27 | 23.92 | 23.41 | 32.86 | 96.06 | 0.00 | 0.00 | 0.00 | 128.92 |
| **Total** | | | **3266.46** | **5003.70** | **717.01** | **1270.17** | **1289.08** | **1367.85** | **1199.88** | **9540.33** | **4573.82** | **448.13** | **130.42** | **578.55** | **14692.70** |

**Division and Model wise Area of Agriculture Landscape of Himachal Pradesh**

| Sr. No | Division | Activity/Model | I | II | | III | | IV | V | Phase-I | | VII | Phase-II | Total Area in Hac |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Estb | Estb | Maint | Estb | Maint | Maint | Maint | Estb | Maint | Maint | Maint | |
| 1. | Anni | SL/HP/AL/01 - Boundary Plantation Model | 40 | 40 | 40 | 80 | 80 | 160 | 120 | 160 | 160 | 80 | 120 | 160 |
| | | SL/HP/AL/02 - Block Plantation Model | 10 | 10 | 10 | 10 | 20 | 30 | 20 | 30 | 30 | 10 | 20 | 30 |
| 2 | Bilaspur | SL/HP/AL/01 - Boundary Plantation Model | 12 | 12 | 12 | 12 | 24 | 36 | 24 | 36 | 36 | 12 | 24 | 36 |
| | | SL/HP/AL/02 - Block Plantation Model | 12 | 12 | 12 | 12 | 24 | 36 | 24 | 36 | 36 | 12 | 24 | 36 |
| 3 | Hamirpur | SL/HP/AL/01 - Boundary Plantation Model | 50 | 45 | 50 | 0 | 95 | 95 | 45 | 95 | 95 | 0 | 45 | 95 |
| | | SL/HP/AL/02 - Block Plantation Model | 15 | 18 | 15 | 20 | 33 | 53 | 38 | 53 | 53 | 20 | 38 | 53 |
| 4 | Karsog | SL/HP/AL/01 - Boundary Plantation Model | 0 | 40 | 0 | 50 | 40 | 90 | 90 | 90 | 90 | 50 | 90 | 90 |
| | | SL/HP/AL/02 - Block Plantation Model | 10 | 0 | 10 | 22 | 10 | 32 | 22 | 32 | 32 | 22 | 22 | 32 |
| 5 | Kinnaur | SL/HP/AL/01 - Boundary Plantation Model | 45 | 40 | 45 | 40 | 85 | 125 | 80 | 125 | 125 | 40 | 80 | 125 |
| | | SL/HP/AL/02 - Block Plantation Model | 5 | 10 | 5 | 7 | 15 | 22 | 17 | 22 | 22 | 7 | 17 | 22 |
| 6 | Kotgarh | SL/HP/AL/01 - Boundary Plantation Model | 50 | 50 | 50 | 40 | 100 | 140 | 90 | 140 | 140 | 40 | 90 | 140 |

| Sr. No | Division | Activity/Model | I | II | | III | | IV | V | Phase-I | | VII | Phase-II | Total Area in Hac |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Estb | Estb | Maint | Estb | Maint | Maint | Maint | Estb | Maint | Maint | Maint | |
| | | **SL/HP/AL/02 - Block Plantation Model** | 10 | 10 | 10 | 10 | 20 | 30 | 20 | 30 | 30 | 10 | 20 | 30 |
| **7** | **Kunihar** | **SL/HP/AL/01 - Boundary Plantation Model** | 80 | 40 | 80 | 35 | 120 | 155 | 75 | 155 | 155 | 35 | 75 | 155 |
| | | **SL/HP/AL/02 - Block Plantation Model** | 8 | 10 | 8 | 0 | 18 | 18 | 10 | 18 | 18 | 0 | 10 | 18 |
| **8** | **Nachan** | **SL/HP/AL/01 - Boundary Plantation Model** | 40 | 40 | 40 | 40 | 80 | 120 | 80 | 120 | 120 | 40 | 80 | 120 |
| | | **SL/HP/AL/02 - Block Plantation Model** | 10 | 18 | 10 | 10 | 28 | 38 | 28 | 38 | 38 | 10 | 28 | 38 |
| **9** | **Nalagarh** | **SL/HP/AL/01 - Boundary Plantation Model** | 50 | 50 | 50 | 40 | 100 | 140 | 90 | 140 | 140 | 40 | 90 | 140 |
| | | **SL/HP/AL/02 - Block Plantation Model** | 22 | 12 | 22 | 10 | 34 | 44 | 22 | 44 | 44 | 10 | 22 | 44 |
| **10** | **Rampur** | **SL/HP/AL/01 - Boundary Plantation Model** | 50 | 50 | 50 | 40 | 100 | 140 | 90 | 140 | 140 | 40 | 90 | 140 |
| | | **SL/HP/AL/02 - Block Plantation Model** | 10 | 10 | 10 | 10 | 20 | 30 | 20 | 30 | 30 | 10 | 20 | 30 |
| **11** | **Shimla** | **SL/HP/AL/02 - Block Plantation Model** | 40 | 0 | 40 | 0 | 40 | 40 | 0 | 40 | 40 | 0 | 0 | 40 |
| **12** | **Solan** | **SL/HP/AL/01 - Boundary Plantation Model** | 50 | 50 | 50 | 50 | 100 | 150 | 100 | 150 | 150 | 50 | 100 | 150 |
| | | **SL/HP/AL/02 - Block Plantation Model** | 10 | 10 | 10 | 10 | 20 | 30 | 20 | 30 | 30 | 10 | 20 | 30 |
| **13** | **Suket** | **SL/HP/AL/01 - Boundary Plantation Model** | 50 | 45 | 50 | 50 | 95 | 145 | 95 | 145 | 145 | 50 | 95 | 145 |
| | | **SL/HP/AL/02 - Block Plantation Model** | 10 | 20 | 10 | 10 | 30 | 40 | 30 | 40 | 40 | 10 | 30 | 40 |

| Sr. No | Division | Activity/Model | I | II | | III | | IV | V | Phase-I | | VII | Phase-II | Total Area in Hac |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Estb | Estb | Maint | Estb | Maint | Maint | Maint | Estb | Maint | Maint | Maint | |
| **14** | **Theog** | **SL/HP/AL/01 - Boundary Plantation Model** | 50 | 40 | 50 | 40 | 90 | 130 | 80 | 130 | 130 | 40 | 80 | 130 |
| | | **SL/HP/AL/02 - Block Plantation Model** | 8 | 10 | 8 | 7 | 18 | 25 | 17 | 25 | 25 | 7 | 17 | 25 |
| **15** | **Una** | **SL/HP/AL/01 - Boundary Plantation Model** | 50 | 40 | 50 | 48 | 90 | 138 | 88 | 138 | 138 | 48 | 88 | 138 |
| | | **SL/HP/AL/02 - Block Plantation Model** | 10 | 12 | 10 | 10 | 22 | 32 | 22 | 32 | 32 | 10 | 22 | 32 |
| **Total** | | | **807** | **744** | **807** | **713** | **1551** | **2264** | **1457** | **2264** | **2264** | **713** | **1457** | **2264** |

**Division and Model wise cost of Agriculture Landscape of Himachal Pradesh**

| Sr. No | Division | Activity/Model | I | II | | III | | IV | V | Phase-I | | VI | Phase-II | Total cost |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Estb | Estb | Maint | Estb | Maint | Maint | Maint | Estb | Maint | Maint | Maint | |
| 1. | Anni | SL/HP/AL/01 - Boundary Plantation Model | 3.60 | 3.60 | 1.93 | 7.20 | 3.99 | 8.13 | 6.33 | 14.40 | 20.38 | 4.42 | 4.42 | 39.20 |
| | | SL/HP/AL/02 - Block Plantation Model | 4.80 | 4.80 | 2.57 | 4.80 | 5.32 | 8.26 | 5.69 | 14.40 | 21.84 | 2.94 | 2.94 | 39.18 |
| 2 | Bilaspur | SL/HP/AL/01 - Boundary Plantation Model | 1.08 | 1.08 | 0.58 | 1.08 | 1.20 | 1.86 | 1.28 | 3.24 | 4.92 | 0.66 | 0.66 | 8.82 |
| | | SL/HP/AL/02 - Block Plantation Model | 5.76 | 5.76 | 3.08 | 5.76 | 6.38 | 9.91 | 6.83 | 17.28 | 26.20 | 3.53 | 3.53 | 47.01 |
| 3 | Hamirpur | SL/HP/AL/01 - Boundary Plantation Model | 4.50 | 4.05 | 2.41 | 0.00 | 4.75 | 5.08 | 2.48 | 8.55 | 14.72 | 0.00 | 0.00 | 23.27 |
| | | SL/HP/AL/02 - Block Plantation Model | 7.20 | 8.64 | 3.85 | 9.60 | 8.74 | 14.50 | 10.79 | 25.44 | 37.88 | 5.88 | 5.88 | 69.20 |
| 4 | Karsog | SL/HP/AL/01 - Boundary Plantation Model | 0.00 | 3.60 | 0.00 | 4.50 | 1.93 | 4.47 | 4.79 | 8.10 | 11.19 | 2.76 | 2.76 | 22.05 |
| | | SL/HP/AL/02 - Block Plantation Model | 4.80 | 0.00 | 2.57 | 10.56 | 2.75 | 8.59 | 6.05 | 15.36 | 19.96 | 6.47 | 6.47 | 41.79 |
| 5 | Kinnaur | SL/HP/AL/01 - Boundary Plantation Model | 4.05 | 3.60 | 2.17 | 3.60 | 4.25 | 6.47 | 4.27 | 11.25 | 17.16 | 2.21 | 2.21 | 30.62 |
| | | SL/HP/AL/02 - Block Plantation Model | 2.40 | 4.80 | 1.28 | 3.36 | 3.94 | 6.02 | 4.86 | 10.56 | 16.10 | 2.06 | 2.06 | 28.72 |
| 6 | Kotgarh | SL/HP/AL/01 - Boundary Plantation Model | 4.50 | 4.50 | 2.41 | 3.60 | 4.99 | 7.27 | 4.82 | 12.60 | 19.49 | 2.21 | 2.21 | 34.30 |
| | | SL/HP/AL/02 - Block Plantation Model | 4.80 | 4.80 | 2.57 | 4.80 | 5.32 | 8.26 | 5.69 | 14.40 | 21.84 | 2.94 | 2.94 | 39.18 |
| 7 | Kunihar | SL/HP/AL/01 - Boundary Plantation | 7.20 | 3.60 | 3.86 | 3.15 | 6.05 | 8.17 | 4.01 | 13.95 | 22.09 | 1.93 | 1.93 | 37.97 |

| | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | **Model** | | | | | | | | | | | | |
| | | **SL/HP/AL/02 - Block Plantation Model** | 3.84 | 4.80 | 2.05 | 0.00 | 4.77 | 5.10 | 2.94 | 8.64 | 14.86 | 0.00 | 0.00 | 23.50 |
| **8** | **Nachan** | **SL/HP/AL/01 - Boundary Plantation Model** | 3.60 | 3.60 | 1.93 | 3.60 | 3.99 | 6.20 | 4.27 | 10.80 | 16.39 | 2.21 | 2.21 | 29.40 |
| | | **SL/HP/AL/02 - Block Plantation Model** | 4.80 | 8.64 | 2.57 | 4.80 | 7.37 | 10.46 | 8.04 | 18.24 | 28.44 | 2.94 | 2.94 | 49.62 |
| **9** | **Nalagarh** | **SL/HP/AL/01 - Boundary Plantation Model** | 4.50 | 4.50 | 2.41 | 3.60 | 4.99 | 7.27 | 4.82 | 12.60 | 19.49 | 2.21 | 2.21 | 34.30 |
| | | **SL/HP/AL/02 - Block Plantation Model** | 10.56 | 5.76 | 5.65 | 4.80 | 9.13 | 12.34 | 6.28 | 21.12 | 33.40 | 2.94 | 2.94 | 57.46 |
| **10** | **Rampur** | **SL/HP/AL/01 - Boundary Plantation Model** | 4.50 | 4.50 | 2.41 | 3.60 | 4.99 | 7.27 | 4.82 | 12.60 | 19.49 | 2.21 | 2.21 | 34.30 |
| | | **SL/HP/AL/02 - Block Plantation Model** | 4.80 | 4.80 | 2.57 | 4.80 | 5.32 | 8.26 | 5.69 | 14.40 | 21.84 | 2.94 | 2.94 | 39.18 |
| **11** | **Shimla** | **SL/HP/AL/02 - Block Plantation Model** | 19.20 | 0.00 | 10.27 | 0.00 | 10.99 | 11.76 | 0.00 | 19.20 | 33.02 | 0.00 | 0.00 | 52.22 |
| **12** | **Solan** | **SL/HP/AL/01 - Boundary Plantation Model** | 4.50 | 4.50 | 2.41 | 4.50 | 4.99 | 7.75 | 5.34 | 13.50 | 20.49 | 2.76 | 2.76 | 36.75 |
| | | **SL/HP/AL/02 - Block Plantation Model** | 4.80 | 4.80 | 2.57 | 4.80 | 5.32 | 8.26 | 5.69 | 14.40 | 21.84 | 2.94 | 2.94 | 39.18 |
| **13** | **Suket** | **SL/HP/AL/01 - Boundary Plantation Model** | 4.50 | 4.05 | 2.41 | 4.50 | 4.75 | 7.49 | 5.06 | 13.05 | 19.71 | 2.76 | 2.76 | 35.52 |
| | | **SL/HP/AL/02 - Block Plantation Model** | 4.80 | 9.60 | 2.57 | 4.80 | 7.89 | 11.01 | 8.63 | 19.20 | 30.10 | 2.94 | 2.94 | 52.24 |
| **14** | **Theog** | **SL/HP/AL/01 - Boundary Plantation Model** | 4.50 | 3.60 | 2.41 | 3.60 | 4.51 | 6.75 | 4.27 | 11.70 | 17.94 | 2.21 | 2.21 | 31.85 |
| | | **SL/HP/AL/02 - Block Plantation Model** | 3.84 | 4.80 | 2.05 | 3.36 | 4.77 | 6.90 | 4.86 | 12.00 | 18.58 | 2.06 | 2.06 | 32.64 |
| **15** | **Una** | **SL/HP/AL/01 - Boundary Plantation Model** | 4.50 | 3.60 | 2.41 | 4.32 | 4.51 | 7.13 | 4.68 | 12.42 | 18.73 | 2.65 | 2.65 | 33.80 |

| | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | **SL/HP/AL/02 - Block Plantation Model** | 4.80 | 5.76 | 2.57 | 4.80 | 5.83 | 8.81 | 6.28 | 15.36 | 23.49 | 2.94 | 2.94 | 41.79 |
| **Total** | | | **146.73** | **130.14** | **78.54** | **121.89** | **153.73** | **229.75** | **149.56** | **398.76** | **611.58** | **74.72** | **74.72** | **1085.06** |

## Division and Model WiseProposed Extent of Plantations in Urban Landscapes in Himachal Pradesh

| Division | Activity | Phase1 (Area in Ha) | | | | | | | | | | Phase - II Maint | Grand Total Phase I and Phase II(Area in Ha) | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 1 | II | | III | | IV | V | Phase -I | | VI | | | |
| | | Estb | Estb | maint | Estb | maint | maint | maint | Estb | Maint | Maint | | Estb | Maint |
| Anni | SL/HP/UL/01 - Bioremediation and Bio | 1 | 0 | 1 | 0 | 1 | 1 | 0 | 1 | 1 | 0 | 0 | 1 | 1 |
| | SL/HP/UL/03 - Institution Plantation | 20 | 18 | 20 | 15 | 38 | 53 | 33 | 53 | 53 | 15 | 15 | 53 | 53 |
| | SL/HP/UL/04- Eco-Park Development | 0.12 | 0 | 0.12 | 0 | 0.12 | 0.12 | 0 | 0.12 | 0.12 | 0 | 0 | 0.12 | 0.12 |
| Bilaspur | SL/HP/UL/01 - Bioremediation and Bio | 0.75 | 0 | 0.75 | 0 | 0.75 | 0.75 | 0 | 0.75 | 0.75 | 0 | 0 | 0.75 | 0.75 |
| | SL/HP/UL/02 - Riverfront Development | 0 | 0.8 | 0 | 0 | 0.8 | 0.8 | 0.8 | 0.8 | 0.8 | 0 | 0 | 0.8 | 0.8 |
| | SL/HP/UL/03 - Institution Plantation | 10 | 15 | 10 | 15 | 25 | 40 | 30 | 40 | 40 | 15 | 15 | 40 | 40 |
| | SL/HP/UL/04- Eco-Park Development | 0.5 | 0 | 0.5 | 0 | 0.5 | 0.5 | 0 | 0.5 | 0.5 | 0 | 0 | 0.5 | 0.5 |
| Hamirpur | SL/HP/UL/01 - Bioremediation and Bio | 1 | 0 | 1 | 0 | 1 | 1 | 0 | 1 | 1 | 0 | 0 | 1 | 1 |
| | SL/HP/UL/03 - Institution Plantation | 18 | 20 | 18 | 20 | 38 | 58 | 40 | 58 | 58 | 20 | 20 | 58 | 58 |

| Division | Activity | Phase1 (Area in Ha) | | | | | | | | | | Phase - II Maint | Grand Total Phase I and Phase II(Area in Ha) | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 1 | II | | III | | IV | V | Phase -I | | VI | | | |
| | | Estb | Estb | maint | Estb | maint | maint | maint | Estb | Maint | Maint | | Estb | Maint |
| | SL/HP/UL/04-Eco-Park Development | 0.2 | 0 | 0.2 | 0 | 0.2 | 0.2 | 0 | 0.2 | 0.2 | 0 | 0 | 0.2 | 0.2 |
| Karsog | SL/HP/UL/01 - Bioremediation and Bio | 1 | 0 | 1 | 0 | 1 | 1 | 0 | 1 | 1 | 0 | 0 | 1 | 1 |
| | SL/HP/UL/03 - Institution Plantation | 20 | 18 | 20 | 16 | 38 | 54 | 34 | 54 | 54 | 16 | 16 | 54 | 54 |
| | SL/HP/UL/04-Eco-Park Development | 0.2 | 0 | 0.2 | 0 | 0.2 | 0.2 | 0 | 0.2 | 0.2 | 0 | 0 | 0.2 | 0.2 |
| Kinnaur | SL/HP/UL/01 - Bioremediation and Bio | 1 | 0 | 1 | 0 | 1 | 1 | 0 | 1 | 1 | 0 | 0 | 1 | 1 |
| | SL/HP/UL/02 - Riverfront Development | 0 | 0.65 | 0 | 0 | 0.65 | 0.65 | 0.65 | 0.65 | 0.65 | 0 | 0 | 0.65 | 0.65 |
| | SL/HP/UL/03 - Institution Plantation | 18 | 20 | 18 | 20 | 38 | 58 | 40 | 58 | 58 | 20 | 20 | 58 | 58 |
| | SL/HP/UL/04-Eco-Park Development | 0.2 | 0 | 0.2 | 0 | 0.2 | 0.2 | 0 | 0.2 | 0.2 | 0 | 0 | 0.2 | 0.2 |
| Kotgarh | SL/HP/UL/01 - Bioremediation and Bio | 1 | 0 | 1 | 0 | 1 | 1 | 0 | 1 | 1 | 0 | 0 | 1 | 1 |

| Division | Activity | Phase1 (Area in Ha) | | | | | | | | | | Phase - II Maint | Grand Total Phase I and Phase II(Area in Ha) | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 1 | II | | III | | IV | V | Phase -I | | VI | | | |
| | | Estb | Estb | maint | Estb | maint | maint | maint | Estb | Maint | Maint | | Estb | Maint |
| | SL/HP/UL/03 - Institution Plantation | 20 | 15 | 20 | 16 | 35 | 51 | 31 | 51 | 51 | 16 | 16 | 51 | 51 |
| | SL/HP/UL/04- Eco-Park Development | 0.2 | 0 | 0.2 | 0 | 0.2 | 0.2 | 0 | 0.2 | 0.2 | 0 | 0 | 0.2 | 0.2 |
| Kunihar | SL/HP/UL/01 - Bioremediation and Bio | 1 | 0 | 1 | 0 | 1 | 1 | 0 | 1 | 1 | 0 | 0 | 1 | 1 |
| | SL/HP/UL/03 - Institution Plantation | 20 | 20 | 20 | 20 | 40 | 60 | 40 | 60 | 60 | 20 | 20 | 60 | 60 |
| | SL/HP/UL/04- Eco-Park Development | 0.1 | 0 | 0.1 | 0 | 0.1 | 0.1 | 0 | 0.1 | 0.1 | 0 | 0 | 0.1 | 0.1 |
| Nachan | SL/HP/UL/01 - Bioremediation and Bio | 1 | 0 | 1 | 0 | 1 | 1 | 0 | 1 | 1 | 0 | 0 | 1 | 1 |
| | SL/HP/UL/03 - Institution Plantation | 10 | 20 | 10 | 20 | 30 | 50 | 40 | 50 | 50 | 20 | 20 | 50 | 50 |
| | SL/HP/UL/04- Eco-Park Development | 0.2 | 0 | 0.2 | 0 | 0.2 | 0.2 | 0 | 0.2 | 0.2 | 0 | 0 | 0.2 | 0.2 |
| Nalagarh | SL/HP/UL/01 - Bioremediation and Bio | 1 | 0 | 1 | 0 | 1 | 1 | 0 | 1 | 1 | 0 | 0 | 1 | 1 |

| Division | Activity | Phase1 (Area in Ha) | | | | | | | | | | Phase - II Maint | Grand Total Phase I and Phase II(Area in Ha) | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 1 | II | | III | | IV | V | Phase -I | | VI | | | |
| | | Estb | Estb | maint | Estb | maint | maint | maint | Estb | Maint | Maint | | Estb | Maint |
| | SL/HP/UL/02 - Riverfront Development | 0 | 0.4 | 0 | 0 | 0.4 | 0.4 | 0.4 | 0.4 | 0.4 | 0 | 0 | 0.4 | 0.4 |
| | SL/HP/UL/03 - Institution Plantation | 20 | 20 | 20 | 20 | 40 | 60 | 40 | 60 | 60 | 20 | 20 | 60 | 60 |
| | SL/HP/UL/04- Eco-Park Development | 0.2 | 0 | 0.2 | 0 | 0.2 | 0.2 | 0 | 0.2 | 0.2 | 0 | 0 | 0.2 | 0.2 |
| Rampur | SL/HP/UL/01 - Bioremediation and Bio | 1 | 0 | 1 | 0 | 1 | 1 | 0 | 1 | 1 | 0 | 0 | 1 | 1 |
| | SL/HP/UL/02 - Riverfront Development | 0 | 0.75 | 0 | 0 | 0.75 | 0.75 | 0.75 | 0.75 | 0.75 | 0 | 0 | 0.75 | 0.75 |
| | SL/HP/UL/03 - Institution Plantation | 20 | 12 | 20 | 20 | 32 | 52 | 32 | 52 | 52 | 20 | 20 | 52 | 52 |
| | SL/HP/UL/04- Eco-Park Development | 0.2 | 0 | 0.2 | 0 | 0.2 | 0.2 | 0 | 0.2 | 0.2 | 0 | 0 | 0.2 | 0.2 |
| Shimla | SL/HP/UL/01 - Bioremediation and Bio | 2.5 | 0 | 2.5 | 0 | 2.5 | 2.5 | 0 | 2.5 | 2.5 | 0 | 0 | 2.5 | 2.5 |
| | SL/HP/UL/03 - Institution Plantation | 18 | 20 | 18 | 20 | 38 | 58 | 40 | 58 | 58 | 20 | 20 | 58 | 58 |

| Division | Activity | Phase1 (Area in Ha) | | | | | | | | | | Phase - II Maint | Grand Total Phase I and Phase II(Area in Ha) | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 1 | II | | III | | IV | V | Phase -I | | VI | | | |
| | | Estb | Estb | maint | Estb | maint | maint | maint | Estb | Maint | Maint | | Estb | Maint |
| | SL/HP/UL/04-Eco-Park Development | 0.2 | 1 | 0.2 | 0 | 1.2 | 1.2 | 1 | 1.2 | 1.2 | 0 | 0 | 1.2 | 1.2 |
| Shimla Urban | SL/HP/UL/01 - Bioremediation and Bio | 1 | 0 | 1 | 0 | 1 | 1 | 0 | 1 | 1 | 0 | 0 | 1 | 1 |
| | SL/HP/UL/03 - Institution Plantation | 20 | 20 | 20 | 20 | 40 | 60 | 40 | 60 | 60 | 20 | 20 | 60 | 60 |
| | SL/HP/UL/04-Eco-Park Development | 0.2 | 0 | 0.2 | 0 | 0.2 | 0.2 | 0 | 0.2 | 0.2 | 0 | 0 | 0.2 | 0.2 |
| Solan | SL/HP/UL/01 - Bioremediation and Bio | 1 | 0 | 1 | 0 | 1 | 1 | 0 | 1 | 1 | 0 | 0 | 1 | 1 |
| | SL/HP/UL/02 - Riverfront Development | 0 | 0.5 | 0 | 0 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 0 | 0 | 0.5 | 0.5 |
| | SL/HP/UL/03 - Institution Plantation | 20 | 20 | 20 | 20 | 40 | 60 | 40 | 60 | 60 | 20 | 20 | 60 | 60 |
| | SL/HP/UL/04-Eco-Park Development | 0.25 | 0 | 0.25 | 0 | 0.25 | 0.25 | 0 | 0.25 | 0.25 | 0 | 0 | 0.25 | 0.25 |
| Suket | SL/HP/UL/01 - Bioremediation and Bio | 1 | 0 | 1 | 0 | 1 | 1 | 0 | 1 | 1 | 0 | 0 | 1 | 1 |

| Division | Activity | Phase1 (Area in Ha) | | | | | | | | | | Phase - II Maint | Grand Total Phase I and Phase II(Area in Ha) | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 1 | II | | III | | IV | V | Phase -I | | VI | | | |
| | | Estb | Estb | maint | Estb | maint | maint | maint | Estb | Maint | Maint | | Estb | Maint |
| | SL/HP/UL/02 - Riverfront Development | 0 | 1 | 0 | 0 | 1 | 1 | 1 | 1 | 1 | 0 | 0 | 1 | 1 |
| | SL/HP/UL/03 - Institution Plantation | 20 | 18 | 20 | 18 | 38 | 56 | 36 | 56 | 56 | 18 | 18 | 56 | 56 |
| | SL/HP/UL/04- Eco-Park Development | 0.2 | 0 | 0.2 | 0 | 0.2 | 0.2 | 0 | 0.2 | 0.2 | 0 | 0 | 0.2 | 0.2 |
| Theog | SL/HP/UL/01 - Bioremediation and Bio | 1 | 0 | 1 | 0 | 1 | 1 | 0 | 1 | 1 | 0 | 0 | 1 | 1 |
| | SL/HP/UL/03 - Institution Plantation | 12 | 40 | 12 | 40 | 52 | 92 | 80 | 92 | 92 | 40 | 40 | 92 | 92 |
| | SL/HP/UL/04- Eco-Park Development | 0.25 | 0 | 0.25 | 0 | 0.25 | 0.25 | 0 | 0.25 | 0.25 | 0 | 0 | 0.25 | 0.25 |
| Una | SL/HP/UL/01 - Bioremediation and Bio | 1 | 0 | 1 | 0 | 1 | 1 | 0 | 1 | 1 | 0 | 0 | 1 | 1 |
| | SL/HP/UL/02 - Riverfront Development | 0 | 0.65 | 0 | 0 | 0.65 | 0.65 | 0.65 | 0.65 | 0.65 | 0 | 0 | 0.65 | 0.65 |
| | SL/HP/UL/03 - Institution Plantation | 12 | 20 | 12 | 20 | 32 | 52 | 40 | 52 | 52 | 20 | 20 | 52 | 52 |

| Division | Activity | Phase1 (Area in Ha) | | | | | | | | | | Phase - II Maint | Grand Total Phase I and Phase II(Area in Ha) | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 1 | II | | III | | IV | V | Phase -I | | VI | | | |
| | | Estb | Estb | maint | Estb | maint | maint | maint | Estb | Maint | Maint | | Estb | Maint |
| | SL/HP/UL/04-Eco-Park Development | 0.3 | 0 | 0.3 | 0 | 0.3 | 0.3 | 0 | 0.3 | 0.3 | 0 | 0 | 0.3 | 0.3 |
| **Total** | | **299.77** | **321.75** | **298.77** | **320** | **620.52** | **940.52** | **641.75** | **940.52** | **940.52** | **320** | **320** | **940.52** | **940.52** |

## Division and Model Wise Proposed Extent of Plantations in Urban Landscapes in Himachal Pradesh

| Sl. No. | Division | Activity | Phase1 (Cost) | | | | | | | | | | Phase -II Maint | Total Phase I (Rs.in Lakhs) | | Grand Total (Rs. In Lakhs) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | 1 | II | | III | | IV | V | Phase -1 | | VI | | | | |
| | | | Estb | Estb | maint | Estb | maint | maint | maint | Estb | Maint | Maint | | Estb. | Maint. | |
| 1 | Anni | SL/HP/UL/01 - Bioremediati | 15.00 | 0.00 | 4.50 | 0.00 | 3.00 | 2.25 | 0.00 | 15.00 | 9.75 | 0.00 | 0.00 | 15.00 | 9.75 | 24.75 |
| | | SL/HP/UL/03 - Institution Plantation | 52.00 | 46.80 | 15.60 | 39.00 | 24.44 | 28.86 | 14.82 | 137.80 | 83.72 | 5.85 | 5.85 | 137.80 | 89.57 | 227.37 |
| | | SL/HP/UL/04 - Eco-Park Development | 18.00 | 0.00 | 5.40 | 0.00 | 3.60 | 2.70 | 0.00 | 18.00 | 11.70 | 0.00 | 0.00 | 18.00 | 11.70 | 29.70 |
| 2 | Bilaspur | SL/HP/UL/01 - Bioremediation and Bio filtration | 11.25 | 0.00 | 3.38 | 0.00 | 2.25 | 1.69 | 0.00 | 11.25 | 7.32 | 0.00 | 0.00 | 11.25 | 7.32 | 18.57 |
| | | SL/HP/UL/02 - Riverfront Development | 0.00 | 120.00 | 0.00 | 0.00 | 36.00 | 24.00 | 18.00 | 120.00 | 78.00 | 0.00 | 0.00 | 120.00 | 78.00 | 198.00 |
| | | SL/HP/UL/03 - Institution Plantation | 26.00 | 39.00 | 7.80 | 39.00 | 16.90 | 23.40 | 13.65 | 104.00 | 61.75 | 5.85 | 5.85 | 104.00 | 67.60 | 171.60 |
| | | SL/HP/UL/04 - Eco-Park Development | 75.00 | 0.00 | 22.50 | 0.00 | 15.00 | 11.25 | 0.00 | 75.00 | 48.75 | 0.00 | 0.00 | 75.00 | 48.75 | 123.75 |
| 3 | Hamirpur | SL/HP/UL/01 - Bioremediati | 15.00 | 0.00 | 4.50 | 0.00 | 3.00 | 2.25 | 0.00 | 15.00 | 9.75 | 0.00 | 0.00 | 15.00 | 9.75 | 24.75 |
| | | SL/HP/UL/03 - Institution Plantation | 46.80 | 52.00 | 14.04 | 52.00 | 24.96 | 33.02 | 18.20 | 150.80 | 90.22 | 7.80 | 7.80 | 150.80 | 98.02 | 248.82 |

| Sl. No. | Division | Activity | Phase1 (Cost) | | | | | | | | | | Phase -II Maint | Total Phase I (Rs.in Lakhs) | | Grand Total (Rs. In Lakhs) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | 1 | II | | III | | IV | V | Phase -1 | | VI | | | | |
| | | | Estb | Estb | maint | Estb | maint | maint | maint | Estb | Maint | Maint | | Estb. | Maint. | |
| | | SL/HP/UL/04 - Eco-Park Development | 30.00 | 0.00 | 9.00 | 0.00 | 6.00 | 4.50 | 0.00 | 30.00 | 19.50 | 0.00 | 0.00 | 30.00 | 19.50 | 49.50 |
| 4 | Karsog | SL/HP/UL/01 - Bioremediati | 15.00 | 0.00 | 4.50 | 0.00 | 3.00 | 2.25 | 0.00 | 15.00 | 9.75 | 0.00 | 0.00 | 15.00 | 9.75 | 24.75 |
| | | SL/HP/UL/03 - Institution Plantation | 52.00 | 46.80 | 15.60 | 41.60 | 24.44 | 29.64 | 15.34 | 140.40 | 85.02 | 6.24 | 6.24 | 140.40 | 91.26 | 231.66 |
| | | SL/HP/UL/04 - Eco-Park Development | 30.00 | 0.00 | 9.00 | 0.00 | 6.00 | 4.50 | 0.00 | 30.00 | 19.50 | 0.00 | 0.00 | 30.00 | 19.50 | 49.50 |
| 5 | Kinnaur | SL/HP/UL/01 - Bioremediati | 15.00 | 0.00 | 4.50 | 0.00 | 3.00 | 2.25 | 0.00 | 15.00 | 9.75 | 0.00 | 0.00 | 15.00 | 9.75 | 24.75 |
| | | SL/HP/UL/02 - Riverfront Development | 0.00 | 97.50 | 0.00 | 0.00 | 29.25 | 19.50 | 14.63 | 97.50 | 63.38 | 0.00 | 0.00 | 97.50 | 63.38 | 160.88 |
| | | SL/HP/UL/03 - Institution Plantation | 46.80 | 52.00 | 14.04 | 52.00 | 24.96 | 33.02 | 18.20 | 150.80 | 90.22 | 7.80 | 7.80 | 150.80 | 98.02 | 248.82 |
| | | SL/HP/UL/04 - Eco-Park Development | 30.00 | 0.00 | 9.00 | 0.00 | 6.00 | 4.50 | 0.00 | 30.00 | 19.50 | 0.00 | 0.00 | 30.00 | 19.50 | 49.50 |
| 6 | Kotgarh | SL/HP/UL/01 - Bioremediati | 15.00 | 0.00 | 4.50 | 0.00 | 3.00 | 2.25 | 0.00 | 15.00 | 9.75 | 0.00 | 0.00 | 15.00 | 9.75 | 24.75 |

| Sl. No. | Division | Activity | Phase1 (Cost) | | | | | | | | | | Phase -II Maint | Total Phase I (Rs.in Lakhs) | | Grand Total (Rs. In Lakhs) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | 1 | II | | III | | IV | V | Phase -1 | | VI | | | | |
| | | | Estb | Estb | maint | Estb | maint | maint | maint | Estb | Maint | Maint | | Estb. | Maint. | |
| | | SL/HP/UL/03 - Institution Plantation | 52.00 | 39.00 | 15.60 | 41.60 | 22.10 | 28.08 | 14.17 | 132.60 | 79.95 | 6.24 | 6.24 | 132.60 | 86.19 | 218.79 |
| | | SL/HP/UL/04 - Eco-Park Development | 30.00 | 0.00 | 9.00 | 0.00 | 6.00 | 4.50 | 0.00 | 30.00 | 19.50 | 0.00 | 0.00 | 30.00 | 19.50 | 49.50 |
| 7 | Kunihar | SL/HP/UL/01 - Bioremediati | 15.00 | 0.00 | 4.50 | 0.00 | 3.00 | 2.25 | 0.00 | 15.00 | 9.75 | 0.00 | 0.00 | 15.00 | 9.75 | 24.75 |
| | | SL/HP/UL/03 - Institution Plantation | 52.00 | 52.00 | 15.60 | 52.00 | 26.00 | 33.80 | 18.20 | 156.00 | 93.60 | 7.80 | 7.80 | 156.00 | 101.40 | 257.40 |
| | | SL/HP/UL/04 - Eco-Park Development | 15.00 | 0.00 | 4.50 | 0.00 | 3.00 | 2.25 | 0.00 | 15.00 | 9.75 | 0.00 | 0.00 | 15.00 | 9.75 | 24.75 |
| 8 | Nachan | SL/HP/UL/01 - Bioremediati | 15.00 | 0.00 | 4.50 | 0.00 | 3.00 | 2.25 | 0.00 | 15.00 | 9.75 | 0.00 | 0.00 | 15.00 | 9.75 | 24.75 |
| | | SL/HP/UL/03 - Institution Plantation | 26.00 | 52.00 | 7.80 | 52.00 | 20.80 | 29.90 | 18.20 | 130.00 | 76.70 | 7.80 | 7.80 | 130.00 | 84.50 | 214.50 |
| | | SL/HP/UL/04 - Eco-Park Development | 30.00 | 0.00 | 9.00 | 0.00 | 6.00 | 4.50 | 0.00 | 30.00 | 19.50 | 0.00 | 0.00 | 30.00 | 19.50 | 49.50 |
| 9 | Nalagarh | SL/HP/UL/01 - Bioremediati | 15.00 | 0.00 | 4.50 | 0.00 | 3.00 | 2.25 | 0.00 | 15.00 | 9.75 | 0.00 | 0.00 | 15.00 | 9.75 | 24.75 |

| Sl. No. | Division | Activity | Phase1 (Cost) | | | | | | | | | | Phase -II Maint | Total Phase I (Rs.in Lakhs) | | Grand Total (Rs. In Lakhs) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | 1 | II | | III | | IV | V | Phase -1 | | VI | | | | |
| | | | Estb | Estb | maint | Estb | maint | maint | maint | Estb | Maint | Maint | | Estb. | Maint. | |
| | | SL/HP/UL/02 - Riverfront Development | 0.00 | 60.00 | 0.00 | 0.00 | 18.00 | 12.00 | 9.00 | 60.00 | 39.00 | 0.00 | 0.00 | 60.00 | 39.00 | 99.00 |
| | | SL/HP/UL/03 - Institution Plantation | 52.00 | 52.00 | 15.60 | 52.00 | 26.00 | 33.80 | 18.20 | 156.00 | 93.60 | 7.80 | 7.80 | 156.00 | 101.40 | 257.40 |
| | | SL/HP/UL/04 - Eco-Park Development | 30.00 | 0.00 | 9.00 | 0.00 | 6.00 | 4.50 | 0.00 | 30.00 | 19.50 | 0.00 | 0.00 | 30.00 | 19.50 | 49.50 |
| 10 | Rampur | SL/HP/UL/01 - Bioremediati | 15.00 | 0.00 | 4.50 | 0.00 | 3.00 | 2.25 | 0.00 | 15.00 | 9.75 | 0.00 | 0.00 | 15.00 | 9.75 | 24.75 |
| | | SL/HP/UL/02 - Riverfront Development | 0.00 | 112.50 | 0.00 | 0.00 | 33.75 | 22.50 | 16.88 | 112.50 | 73.13 | 0.00 | 0.00 | 112.50 | 73.13 | 185.63 |
| | | SL/HP/UL/03 - Institution Plantation | 52.00 | 31.20 | 15.60 | 52.00 | 19.76 | 29.64 | 15.08 | 135.20 | 80.08 | 7.80 | 7.80 | 135.20 | 87.88 | 223.08 |
| | | SL/HP/UL/04 - Eco-Park Development | 30.00 | 0.00 | 9.00 | 0.00 | 6.00 | 4.50 | 0.00 | 30.00 | 19.50 | 0.00 | 0.00 | 30.00 | 19.50 | 49.50 |
| 11 | Shimla | SL/HP/UL/01 - Bioremediati | 37.50 | 0.00 | 11.25 | 0.00 | 7.50 | 5.63 | 0.00 | 37.50 | 24.38 | 0.00 | 0.00 | 37.50 | 24.38 | 61.88 |
| | | SL/HP/UL/03 - Institution Plantation | 46.80 | 52.00 | 14.04 | 52.00 | 24.96 | 33.02 | 18.20 | 150.80 | 90.22 | 7.80 | 7.80 | 150.80 | 98.02 | 248.82 |

| Sl. No. | Division | Activity | Phase1 (Cost) | | | | | | | | | | Phase -II Maint | Total Phase I (Rs.in Lakhs) | | Grand Total (Rs. In Lakhs) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | 1 | II | | III | | IV | V | Phase -1 | | VI | | | | |
| | | | Estb | Estb | maint | Estb | maint | maint | maint | Estb | Maint | Maint | | Estb. | Maint. | |
| | | SL/HP/UL/04 - Eco-Park Development | 30.00 | 150.00 | 9.00 | 0.00 | 51.00 | 34.50 | 22.50 | 180.00 | 117.00 | 0.00 | 0.00 | 180.00 | 117.00 | 297.00 |
| 12 | Shimla Urban | SL/HP/UL/01 - Bioremediati | 15.00 | 0.00 | 4.50 | 0.00 | 3.00 | 2.25 | 0.00 | 15.00 | 9.75 | 0.00 | 0.00 | 15.00 | 9.75 | 24.75 |
| | | SL/HP/UL/03 - Institution Plantation | 52.00 | 52.00 | 15.60 | 52.00 | 26.00 | 33.80 | 18.20 | 156.00 | 93.60 | 7.80 | 7.80 | 156.00 | 101.40 | 257.40 |
| | | SL/HP/UL/04 - Eco-Park Development | 30.00 | 0.00 | 9.00 | 0.00 | 6.00 | 4.50 | 0.00 | 30.00 | 19.50 | 0.00 | 0.00 | 30.00 | 19.50 | 49.50 |
| 13 | Solan | SL/HP/UL/01 - Bioremediati | 15.00 | 0.00 | 4.50 | 0.00 | 3.00 | 2.25 | 0.00 | 15.00 | 9.75 | 0.00 | 0.00 | 15.00 | 9.75 | 24.75 |
| | | SL/HP/UL/02 - Riverfront Development | 0.00 | 75.00 | 0.00 | 0.00 | 22.50 | 15.00 | 11.25 | 75.00 | 48.75 | 0.00 | 0.00 | 75.00 | 48.75 | 123.75 |
| | | SL/HP/UL/03 - Institution Plantation | 52.00 | 52.00 | 15.60 | 52.00 | 26.00 | 33.80 | 18.20 | 156.00 | 93.60 | 7.80 | 7.80 | 156.00 | 101.40 | 257.40 |
| | | SL/HP/UL/04 - Eco-Park Development | 37.50 | 0.00 | 11.25 | 0.00 | 7.50 | 5.63 | 0.00 | 37.50 | 24.38 | 0.00 | 0.00 | 37.50 | 24.38 | 61.88 |
| 14 | Suket | SL/HP/UL/01 - Bioremediati | 15.00 | 0.00 | 4.50 | 0.00 | 3.00 | 2.25 | 0.00 | 15.00 | 9.75 | 0.00 | 0.00 | 15.00 | 9.75 | 24.75 |

| Sl. No. | Division | Activity | Phase1 (Cost) | | | | | | | | | | Phase -II Maint | Total Phase I (Rs.in Lakhs) | | Grand Total (Rs. In Lakhs) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | 1 | II | | III | | IV | V | Phase -1 | | VI | | | | |
| | | | Estb | Estb | maint | Estb | maint | maint | maint | Estb | Maint | Maint | | Estb. | Maint. | |
| | | SL/HP/UL/02 - Riverfront Development | 0.00 | 150.00 | 0.00 | 0.00 | 45.00 | 30.00 | 22.50 | 150.00 | 97.50 | 0.00 | 0.00 | 150.00 | 97.50 | 247.50 |
| | | SL/HP/UL/03 - Institution Plantation | 52.00 | 46.80 | 15.60 | 46.80 | 24.44 | 31.20 | 16.38 | 145.60 | 87.62 | 7.02 | 7.02 | 145.60 | 94.64 | 240.24 |
| | | SL/HP/UL/04 - Eco-Park Development | 30.00 | 0.00 | 9.00 | 0.00 | 6.00 | 4.50 | 0.00 | 30.00 | 19.50 | 0.00 | 0.00 | 30.00 | 19.50 | 49.50 |
| 15 | Theog | SL/HP/UL/01 - Bioremediati | 15.00 | 0.00 | 4.50 | 0.00 | 3.00 | 2.25 | 0.00 | 15.00 | 9.75 | 0.00 | 0.00 | 15.00 | 9.75 | 24.75 |
| | | SL/HP/UL/03 - Institution Plantation | 31.20 | 104.00 | 9.36 | 104.00 | 37.44 | 56.68 | 36.40 | 239.20 | 139.88 | 15.60 | 15.60 | 239.20 | 155.48 | 394.68 |
| | | SL/HP/UL/04 - Eco-Park Development | 37.50 | 0.00 | 11.25 | 0.00 | 7.50 | 5.63 | 0.00 | 37.50 | 24.38 | 0.00 | 0.00 | 37.50 | 24.38 | 61.88 |
| 16 | Una | SL/HP/UL/01 - Bioremediati | 15.00 | 0.00 | 4.50 | 0.00 | 3.00 | 2.25 | 0.00 | 15.00 | 9.75 | 0.00 | 0.00 | 15.00 | 9.75 | 24.75 |
| | | SL/HP/UL/02 - Riverfront Development | 0.00 | 97.50 | 0.00 | 0.00 | 29.25 | 19.50 | 14.63 | 97.50 | 63.38 | 0.00 | 0.00 | 97.50 | 63.38 | 160.88 |
| | | SL/HP/UL/03 - Institution Plantation | 31.20 | 52.00 | 9.36 | 52.00 | 21.84 | 30.68 | 18.20 | 135.20 | 80.08 | 7.80 | 7.80 | 135.20 | 87.88 | 223.08 |

| Sl. No. | Division | Activity | Phase1 (Cost) | | | | | | | | | | Phase -II Maint | Total Phase I (Rs.in Lakhs) | | Grand Total (Rs. In Lakhs) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | 1 | II | | III | | IV | V | Phase -1 | | VI | | | | |
| | | | Estb | Estb | maint | Estb | maint | maint | maint | Estb | Maint | Maint | | Estb. | Maint. | |
| | | SL/HP/UL/04 - Eco-Park Development | 45.00 | 0.00 | 13.50 | 0.00 | 9.00 | 6.75 | 0.00 | 45.00 | 29.25 | 0.00 | 0.00 | 45.00 | 29.25 | 74.25 |
| | | Total | **1509.55** | **1684.10** | **452.87** | **832.00** | **807.14** | **812.87** | **419.03** | **4025.65** | **2491.91** | **124.80** | **124.80** | **4025.65** | **2616.71** | **6642.36** |

## Division, Model and Year wise Area of Conservation Interventions (SMC) in Himachal Pradesh

| Sr. No | Division | Activity/Model | 1st Year | 2nd Year | 3rd Year | 4th Year | 5th Year | Phase-I |
|---|---|---|---|---|---|---|---|---|
| | | | Estb | Estb | Estb | Estb | Estb | Estb |
| 1 | Anni | SL/HP/CI/01 – Brush wood Interventions | 1600 | 3165 | 1185 | 200 | 300 | 6450 |
| | | SL/HP/CI/02 – Dry Stone Activities | 3200 | 3280 | 3410 | 2060 | 0 | 11950 |
| | | SL/HP/CI/03 – Crate wire Activities | 1480 | 2340 | 1730 | 800 | 250 | 6600 |
| | | SL/HP/CI/04 – Water Ponds | 60 | 700 | 700 | 2510 | 680 | 4650 |
| | | SL/HP/CI/05 – Silt Detention Dam Type Activities | 370 | 0 | 0 | 0 | 675 | 1045 |
| 2 | Bilaspur | SL/HP/CI/01 – Brush wood Interventions | 4870 | 1000 | 700 | 1200 | 1220 | 8990 |
| | | SL/HP/CI/02 – Dry Stone Activities | 960 | 8405 | 4895 | 2415 | 750 | 17425 |
| | | SL/HP/CI/03 – Crate wire Activities | 450 | 1690 | 1160 | 400 | 620 | 4320 |
| | | SL/HP/CI/04 – Water Ponds | 40 | 1402 | 3517 | 2620 | 2500 | 10079 |
| | | SL/HP/CI/05 – Silt Detention Dam Type Activities | 40 | 825 | 360 | 610 | 130 | 1965 |
| 3 | Hamirpur | SL/HP/CI/01 – Brush wood Interventions | 0 | 400 | 0 | 0 | 220 | 620 |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | | **SL/HP/CI/02 – Dry Stone Activities** | 630 | 1200 | 1120 | 620 | 75 | 3645 |
| | | **SL/HP/CI/03 – Crate wire Activities** | 0 | 700 | 0 | 0 | 0 | 700 |
| | | **SL/HP/CI/04 – Water Ponds** | 690 | 700 | 450 | 30 | 230 | 2100 |
| | | **SL/HP/CI/05 – Silt Detention Dam Type Activities** | 100 | 80 | 180 | 270 | 0 | 630 |
| **4** | **Karsog** | **SL/HP/CI/01 – Brush wood Interventions** | 430 | 0 | 290 | 0 | 390 | 1110 |
| | | **SL/HP/CI/02 – Dry Stone Activities** | 5700 | 3770 | 1395 | 725 | 850 | 12440 |
| | | **SL/HP/CI/03 – Crate wire Activities** | 700 | 250 | 230 | 300 | 0 | 1480 |
| | | **SL/HP/CI/04 – Water Ponds** | 490 | 780 | 150 | 355 | 90 | 1865 |
| | | **SL/HP/CI/05 – Silt Detention Dam Type Activities** | 150 | 0 | 150 | 0 | 0 | 300 |
| **5** | **Kinnaur** | **SL/HP/CI/01 – Brush wood Interventions** | 7510 | 9300 | 2370 | 1380 | 4120 | 24680 |
| | | **SL/HP/CI/02 – Dry Stone Activities** | 2070 | 2200 | 2090 | 250 | 0 | 6610 |
| | | **SL/HP/CI/03 – Crate wire Activities** | 3855 | 2770 | 870 | 465 | 160 | 8120 |
| | | **SL/HP/CI/04 – Water Ponds** | 600 | 600 | 5450 | 12615 | 2450 | 21715 |
| | | **SL/HP/CI/05 – Silt Detention Dam** | 50 | 270 | 1120 | 1120 | 1430 | 3990 |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | | **Type Activities** | | | | | | |
| **6** | **Kotgarh** | **SL/HP/CI/01 – Brush wood Interventions** | 4570 | 3440 | 1950 | 680 | 4570 | 15210 |
| | | **SL/HP/CI/02 – Dry Stone Activities** | 700 | 2290 | 730 | 400 | 0 | 4120 |
| | | **SL/HP/CI/03 – Crate wire Activities** | 1180 | 590 | 250 | 0 | 0 | 2020 |
| | | **SL/HP/CI/04 – Water Ponds** | 600 | 0 | 9000 | 1800 | 1800 | 13200 |
| | | **SL/HP/CI/05 – Silt Detention Dam Type Activities** | 100 | 0 | 100 | 1900 | 600 | 2700 |
| **7** | **Kunihar** | **SL/HP/CI/01 – Brush wood Interventions** | 2320 | 1805 | 820 | 1790 | 2235 | 8970 |
| | | **SL/HP/CI/02 – Dry Stone Activities** | 4710 | 7750 | 3770 | 2720 | 770 | 19720 |
| | | **SL/HP/CI/03 – Crate wire Activities** | 6775 | 4675 | 6000 | 3580 | 780 | 21810 |
| | | **SL/HP/CI/04 – Water Ponds** | 600 | 2470 | 4210 | 7460 | 5755 | 20495 |
| | | **SL/HP/CI/05 – Silt Detention Dam Type Activities** | 260 | 220 | 1670 | 1640 | 2100 | 5890 |
| **8** | **Nachan** | **SL/HP/CI/01 – Brush wood Interventions** | 570 | 200 | 0 | 0 | 0 | 770 |
| | | **SL/HP/CI/02 – Dry Stone Activities** | 0 | 1820 | 1070 | 0 | 0 | 2890 |
| | | **SL/HP/CI/03 – Crate wire Activities** | 0 | 380 | 1830 | 710 | 0 | 2920 |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | | **SL/HP/CI/04 – Water Ponds** | 0 | 0 | 0 | 3940 | 1250 | 5190 |
| | | **SL/HP/CI/05 – Silt Detention Dam Type Activities** | 150 | 150 | 0 | 0 | 1075 | 1375 |
| **9** | **Nalagarh** | **SL/HP/CI/01 – Brush wood Interventions** | 4530 | 500 | 500 | 1750 | 2430 | 9710 |
| | | **SL/HP/CI/02 – Dry Stone Activities** | 2761 | 1470 | 3150 | 1800 | 950 | 10131 |
| | | **SL/HP/CI/03 – Crate wire Activities** | 0 | 4101 | 1250 | 1200 | 600 | 7151 |
| | | **SL/HP/CI/04 – Water Ponds** | 600 | 40 | 1301 | 1950 | 1270 | 5161 |
| | | **SL/HP/CI/05 – Silt Detention Dam Type Activities** | 0 | 401 | 430 | 240 | 540 | 1611 |
| **10** | **Rampur** | **SL/HP/CI/01 – Brush wood Interventions** | 2200 | 2190 | 240 | 2320 | 1980 | 8930 |
| | | **SL/HP/CI/02 – Dry Stone Activities** | 5700 | 4250 | 3880 | 3550 | 1650 | 19030 |
| | | **SL/HP/CI/03 – Crate wire Activities** | 5550 | 6050 | 5000 | 2150 | 1450 | 20200 |
| | | **SL/HP/CI/04 – Water Ponds** | 0 | 680 | 0 | 2500 | 1470 | 4650 |
| | | **SL/HP/CI/05 – Silt Detention Dam Type Activities** | 0 | 0 | 220 | 490 | 850 | 1560 |
| **11** | **Shimla** | **SL/HP/CI/01 – Brush wood Interventions** | 2360 | 1250 | 300 | 1330 | 1840 | 7080 |
| | | **SL/HP/CI/02 – Dry Stone** | 4720 | 6300 | 5600 | 3580 | 1400 | 21600 |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | | **Activities** | | | | | | |
| | | **SL/HP/CI/03 – Crate wire Activities** | 2500 | 3800 | 3300 | 2200 | 1600 | 13400 |
| | | **SL/HP/CI/04 – Water Ponds** | 320 | 2755 | 1950 | 1310 | 1340 | 7675 |
| | | **SL/HP/CI/05 – Silt Detention Dam Type Activities** | 140 | 460 | 715 | 360 | 380 | 2055 |
| **12** | **Shimla Urban** | **SL/HP/CI/01 – Brush wood Interventions** | 350 | 400 | 0 | 930 | 250 | 1930 |
| | | **SL/HP/CI/02 – Dry Stone Activities** | 1000 | 300 | 850 | 850 | 300 | 3300 |
| | | **SL/HP/CI/03 – Crate wire Activities** | 650 | 900 | 600 | 250 | 750 | 3150 |
| | | **SL/HP/CI/04 – Water Ponds** | 0 | 0 | 1360 | 0 | 0 | 1360 |
| | | **SL/HP/CI/05 – Silt Detention Dam Type Activities** | 60 | 150 | 0 | 60 | 270 | 540 |
| **13** | **Solan** | **SL/HP/CI/01 – Brush wood Interventions** | 3550 | 2300 | 1910 | 2760 | 2960 | 13480 |
| | | **SL/HP/CI/02 – Dry Stone Activities** | 3860 | 5490 | 3620 | 2570 | 550 | 16090 |
| | | **SL/HP/CI/03 – Crate wire Activities** | 2180 | 3650 | 2950 | 1380 | 400 | 10560 |
| | | **SL/HP/CI/04 – Water Ponds** | 770 | 730 | 1660 | 2675 | 3430 | 9265 |
| | | **SL/HP/CI/05 – Silt Detention Dam Type Activities** | 210 | 50 | 855 | 670 | 1045 | 2830 |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **14** | **Suket** | **SL/HP/CI/01 – Brush wood Interventions** | 1660 | 1810 | 70 | 680 | 850 | 5070 |
| | | **SL/HP/CI/02 – Dry Stone Activities** | 3590 | 5040 | 2370 | 1520 | 1130 | 13650 |
| | | **SL/HP/CI/03 – Crate wire Activities** | 2700 | 1270 | 1500 | 1220 | 1480 | 8170 |
| | | **SL/HP/CI/04 – Water Ponds** | 400 | 0 | 0 | 90 | 2110 | 2600 |
| | | **SL/HP/CI/05 – Silt Detention Dam Type Activities** | 150 | 0 | 140 | 260 | 0 | 550 |
| **15** | **Theog** | **SL/HP/CI/01 – Brush wood Interventions** | 730 | 280 | 0 | 530 | 280 | 1820 |
| | | **SL/HP/CI/02 – Dry Stone Activities** | 2550 | 2000 | 1450 | 1500 | 650 | 8150 |
| | | **SL/HP/CI/03 – Crate wire Activities** | 0 | 300 | 1250 | 300 | 700 | 2550 |
| | | **SL/HP/CI/04 – Water Ponds** | 130 | 740 | 50 | 30 | 1340 | 2290 |
| | | **SL/HP/CI/05 – Silt Detention Dam Type Activities** | 0 | 0 | 0 | 140 | 140 | 280 |
| **16** | **Una** | **SL/HP/CI/01 – Brush wood Interventions** | 3050 | 1620 | 3000 | 3000 | 1500 | 12170 |
| | | **SL/HP/CI/02 – Dry Stone Activities** | 1840 | 3110 | 3450 | 1810 | 680 | 10890 |
| | | **SL/HP/CI/03 – Crate wire Activities** | 2800 | 2730 | 2200 | 850 | 300 | 8880 |
| | | **SL/HP/CI/04 –** | 130 | 1280 | 1270 | 2660 | 3230 | 8570 |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | | **Water Ponds** | | | | | | |
| | | **SL/HP/CI/05 – Silt Detention Dam Type Activities** | 160 | 120 | 510 | 345 | 540 | 1675 |
| **Total** | | | **122481** | **140134** | **123823** | **111375** | **82710** | **580523** |

**Division, Model and Year wise Cost of Conservation Interventions (SMC) in Himachal Pradesh**

| Sr. No | Division | Activity | 1st Year | 2nd Year | 3rd Year | 4th Year | 5th Year | Phase-I |
|---|---|---|---|---|---|---|---|---|
| | | | Estb | Estb | Estb | Estb | Estb | Estb |
| 1 | Anni | SL/HP/CI/01 – Brush wood Interventions | 4.80 | 9.50 | 3.56 | 0.60 | 0.90 | 19.36 |
| | | SL/HP/CI/02 – Dry Stone Activities | 57.60 | 59.04 | 61.38 | 37.08 | 0.00 | 215.10 |
| | | SL/HP/CI/03 – Crate wire Activities | 66.60 | 105.30 | 77.85 | 36.00 | 11.25 | 297.00 |
| | | SL/HP/CI/04 – Water Ponds | 0.21 | 2.45 | 2.45 | 8.79 | 2.38 | 16.28 |
| | | SL/HP/CI/05 – Silt Detention Dam Type Activities | 22.20 | 0.00 | 0.00 | 0.00 | 40.50 | 62.70 |
| 2 | Bilaspur | SL/HP/CI/01 – Brush wood Interventions | 14.61 | 3.00 | 2.10 | 3.60 | 3.66 | 26.97 |
| | | SL/HP/CI/02 – Dry Stone Activities | 17.28 | 151.29 | 88.11 | 43.47 | 13.50 | 313.65 |
| | | SL/HP/CI/03 – Crate wire Activities | 20.25 | 76.05 | 52.20 | 18.00 | 27.90 | 194.40 |
| | | SL/HP/CI/04 – Water Ponds | 0.14 | 4.91 | 12.31 | 9.17 | 8.75 | 35.28 |
| | | SL/HP/CI/05 – Silt Detention Dam Type Activities | 2.40 | 49.50 | 21.60 | 36.60 | 7.80 | 117.90 |
| 3 | Hamirpur | SL/HP/CI/01 – Brush wood Interventions | 0.00 | 1.20 | 0.00 | 0.00 | 0.66 | 1.86 |
| | | SL/HP/CI/02 – Dry Stone Activities | 11.34 | 21.60 | 20.16 | 11.16 | 1.35 | 65.61 |
| | | SL/HP/CI/03 – Crate wire Activities | 0.00 | 31.50 | 0.00 | 0.00 | 0.00 | 31.50 |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | | **SL/HP/CI/04 – Water Ponds** | 2.42 | 2.45 | 1.58 | 0.11 | 0.81 | 7.37 |
| | | **SL/HP/CI/05 – Silt Detention Dam Type Activities** | 6.00 | 4.80 | 10.80 | 16.20 | 0.00 | 37.80 |
| **4** | **Karsog** | **SL/HP/CI/01 – Brush wood Interventions** | 1.29 | 0.00 | 0.87 | 0.00 | 1.17 | 3.33 |
| | | **SL/HP/CI/02 – Dry Stone Activities** | 102.60 | 67.86 | 25.11 | 13.05 | 15.30 | 223.92 |
| | | **SL/HP/CI/03 – Crate wire Activities** | 31.50 | 11.25 | 10.35 | 13.50 | 0.00 | 66.60 |
| | | **SL/HP/CI/04 – Water Ponds** | 1.72 | 2.73 | 0.53 | 1.24 | 0.32 | 6.54 |
| | | **SL/HP/CI/05 – Silt Detention Dam Type Activities** | 9.00 | 0.00 | 9.00 | 0.00 | 0.00 | 18.00 |
| **5** | **Kinnaur** | **SL/HP/CI/01 – Brush wood Interventions** | 22.53 | 27.90 | 7.11 | 4.14 | 12.36 | 74.04 |
| | | **SL/HP/CI/02 – Dry Stone Activities** | 37.26 | 39.60 | 37.62 | 4.50 | 0.00 | 118.98 |
| | | **SL/HP/CI/03 – Crate wire Activities** | 173.48 | 124.65 | 39.15 | 20.93 | 7.20 | 365.41 |
| | | **SL/HP/CI/04 – Water Ponds** | 2.10 | 2.10 | 19.08 | 44.15 | 8.58 | 76.01 |
| | | **SL/HP/CI/05 – Silt Detention Dam Type Activities** | 3.00 | 16.20 | 67.20 | 67.20 | 85.80 | 239.40 |
| **6** | **Kotgarh** | **SL/HP/CI/01 – Brush wood Interventions** | 13.71 | 10.32 | 5.85 | 2.04 | 13.71 | 45.63 |
| | | **SL/HP/CI/02 – Dry Stone Activities** | 12.60 | 41.22 | 13.14 | 7.20 | 0.00 | 74.16 |
| | | **SL/HP/CI/03 – Crate wire Activities** | 53.10 | 26.55 | 11.25 | 0.00 | 0.00 | 90.90 |
| | | **SL/HP/CI/04 – Water Ponds** | 2.10 | 0.00 | 31.50 | 6.30 | 6.30 | 46.20 |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | | **SL/HP/CI/05 – Silt Detention Dam Type Activities** | 6.00 | 0.00 | 6.00 | 114.00 | 36.00 | 162.00 |
| **7** | **Kunihar** | **SL/HP/CI/01 – Brush wood Interventions** | 6.96 | 5.42 | 2.46 | 5.37 | 6.71 | 26.92 |
| | | **SL/HP/CI/02 – Dry Stone Activities** | 84.78 | 139.50 | 67.86 | 48.96 | 13.86 | 354.96 |
| | | **SL/HP/CI/03 – Crate wire Activities** | 304.88 | 210.38 | 270.00 | 161.10 | 35.10 | 981.46 |
| | | **SL/HP/CI/04 – Water Ponds** | 2.10 | 8.65 | 14.74 | 26.11 | 20.14 | 71.74 |
| | | **SL/HP/CI/05 – Silt Detention Dam Type Activities** | 15.60 | 13.20 | 100.20 | 98.40 | 126.00 | 353.40 |
| **8** | **Nachan** | **SL/HP/CI/01 – Brush wood Interventions** | 1.71 | 0.60 | 0.00 | 0.00 | 0.00 | 2.31 |
| | | **SL/HP/CI/02 – Dry Stone Activities** | 0.00 | 32.76 | 19.26 | 0.00 | 0.00 | 52.02 |
| | | **SL/HP/CI/03 – Crate wire Activities** | 0.00 | 17.10 | 82.35 | 31.95 | 0.00 | 131.40 |
| | | **SL/HP/CI/04 – Water Ponds** | 0.00 | 0.00 | 0.00 | 13.79 | 4.38 | 18.17 |
| | | **SL/HP/CI/05 – Silt Detention Dam Type Activities** | 9.00 | 9.00 | 0.00 | 0.00 | 64.50 | 82.50 |
| **9** | **Nalagarh** | **SL/HP/CI/01 – Brush wood Interventions** | 13.59 | 1.50 | 1.50 | 5.25 | 7.29 | 29.13 |
| | | **SL/HP/CI/02 – Dry Stone Activities** | 49.70 | 26.46 | 56.70 | 32.40 | 17.10 | 182.36 |
| | | **SL/HP/CI/03 – Crate wire Activities** | 0.00 | 184.55 | 56.25 | 54.00 | 27.00 | 321.80 |
| | | **SL/HP/CI/04 – Water Ponds** | 2.10 | 0.14 | 4.55 | 6.83 | 4.45 | 18.07 |
| | | **SL/HP/CI/05 – Silt Detention Dam Type Activities** | 0.00 | 24.06 | 25.80 | 14.40 | 32.40 | 96.66 |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **10** | **Rampur** | **SL/HP/CI/01 – Brush wood Interventions** | 6.60 | 6.57 | 0.72 | 6.96 | 5.94 | 26.79 |
| | | **SL/HP/CI/02 – Dry Stone Activities** | 102.60 | 76.50 | 69.84 | 63.90 | 29.70 | 342.54 |
| | | **SL/HP/CI/03 – Crate wire Activities** | 249.75 | 272.25 | 225.00 | 96.75 | 65.25 | 909.00 |
| | | **SL/HP/CI/04 – Water Ponds** | 0.00 | 2.38 | 0.00 | 8.75 | 5.15 | 16.28 |
| | | **SL/HP/CI/05 – Silt Detention Dam Type Activities** | 0.00 | 0.00 | 13.20 | 29.40 | 51.00 | 93.60 |
| **11** | **Shimla** | **SL/HP/CI/01 – Brush wood Interventions** | 7.08 | 3.75 | 0.90 | 3.99 | 5.52 | 21.24 |
| | | **SL/HP/CI/02 – Dry Stone Activities** | 84.96 | 113.40 | 100.80 | 64.44 | 25.20 | 388.80 |
| | | **SL/HP/CI/03 – Crate wire Activities** | 112.50 | 171.00 | 148.50 | 99.00 | 72.00 | 603.00 |
| | | **SL/HP/CI/04 – Water Ponds** | 1.12 | 9.64 | 6.83 | 4.59 | 4.69 | 26.87 |
| | | **SL/HP/CI/05 – Silt Detention Dam Type Activities** | 8.40 | 27.60 | 42.90 | 21.60 | 22.80 | 123.30 |
| **12** | **Shimla Urban** | **SL/HP/CI/01 – Brush wood Interventions** | 1.05 | 1.20 | 0.00 | 2.79 | 0.75 | 5.79 |
| | | **SL/HP/CI/02 – Dry Stone Activities** | 18.00 | 5.40 | 15.30 | 15.30 | 5.40 | 59.40 |
| | | **SL/HP/CI/03 – Crate wire Activities** | 29.25 | 40.50 | 27.00 | 11.25 | 33.75 | 141.75 |
| | | **SL/HP/CI/04 – Water Ponds** | 0.00 | 0.00 | 4.76 | 0.00 | 0.00 | 4.76 |
| | | **SL/HP/CI/05 – Silt Detention Dam Type Activities** | 3.60 | 9.00 | 0.00 | 3.60 | 16.20 | 32.40 |
| **13** | **Solan** | **SL/HP/CI/01 – Brush wood Interventions** | 10.65 | 6.90 | 5.73 | 8.28 | 8.88 | 40.44 |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | | **SL/HP/CI/02 – Dry Stone Activities** | 69.48 | 98.82 | 65.16 | 46.26 | 9.90 | 289.62 |
| | | **SL/HP/CI/03 – Crate wire Activities** | 98.10 | 164.25 | 132.75 | 62.10 | 18.00 | 475.20 |
| | | **SL/HP/CI/04 – Water Ponds** | 2.70 | 2.56 | 5.81 | 9.36 | 12.01 | 32.44 |
| | | **SL/HP/CI/05 – Silt Detention Dam Type Activities** | 12.60 | 3.00 | 51.30 | 40.20 | 62.70 | 169.80 |
| **14** | **Suket** | **SL/HP/CI/01 – Brush wood Interventions** | 4.98 | 5.43 | 0.21 | 2.04 | 2.55 | 15.21 |
| | | **SL/HP/CI/02 – Dry Stone Activities** | 64.62 | 90.72 | 42.66 | 27.36 | 20.34 | 245.70 |
| | | **SL/HP/CI/03 – Crate wire Activities** | 121.50 | 57.15 | 67.50 | 54.90 | 66.60 | 367.65 |
| | | **SL/HP/CI/04 – Water Ponds** | 1.40 | 0.00 | 0.00 | 0.32 | 7.39 | 9.11 |
| | | **SL/HP/CI/05 – Silt Detention Dam Type Activities** | 9.00 | 0.00 | 8.40 | 15.60 | 0.00 | 33.00 |
| **15** | **Theog** | **SL/HP/CI/01 – Brush wood Interventions** | 2.19 | 0.84 | 0.00 | 1.59 | 0.84 | 5.46 |
| | | **SL/HP/CI/02 – Dry Stone Activities** | 45.90 | 36.00 | 26.10 | 27.00 | 11.70 | 146.70 |
| | | **SL/HP/CI/03 – Crate wire Activities** | 0.00 | 13.50 | 56.25 | 13.50 | 31.50 | 114.75 |
| | | **SL/HP/CI/04 – Water Ponds** | 0.46 | 2.59 | 0.18 | 0.11 | 4.69 | 8.03 |
| | | **SL/HP/CI/05 – Silt Detention Dam Type Activities** | 0.00 | 0.00 | 0.00 | 8.40 | 8.40 | 16.80 |
| **16** | **Una** | **SL/HP/CI/01 – Brush wood Interventions** | 9.15 | 4.86 | 9.00 | 9.00 | 4.50 | 36.51 |
| | | **SL/HP/CI/02 – Dry Stone Activities** | 33.12 | 55.98 | 62.10 | 32.58 | 12.24 | 196.02 |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | | **SL/HP/CI/03 – Crate wire Activities** | 126.00 | 122.85 | 99.00 | 38.25 | 13.50 | 399.60 |
| | | **SL/HP/CI/04 – Water Ponds** | 0.46 | 4.48 | 4.45 | 9.31 | 11.31 | 30.01 |
| | | **SL/HP/CI/05 – Silt Detention Dam Type Activities** | 9.60 | 7.20 | 30.60 | 20.70 | 32.40 | 100.50 |
| **Total** | | | **2435.08** | **2982.61** | **2662.48** | **1876.77** | **1347.93** | **11304.83** |

## Site Wise Projected Area (in Hac) for Riverine and Riparian Management and Wildlife Conservation in Himachal Pradesh

| Sr No. | Treatment Site name | District | Division | Phase I | | | | | | | | Phase II | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | I | II | | III | IV | V | Phase I | | 6th Year | Phase II | Total Area (in ha) |
| | | | | Estb | Estb | Maint | Maint | Maint | Maint | Estb | Maint | Maint | Maint | |
| 1. | Gobind Sagar WLS | Bilaspur | Hamirpur WLS (Bilaspur) | 24 | 0 | 24 | 24 | 24 | 24 | 24 | 96 | 0 | 0 | 24 |
| 2. | Shri Naina Devi CR | Bilaspur | Hamirpur WLS (Bilaspur) | 10 | 0 | 10 | 10 | 10 | 10 | 10 | 40 | 0 | 0 | 10 |
| 3. | Daranghati WLS | Shimla | Sarahan Wildlife | 18 | 0 | 18 | 18 | 18 | 18 | 18 | 72 | 0 | 0 | 18 |
| 4. | Lipa Asrang WLS | Kinnaur | Sarahan Wildlife | 15 | 0 | 15 | 15 | 15 | 15 | 15 | 60 | 0 | 0 | 15 |
| 5. | Rakchham Chitkul WLS | Kinnaur | Sarahan Wildlife | 10 | 0 | 10 | 10 | 10 | 10 | 10 | 40 | 0 | 0 | 10 |
| 6. | Rupi Bhaba WLS | Kinnaur | Sarahan Wildlife | 10 | 0 | 10 | 10 | 10 | 10 | 10 | 40 | 0 | 0 | 10 |
| 7. | Sarahan Wildlife | Kinnaur | Sarahan Wildlife | 20 | 0 | 20 | 20 | 20 | 20 | 20 | 80 | 0 | 0 | 20 |
| 8. | Darlaghat CR | Shimla | Shimla WL | 35 | 0 | 35 | 35 | 35 | 35 | 35 | 140 | 0 | 0 | 35 |
| 9. | Majathal WLS | Shimla | Shimla WL | 30 | 0 | 30 | 30 | 30 | 30 | 30 | 120 | 0 | 0 | 30 |
| 10. | Kaza WL (Cold Desert Biosphere) | Lahaul Spiti | Spiti Wildlife | 25 | 0 | 25 | 25 | 25 | 25 | 25 | 100 | 0 | 0 | 25 |
| 11. | Kibber WL Sanctuary | Lahaul Spiti | Spiti Wildlife | 20 | 0 | 20 | 20 | 20 | 20 | 20 | 80 | 0 | 0 | 20 |
| 12. | Pin Valley NP | Lahaul Spiti | Spiti Wildlife | 30 | 0 | 30 | 30 | 30 | 30 | 30 | 120 | 0 | 0 | 30 |
| 13. | Khurahal (Bobber Range) | Mandi | W L Kullu | 0 | 30 | 0 | 30 | 30 | 30 | 30 | 90 | 30 | 30 | 30 |
| **Total** | | | | **247** | **30** | **247** | **277** | **277** | **277** | **277** | **1078** | **30** | **30** | **277** |

**Site Wise Projected Cost (Rs. in Lakhs) for Riverine and Riparian Management and Wildlife Conservation in Himachal Pradesh**

| Sr No. | Treatment Site name | District | Division | I | II | | III | IV | V | Phase I | | 6th Year | Phase II | Total Area (in ha) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Estb | Estb | Maint | Maint | Maint | Maint | Estb | Maint | Maint | Maint | |
| 1. | Gobind Sagar WLS | Bilaspur | Hamirpur WLS (Bilaspur) | 76.80 | 0.00 | 67.20 | 45.60 | 28.80 | 21.60 | 76.80 | 163.20 | 0.00 | 0.00 | 240.00 |
| 2. | Shri Naina Devi CR | Bilaspur | Hamirpur WLS (Bilaspur) | 32.00 | 0.00 | 28.00 | 19.00 | 12.00 | 9.00 | 32.00 | 68.00 | 0.00 | 0.00 | 100.00 |
| 3. | Daranghati WLS | Shimla | Sarahan Wildlife | 57.60 | 0.00 | 50.40 | 34.20 | 21.60 | 16.20 | 57.60 | 122.40 | 0.00 | 0.00 | 180.00 |
| 4. | Lipa Asrang WLS | Kinnaur | Sarahan Wildlife | 48.00 | 0.00 | 42.00 | 28.50 | 18.00 | 13.50 | 48.00 | 102.00 | 0.00 | 0.00 | 150.00 |
| 5. | Rakchham Chitkul WLS | Kinnaur | Sarahan Wildlife | 32.00 | 0.00 | 28.00 | 19.00 | 12.00 | 9.00 | 32.00 | 68.00 | 0.00 | 0.00 | 100.00 |
| 6. | Rupi Bhaba WLS | Kinnaur | Sarahan Wildlife | 32.00 | 0.00 | 28.00 | 19.00 | 12.00 | 9.00 | 32.00 | 68.00 | 0.00 | 0.00 | 100.00 |
| 7. | Sarahan Wildlife | Kinnaur | Sarahan Wildlife | 64.00 | 0.00 | 56.00 | 38.00 | 24.00 | 18.00 | 64.00 | 136.00 | 0.00 | 0.00 | 200.00 |
| 8. | Darlaghat CR | Shimla | Shimla WL | 112.00 | 0.00 | 98.00 | 66.50 | 42.00 | 31.50 | 112.00 | 238.00 | 0.00 | 0.00 | 350.00 |
| 9. | Majathal WLS | Shimla | Shimla WL | 96.00 | 0.00 | 84.00 | 57.00 | 36.00 | 27.00 | 96.00 | 204.00 | 0.00 | 0.00 | 300.00 |
| 10. | Kaza WL (Cold Desert Biosphere) | Lahaul Spiti | Spiti Wildlife | 80.00 | 0.00 | 70.00 | 47.50 | 30.00 | 22.50 | 80.00 | 170.00 | 0.00 | 0.00 | 250.00 |
| 11. | Kibber WL Sanctuary | Lahaul Spiti | Spiti Wildlife | 64.00 | 0.00 | 56.00 | 38.00 | 24.00 | 18.00 | 64.00 | 136.00 | 0.00 | 0.00 | 200.00 |
| 12. | Pin Valley NP | Lahaul Spiti | Spiti Wildlife | 96.00 | 0.00 | 84.00 | 57.00 | 36.00 | 27.00 | 96.00 | 204.00 | 0.00 | 0.00 | 300.00 |
| 13. | Khurahal (Bobber Range) | Mandi | W L Kullu | 0.00 | 96.00 | 0.00 | 84.00 | 57.00 | 36.00 | 96.00 | 177.00 | 27.00 | 27.00 | 300.00 |
| **Total** | | | | **790.40** | **96.00** | **691.60** | **553.30** | **353.40** | **258.30** | **886.40** | **1856.60** | **27.00** | **27.00** | **2770.00** |

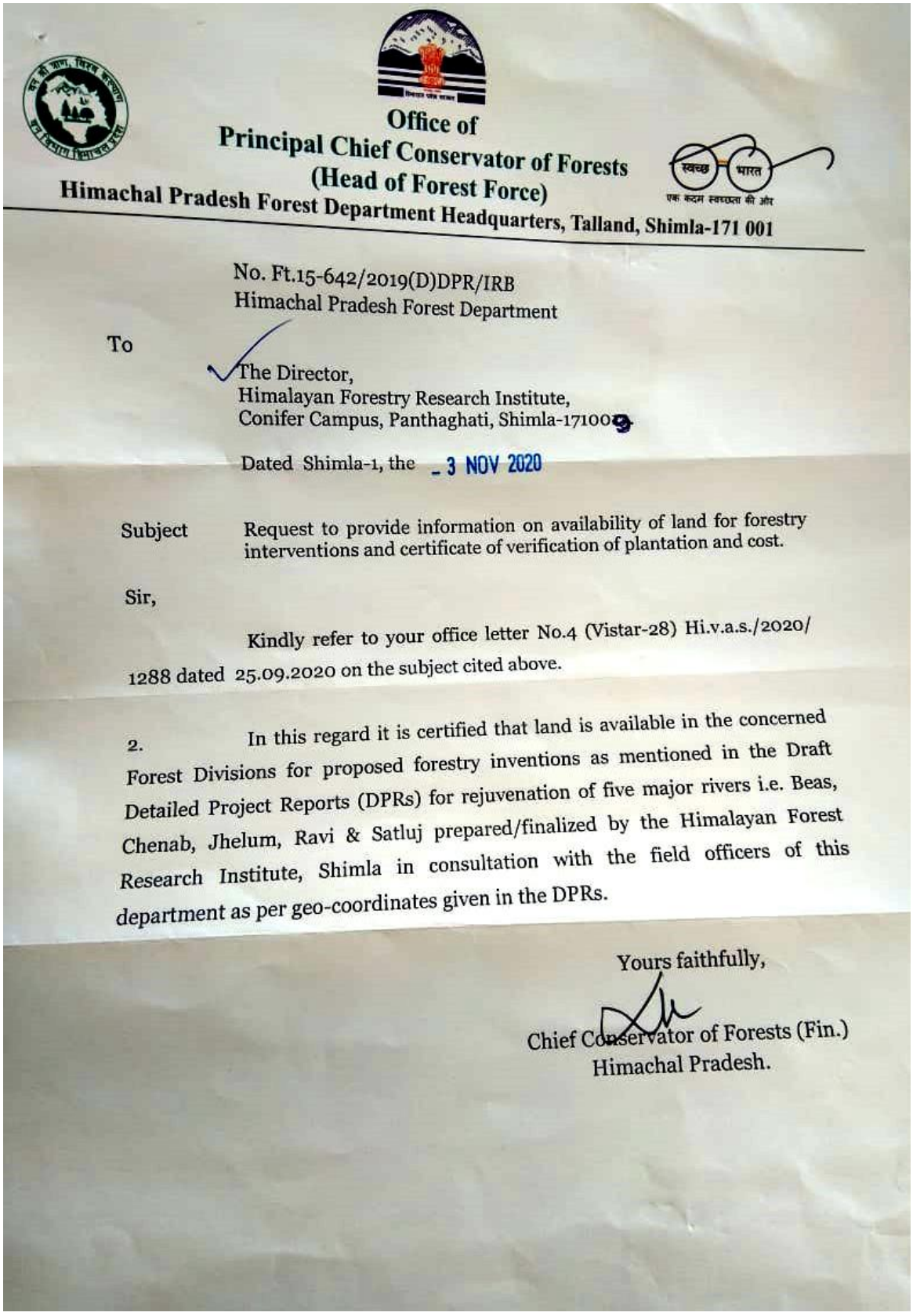
## Site Wise Proposed Extent (in ha) for Wetland Conservation in Himachal Pradesh

| Sr. No | Sites | Division | Phase I: Year Wise Extent of Area (ha) | | | | | | | | | Phase I Total | | Phase II Year Wise Extent of Area (ha) | | | Grand Total (ha) Phase I and Phase II |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | I | II | | III | | IV | | V | | | | VI | VII | Total | |
| | | | Estb | Estb | Maint | Estb | Maint | Estb | Maint | Estb | Maint | Estb | Maint | Maint | Maint | Total | |
| 1 | Nako | Sarahan Wildlife | 15 | 0 | 15.00 | 0 | 15 | 0 | 15 | 0 | 15 | 15 | 15 | 0 | 0 | 0 | 15 |
| 2 | Taani Jubbal | Shimla WL | 10 | 0 | 10.00 | 0 | 10 | 0 | 10 | 0 | 10 | 10 | 10 | 0 | 0 | 0 | 10 |
| 3 | Dhankar | Spiti Wildlife | 15 | 0 | 15.00 | 0 | 15 | 0 | 15 | 0 | 15 | 15 | 15 | 0 | 0 | 0 | 15 |
| Total | | | 40 | 0 | 40 | 0 | 40 | 0 | 40 | 0 | 40 | 40 | 40 | 0 | 0 | 0 | 40 |

## Site Wise Proposed Cost (in Lakhs) for Wetland Conservation in Himachal Pradesh

| Sr. No. | Sites | Division | Phase I: Year Wise Cost (Rs. in Lakhs) | | | | | | | | | | | Phase II: Year Wise Cost (Rs. in Lakhs) | | | Total Cost Phase I and II (Rs in Lakh) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | I | II | | III | | IV | | V | | Total | | VI | VII | Total (Rs in Lakh) | |
| | | | Estb | Estb | Maint | Estb | Maint | Estb | Maint | Estb | Maint | Estb | Maint | Maint | Maint | | |
| 1 | **Nako** | **Sarahan Wildlife** | 42.00 | 0.00 | 37.50 | 0.00 | 24.00 | 0.00 | 18.00 | 0.00 | 13.50 | 42.00 | 93.00 | 0.00 | 0.00 | 0.00 | 135.00 |
| 2 | **Taani Jubbal** | **Shimla WL** | 28.00 | 0.00 | 25.00 | 0.00 | 16.00 | 0.00 | 12.00 | 0.00 | 9.00 | 28.00 | 62.00 | 0.00 | 0.00 | 0.00 | 90.00 |
| 3 | **Dhankar** | **Spiti Wildlife** | 42.00 | 0.00 | 37.50 | 0.00 | 24.00 | 0.00 | 18.00 | 0.00 | 13.50 | 42.00 | 93.00 | 0.00 | 0.00 | 0.00 | 135.00 |
| **Total** | | | **112.00** | **0.00** | **100.00** | **0.00** | **64.00** | **0.00** | **48.00** | **0.00** | **36.00** | **112.00** | **248.00** | **0.00** | **0.00** | **0.00** | **360.00** |

**Consent Letter on Land Availability from PCCF & HoFF, Himachal Pradesh**



Office of
Principal Chief Conservator of Forests
(Head of Forest Force)
Himachal Pradesh Forest Department Headquarters, Talland, Shimla-171 001

स्वच्छ भारत
एक कदम स्वच्छता की ओर

No. Ft.15-642/2019(D)DPR/IRB
Himachal Pradesh Forest Department

To

The Director,
Himalayan Forestry Research Institute,
Conifer Campus, Panthaghati, Shimla-171009

Dated Shimla-1, the 3 NOV 2020

Subject Request to provide information on availability of land for forestry interventions and certificate of verification of plantation and cost.

Sir,

Kindly refer to your office letter No.4 (Vistar-28) Hi.v.a.s./2020/ 1288 dated 25.09.2020 on the subject cited above.

2. In this regard it is certified that land is available in the concerned Forest Divisions for proposed forestry inventions as mentioned in the Draft Detailed Project Reports (DPRs) for rejuvenation of five major rivers i.e. Beas, Chenab, Jhelum, Ravi & Satluj prepared/finalized by the Himalayan Forest Research Institute, Shimla in consultation with the field officers of this department as per geo-coordinates given in the DPRs.

Yours faithfully,

Chief Conservator of Forests (Fin.)
Himachal Pradesh.

## Site wise Purposed Area (in Ha) for Natural Landscape in Punjab

| Division | Site name | Year | | | | | | | | | Year | | | | Grand Total | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Phase I | | | | | | | Phase I | | Phase II | | | | | |
| | | (Extent in ha) | | | | | | | Total(Extent in ha) | | (Extent in ha) | | | Total (ha) | (Ha) | (Ha) |
| | | I | II | III | IV | | V | | | | VI | VII | VIII | | | |
| | | Est* | Est * | Est | Est | Main | Est* | Main | Est* | Main | Main | Main | Main | Main | Establishment | Maintenance |
| **Jalandhar** | Bank of Sutlej River | 0 | 0 | 0 | 0 | 0 | 20 | 0 | 20 | 0 | 20 | 20 | 20 | 20 | 20 | 20 |
| | Bank of Sutlej River (village - Dhillew) | 20 | 0 | 20 | 0 | 20 | 0 | 20 | 20 | 20 | 20 | 0 | 0 | 20 | 20 | 20 |
| | Bank of Sutlej River (village - Udhowal) | 15 | 0 | 15 | 0 | 15 | 0 | 15 | 15 | 15 | 15 | 0 | 0 | 15 | 15 | 15 |
| | Bank of sutlej River C | 20 | 0 | 20 | 0 | 20 | 0 | 20 | 20 | 20 | 20 | 0 | 0 | 20 | 20 | 20 |
| | Satluj Dhussi Bandh RD 126-150, 165-175 BS | 10 | 0 | 10 | 0 | 10 | 0 | 10 | 10 | 10 | 10 | 0 | 0 | 10 | 10 | 10 |
| | Satluj Dhussi Bandh RD 4-50 BS | 12 | 0 | 12 | 0 | 12 | 0 | 12 | 12 | 12 | 12 | 0 | 0 | 12 | 12 | 12 |
| | Sutlej Dhusi Bandh TD 170 to 190 B/S | 15 | 0 | 15 | 0 | 15 | 0 | 15 | 15 | 15 | 15 | 0 | 0 | 15 | 15 | 15 |
| **Ludhiana** | Budha Nalla R.D 20-46 | 0 | 20 | 0 | 20 | 0 | 0 | 20 | 20 | 20 | 20 | 20 | 0 | 20 | 20 | 20 |
| | Churwal Forest | 15 | 0 | 15 | 0 | 15 | 0 | 15 | 15 | 15 | 15 | 0 | 0 | 15 | 15 | 15 |

| Division | Site name | Year | | | | | | | | | Year | | | | Grand Total | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Phase I | | | | | | | Phase I | | Phase II | | | | | |
| | | (Extent in ha) | | | | | | | Total(Extent in ha) | | (Extent in ha) | | | Total (ha) | (Ha) | (Ha) |
| | | I | II | III | IV | | V | | | | VI | VII | VIII | | | |
| | | Est* | Est * | Est | Est | Main | Est* | Main | Est* | Main | Main | Main | Main | Main | Establishment | Maintenance |
| | Dhusi Bondh 5-L RO 40 to 70 B/S | 20 | 0 | 20 | 0 | 20 | 0 | 20 | 20 | 20 | 20 | 0 | 0 | 20 | 20 | 20 |
| | Mand Chounta | 15 | 0 | 15 | 0 | 15 | 0 | 15 | 15 | 15 | 15 | 0 | 0 | 15 | 15 | 15 |
| **Nawanshahr** | Adoana | 0 | 0 | 0 | 0 | 0 | 20 | 0 | 20 | 0 | 20 | 20 | 20 | 20 | 20 | 20 |
| | Ballowal Sonkhri | 0 | 40 | 0 | 40 | 0 | 0 | 40 | 40 | 40 | 40 | 40 | 0 | 40 | 40 | 40 |
| | Bana | 0 | 0 | 0 | 0 | 0 | 50 | 0 | 50 | 0 | 50 | 50 | 50 | 50 | 50 | 50 |
| | Bhaddi | 0 | 0 | 0 | 0 | 0 | 20 | 0 | 20 | 0 | 20 | 20 | 20 | 20 | 20 | 20 |
| | Bhanewal | 20 | 0 | 20 | 0 | 20 | 0 | 20 | 20 | 20 | 20 | 0 | 0 | 20 | 20 | 20 |
| | Burj Tehl Dass Forest | 0 | 0 | 0 | 0 | 0 | 130 | 0 | 130 | 0 | 130 | 130 | 130 | 130 | 130 | 130 |
| | Chak ilahi Baksh Forest | 0 | 0 | 0 | 0 | 0 | 14 | 0 | 14 | 0 | 14 | 14 | 14 | 14 | 14 | 14 |
| | Chandiani Kalan | 20 | 0 | 20 | 0 | 20 | 0 | 20 | 20 | 20 | 20 | 0 | 0 | 20 | 20 | 20 |
| | Fatehpur | 0 | 0 | 0 | 0 | 0 | 50 | 0 | 50 | 0 | 50 | 50 | 50 | 50 | 50 | 50 |
| | Fatehpur | 0 | 0 | 0 | 0 | 0 | 50 | 0 | 50 | 0 | 50 | 50 | 50 | 50 | 50 | 50 |
| | Ghamour | 0 | 0 | 0 | 0 | 0 | 15 | 0 | 15 | 0 | 15 | 15 | 15 | 15 | 15 | 15 |
| | Golumajra | 0 | 0 | 0 | 0 | 0 | 20 | 0 | 20 | 0 | 20 | 20 | 20 | 20 | 20 | 20 |
| | Jogewal | 0 | 10 | 0 | 10 | 0 | 0 | 10 | 10 | 10 | 10 | 10 | 0 | 10 | 10 | 10 |
| | Kalar | 40 | 0 | 40 | 0 | 40 | 0 | 40 | 40 | 40 | 40 | 0 | 0 | 40 | 40 | 40 |
| | Kukarsuha | 20 | 0 | 20 | 0 | 20 | 0 | 20 | 20 | 20 | 20 | 0 | 0 | 20 | 20 | 20 |
| | Mahadi pur Block Forest | 0 | 40 | 0 | 40 | 0 | 0 | 40 | 40 | 40 | 40 | 40 | 0 | 40 | 40 | 40 |
| | Majran Jattan | 30 | 0 | 30 | 0 | 30 | 0 | 30 | 30 | 30 | 30 | 0 | 0 | 30 | 30 | 30 |

| Division | Site name | Year | | | | | | | | | Year | | | | Grand Total | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Phase I | | | | | | | Phase I | | Phase II | | | | | |
| | | (Extent in ha) | | | | | | | Total(Extent in ha) | | (Extent in ha) | | | Total (ha) | (Ha) | (Ha) |
| | | I | II | III | IV | | V | | | | VI | VII | VIII | | | |
| | | Est* | Est * | Est | Est | Main | Est* | Main | Est* | Main | Main | Main | Main | Main | Establishment | Maintenance |
| | Malik pur Forest | 0 | 25 | 0 | 25 | 0 | 0 | 25 | 25 | 25 | 25 | 25 | 0 | 25 | 25 | 25 |
| | Mangupur | 0 | 20 | 0 | 20 | 0 | 0 | 20 | 20 | 20 | 20 | 20 | 0 | 20 | 20 | 20 |
| | Mohan Majra | 20 | 0 | 20 | 0 | 20 | 0 | 20 | 20 | 20 | 20 | 0 | 0 | 20 | 20 | 20 |
| | Nawashehar | 20 | 0 | 20 | 0 | 20 | 0 | 20 | 20 | 20 | 20 | 0 | 0 | 20 | 20 | 20 |
| | Nighi | 20 | 0 | 20 | 0 | 20 | 0 | 20 | 20 | 20 | 20 | 0 | 0 | 20 | 20 | 20 |
| | Rail Majra | 0 | 0 | 0 | 0 | 0 | 50 | 0 | 50 | 0 | 50 | 50 | 50 | 50 | 50 | 50 |
| | Raipur | 0 | 0 | 0 | 0 | 0 | 40 | 0 | 40 | 0 | 40 | 40 | 40 | 40 | 40 | 40 |
| | Rajumajra | 20 | 0 | 20 | 0 | 20 | 0 | 20 | 20 | 20 | 20 | 0 | 0 | 20 | 20 | 20 |
| | Rakkaran Drain | 25 | 0 | 25 | 0 | 25 | 0 | 25 | 25 | 25 | 25 | 0 | 0 | 25 | 25 | 25 |
| | Satluj Bandh | 30 | 0 | 30 | 0 | 30 | 0 | 30 | 30 | 30 | 30 | 0 | 0 | 30 | 30 | 30 |
| | Satluj Dhusi Bandh | 0 | 20 | 0 | 20 | 0 | 0 | 20 | 20 | 20 | 20 | 20 | 0 | 20 | 20 | 20 |
| | Siana | 0 | 20 | 0 | 20 | 0 | 0 | 20 | 20 | 20 | 20 | 20 | 0 | 20 | 20 | 20 |
| | Sutluj Dhussi Bandh RD 101 to 145 B/S | 0 | 30 | 0 | 30 | 0 | 0 | 30 | 30 | 30 | 30 | 30 | 0 | 30 | 30 | 30 |
| | Tonsa | 0 | 0 | 0 | 0 | 0 | 50 | 0 | 50 | 0 | 50 | 50 | 50 | 50 | 50 | 50 |
| | Tundewal Beharari | 0 | 0 | 0 | 0 | 0 | 50 | 0 | 50 | 0 | 50 | 50 | 50 | 50 | 50 | 50 |
| **Rupnagar** | Garhbaga | 0 | 0 | 0 | 0 | 0 | 20 | 0 | 20 | 0 | 20 | 20 | 20 | 20 | 20 | 20 |
| | Khad Bathlaur | 20 | 0 | 20 | 0 | 20 | 0 | 20 | 20 | 20 | 20 | 0 | 0 | 20 | 20 | 20 |
| | Rupnagar | 20 | 0 | 20 | 0 | 20 | 0 | 20 | 20 | 20 | 20 | 0 | 0 | 20 | 20 | 20 |
| **Total** | | **447** | **225** | **447** | **225** | **447** | **599** | **672** | **1271** | **672** | **1271** | **824** | **599** | **1271** | **1271** | **1271** |

## Site wise Purposed Cost(in Lakh) for Natural Landscape in Punjab

| Division | Site Name | Year | | | | | | | | | Year | | | | Total Cost | | Grand Total |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Phase I (Rs.in Lakhs) | | | | | | | | | Phase II (Rs. in Lakhs) | | | | | | |
| | | I | II | III | IV | | V | | Total | | VI | VII | VIII | Total | | | |
| | | Est | Est | Est | Est | Main | Est | Main | Est | Maint | Maint | Maint | Maint | Maint | Est | Maint | Total Cost |
| **Jalandhar** | Bank of Sutlej River | 0 | 0 | 3.22 | 5.02 | 0 | 22.08 | 0 | 30.33 | 0 | 10.31 | 4.27 | 1.48 | 16.05 | 30.33 | 16.05 | 46.38 |
| | Bank of Sutlej River (village - Dhillew) | 3.22 | 5.02 | 22.08 | 0 | 10.31 | 0 | 4.27 | 30.33 | 14.58 | 1.48 | 0 | 0 | 1.48 | 30.33 | 16.06 | 46.38 |
| | Bank of Sutlej River (village - Udhowal) | 2.42 | 3.77 | 16.56 | 0 | 7.73 | 0 | 3.2 | 22.75 | 10.93 | 1.11 | 0 | 0 | 1.11 | 22.75 | 12.04 | 34.79 |
| | Bank of sutlej River C | 3.22 | 5.02 | 22.08 | 0 | 10.31 | 0 | 4.27 | 30.33 | 14.58 | 1.48 | 0 | 0 | 1.48 | 30.33 | 16.06 | 46.38 |
| | Satluj Dhussi Bandh RD 126-150, 165-175 BS | 3.81 | 5.24 | 18.04 | 0 | 12.57 | 0 | 4.72 | 27.09 | 17.29 | 0.59 | 0 | 0 | 0.59 | 27.09 | 17.88 | 44.96 |
| | Satluj Dhussi Bandh RD 4-50 BS | 4.57 | 6.28 | 21.65 | 0 | 15.09 | 0 | 5.67 | 32.5 | 20.75 | 0.7 | 0 | 0 | 0.7 | 32.5 | 21.45 | 53.96 |
| | Sutlej Dhusi Bandh TD 170 to 190 B/S | 5.72 | 7.85 | 27.06 | 0 | 18.86 | 0 | 7.08 | 40.63 | 25.94 | 0.88 | 0 | 0 | 0.88 | 40.63 | 26.82 | 67.45 |

| Division | Site Name | Year | | | | | | | | | Year | | | | Total Cost | | Grand Total |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Phase I (Rs.in Lakhs) | | | | | | | | | Phase II (Rs. in Lakhs) | | | | | | |
| | | I | II | III | IV | | V | | Total | | VI | VII | VIII | Total | | | |
| | | Est | Est | Est | Est | Main | Est | Main | Est | Maint | Maint | Maint | Maint | Maint | Est | Maint | Total Cost |
| **Ludhiana** | Budha Nalla R.D 20-46 | 0 | 3.22 | 5.02 | 22.08 | 0 | 0 | 10.31 | 30.33 | 10.31 | 4.27 | 1.48 | 0 | 5.75 | 30.33 | 16.06 | 46.38 |
| | Churwal Forest | 3.84 | 0 | 0 | 0 | 1.98 | 0 | 2.12 | 3.84 | 4.1 | 1.84 | 0 | 0 | 1.84 | 3.84 | 5.94 | 9.79 |
| | Dhusi Bondh 5-L RO 40 to 70 B/S | 2.93 | 7.3 | 14.41 | 0 | 8.92 | 0 | 4.44 | 24.63 | 13.37 | 1.17 | 0 | 0 | 1.17 | 24.63 | 14.54 | 39.17 |
| | Mand Chounta | 2.42 | 3.77 | 16.56 | 0 | 7.73 | 0 | 3.2 | 22.75 | 10.93 | 1.11 | 0 | 0 | 1.11 | 22.75 | 12.04 | 34.79 |
| **Nawanshahr** | Adoana | 0 | 0 | 5.39 | 6.62 | 0 | 14.98 | 0 | 27 | 0 | 10.64 | 4.8 | 1.17 | 16.61 | 27 | 16.61 | 43.61 |
| | Ballowal Sonkhri | 0 | 10.79 | 13.25 | 29.96 | 0 | 0 | 21.28 | 54 | 21.28 | 9.6 | 2.35 | 0 | 11.94 | 54 | 33.22 | 87.22 |
| | Bana | 0 | 0 | 13.49 | 16.56 | 0 | 37.45 | 0 | 67.5 | 0 | 26.6 | 11.99 | 2.93 | 41.53 | 67.5 | 41.53 | 109.03 |
| | Bhaddi | 0 | 0 | 5.39 | 6.62 | 0 | 14.98 | 0 | 27 | 0 | 10.64 | 4.8 | 1.17 | 16.61 | 27 | 16.61 | 43.61 |
| | Bhanewal | 5.39 | 6.62 | 14.98 | 0 | 10.64 | 0 | 4.8 | 27 | 15.44 | 1.17 | 0 | 0 | 1.17 | 27 | 16.61 | 43.61 |
| | Burj Tehl Dass Forest | 0 | 0 | 35.06 | 43.05 | 0 | 97.38 | 0 | 175.5 | 0 | 69.16 | 31.19 | 7.62 | 107.97 | 175.5 | 107.97 | 283.47 |
| | Chak ilahi Baksh Forest | 0 | 0 | 3.78 | 4.64 | 0 | 10.49 | 0 | 18.9 | 0 | 7.45 | 3.36 | 0.82 | 11.63 | 18.9 | 11.63 | 30.53 |
| | Chandiani Kalan | 5.39 | 6.62 | 14.98 | 0 | 10.64 | 0 | 4.8 | 27 | 15.44 | 1.17 | 0 | 0 | 1.17 | 27 | 16.61 | 43.61 |
| | Fatehpur | 0 | 0 | 7.33 | 18.25 | 0 | 36.01 | 0 | 61.58 | 0 | 22.31 | 11.11 | 2.93 | 36.35 | 61.58 | 36.35 | 97.93 |
| | Fatehpur | 0 | 0 | 7.33 | 18.25 | 0 | 36.01 | 0 | 61.58 | 0 | 22.31 | 11.11 | 2.93 | 36.35 | 61.58 | 36.35 | 97.93 |
| | Ghamour | 0 | 0 | 2.2 | 5.47 | 0 | 10.8 | 0 | 18.48 | 0 | 6.69 | 3.33 | 0.88 | 10.9 | 18.48 | 10.9 | 29.38 |
| | Golumajra | 0 | 0 | 5.39 | 6.62 | 0 | 14.98 | 0 | 27 | 0 | 10.64 | 4.8 | 1.17 | 16.61 | 27 | 16.61 | 43.61 |
| | Jogewal | 0 | 2.56 | 0 | 0 | 0 | 0 | 1.32 | 2.56 | 1.32 | 1.41 | 1.23 | 0 | 2.64 | 2.56 | 3.96 | 6.52 |

| Division | Site Name | Year | | | | | | | | | Year | | | | Total Cost | | Grand Total |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Phase I (Rs.in Lakhs) | | | | | | | | | Phase II (Rs. in Lakhs) | | | | | | |
| | | I | II | III | IV | | V | | Total | | VI | VII | VIII | Total | | | |
| | | Est | Est | Est | Est | Main | Est | Main | Est | Maint | Maint | Maint | Maint | Maint | Est | Maint | Total Cost |
| | Kalar | 10.79 | 13.25 | 29.96 | 0 | 21.28 | 0 | 9.6 | 54 | 30.88 | 2.35 | 0 | 0 | 2.35 | 54 | 33.23 | 87.22 |
| | Kukarsuha | 5.12 | 0 | 0 | 0 | 2.64 | 0 | 2.83 | 5.12 | 5.47 | 2.46 | 0 | 0 | 2.46 | 5.12 | 7.93 | 13.05 |
| | Mahadi pur Block Forest | 0 | 10.25 | 0 | 0 | 0 | 0 | 5.28 | 10.25 | 5.28 | 5.65 | 4.91 | 0 | 10.57 | 10.25 | 15.85 | 26.1 |
| | Majran Jattan | 8.09 | 9.94 | 22.47 | 0 | 15.96 | 0 | 7.2 | 40.5 | 23.16 | 1.76 | 0 | 0 | 1.76 | 40.5 | 24.92 | 65.42 |
| | Malik pur Forest | 0 | 6.74 | 8.28 | 18.73 | 0 | 0 | 13.3 | 33.75 | 13.3 | 6 | 1.47 | 0 | 7.46 | 33.75 | 20.76 | 54.51 |
| | Mangupur | 0 | 5.12 | 0 | 0 | 0 | 0 | 2.64 | 5.12 | 2.64 | 2.83 | 2.46 | 0 | 5.28 | 5.12 | 7.92 | 13.05 |
| | Mohan Majra | 5.39 | 6.62 | 14.98 | 0 | 10.64 | 0 | 4.8 | 27 | 15.44 | 1.17 | 0 | 0 | 1.17 | 27 | 16.61 | 43.61 |
| | Nawashehar | 5.39 | 6.62 | 14.98 | 0 | 10.64 | 0 | 4.8 | 27 | 15.44 | 1.17 | 0 | 0 | 1.17 | 27 | 16.61 | 43.61 |
| | Nighi | 5.39 | 6.62 | 14.98 | 0 | 10.64 | 0 | 4.8 | 27 | 15.44 | 1.17 | 0 | 0 | 1.17 | 27 | 16.61 | 43.61 |
| | Rail Majra | 0 | 0 | 13.49 | 16.56 | 0 | 37.45 | 0 | 67.5 | 0 | 26.6 | 11.99 | 2.93 | 41.53 | 67.5 | 41.53 | 109.03 |
| | Raipur | 0 | 0 | 10.79 | 13.25 | 0 | 29.96 | 0 | 54 | 0 | 21.28 | 9.6 | 2.35 | 33.22 | 54 | 33.22 | 87.22 |
| | Rajumajra | 5.12 | 0 | 0 | 0 | 2.64 | 0 | 2.83 | 5.12 | 5.47 | 2.46 | 0 | 0 | 2.46 | 5.12 | 7.93 | 13.05 |
| | Rakkaran Drain | 6.74 | 8.28 | 18.73 | 0 | 13.3 | 0 | 6 | 33.75 | 19.3 | 1.47 | 0 | 0 | 1.47 | 33.75 | 20.77 | 54.51 |
| | Satluj Bandh | 8.09 | 9.94 | 22.47 | 0 | 15.96 | 0 | 7.2 | 40.5 | 23.16 | 1.76 | 0 | 0 | 1.76 | 40.5 | 24.92 | 65.42 |
| | Satluj Dhusi Bandh | 0 | 5.39 | 6.62 | 14.98 | 0 | 0 | 10.64 | 27 | 10.64 | 4.8 | 1.17 | 0 | 5.97 | 27 | 16.61 | 43.61 |
| | Siana | 0 | 5.12 | 0 | 0 | 0 | 0 | 2.64 | 5.12 | 2.64 | 2.83 | 2.46 | 0 | 5.28 | 5.12 | 7.92 | 13.05 |
| | Sutluj Dhussi Bandh RD 101 to 145 | 0 | 4.83 | 7.53 | 33.13 | 0 | 0 | 15.46 | 45.49 | 15.46 | 6.4 | 2.22 | 0 | 8.62 | 45.49 | 24.08 | 69.57 |

| Division | Site Name | Year | | | | | | | | | Year | | | | Total Cost | | Grand Total |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Phase I (Rs.in Lakhs) | | | | | | | | | Phase II (Rs. in Lakhs) | | | | | | |
| | | I | II | III | IV | | V | | Total | | VI | VII | VIII | Total | | | |
| | | Est | Est | Est | Est | Main | Est | Main | Est | Maint | Maint | Maint | Maint | Maint | Est | Maint | Total Cost |
| | B/S | | | | | | | | | | | | | | | | |
| | Tonsa | 0 | 0 | 8.06 | 12.55 | 0 | 55.21 | 0 | 75.82 | 0 | 25.77 | 10.67 | 3.7 | 40.14 | 75.82 | 40.14 | 115.96 |
| | Tundewal Beharari | 0 | 0 | 8.06 | 12.55 | 0 | 55.21 | 0 | 75.82 | 0 | 25.77 | 10.67 | 3.7 | 40.14 | 75.82 | 40.14 | 115.96 |
| **Rupnagar** | Garhbaga | 0 | 0 | 3.22 | 5.02 | 0 | 22.08 | 0 | 30.33 | 0 | 10.31 | 4.27 | 1.48 | 16.05 | 30.33 | 16.05 | 46.38 |
| | Khad Bathlaur | 5.39 | 6.62 | 14.98 | 0 | 10.64 | 0 | 4.8 | 27 | 15.44 | 1.17 | 0 | 0 | 1.17 | 27 | 16.61 | 43.61 |
| | Rupnagar | 5.39 | 6.62 | 14.98 | 0 | 10.64 | 0 | 4.8 | 27 | 15.44 | 1.17 | 0 | 0 | 1.17 | 27 | 16.61 | 43.61 |
| **Total** | | **113.88** | **186.05** | **529.84** | **309.91** | **239.76** | **495.10** | **191.08** | **1634.78** | **430.84** | **381.06** | **157.70** | **37.26** | **576.01** | **1634.78** | **1006.85** | **2641.63** |

# List of sites along with Area and Latitude & Longitudes

| District | Division | Sitename | Area | GPS Co-ordinate-1 | | | GPS Co-ordinate-1I | | | GPS Co-ordinate-1II | | | GPS Co-ordinate-1V | | | Priority |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Lat | Long | Ele | Lat | Long | Ele | Lat | Long | Ele | Lat | Long | Ele | |
| Jalandhar | Jalandhar | Sutlej Dhusi Bandh TD 170 to 190 B/S | 15 | 32.2258 | 76.7225 | 0 | 32.1417 | 76.7644 | 0 | 32.2139 | 76.7797 | 0 | 31.9083 | 76.8565 | 0 | Low |
| Jalandhar | Jalandhar | Satluj Dhussi Bandh RD 4-50 BS | 12 | 30.9794 | 75.5874 | 0 | 30.9790 | 75.5754 | 0 | 30.9855 | 75.5486 | 0 | 30.9897 | 75.5318 | 0 | Low |
| Jalandhar | Jalandhar | Satluj Dhussi Bandh RD 126-150, 165-175 BS | 10 | 31.0427 | 75.2399 | 0 | 35.8125 | 75.2092 | 0 | 41.0769 | 91.1542 | 0 | 31.9006 | 97.8992 | 0 | Low |
| Saheed Bhagat Singh Nagar | Nawanshahr | Ballowal Sonkhri | 40 | 31.1145 | 76.4120 | 0 | 31.1147 | 76.4122 | 0 | 31.1149 | 76.4100 | 0 | 31.1164 | 76.4106 | 0 | High |
| Saheed Bhagat Singh Nagar | Nawanshar | Bana | 50 | 31.0319 | 76.4589 | 0 | 31.0323 | 76.4565 | 0 | 31.0300 | 76.4576 | 0 | 31.0310 | 76.4565 | 0 | Moderate |
| Saheed Bhagat Singh Nagar | Nawanshahr | Fatehpur | 50 | 31.0323 | 76.4476 | 0 | 31.0335 | 76.4462 | 0 | 31.0391 | 76.4527 | 0 | 31.0373 | 76.4546 | 0 | High |
| Saheed Bhagat Singh Nagar | Nawanshahr | Fatehpur | 50 | 31.0323 | 76.4476 | 0 | 31.0335 | 76.4462 | 0 | 31.0391 | 76.4527 | 0 | 31.0373 | 76.4546 | 0 | High |
| Saheed Bhagat Singh Nagar | Nawanshahr | Golumajra | 20 | 31.0638 | 76.4348 | 0 | 0.0000 | 0.0000 | 0 | 0.0000 | 0.0000 | 0 | 0.0000 | 0.0000 | 0 | High |
| Saheed Bhagat Singh Nagar | Nawanshahr | Kalar | 40 | 31.1036 | 76.4234 | 0 | 31.1053 | 76.4320 | 0 | 31.1075 | 76.4310 | 0 | 31.1049 | 76.4233 | 0 | High |
| Saheed Bhagat Singh Nagar | Nawanshahr | Majran Jattan | 30 | 31.0381 | 76.4293 | 0 | 0.0000 | 0.0000 | 0 | 0.0000 | 0.0000 | 0 | 0.0000 | 0.0000 | 0 | High |
| Saheed Bhagat Singh Nagar | Nawanshahr | Rail Majra | 50 | 31.0098 | 76.4682 | 0 | 31.0104 | 76.4669 | 0 | 31.0123 | 76.4667 | 0 | 31.9083 | 76.8565 | 0 | High |
| Saheed Bhagat Singh Nagar | Nawanshahr | Raipur | 40 | 31.0356 | 76.4429 | 0 | 0.0000 | 0.0000 | 0 | 0.0000 | 0.0000 | 0 | 0.0000 | 0.0000 | 0 | High |
| Saheed Bhagat Singh Nagar | Nawanshahr | Satluj Bandh | 30 | 30.9936 | 76.4592 | 0 | 30.9799 | 76.4247 | 0 | 0.0000 | 0.0000 | 0 | 0.0000 | 0.0000 | 0 | Moderate |
| Saheed Bhagat Singh Nagar | Nawanshahr | Tonsa | 50 | 31.0183 | 76.4638 | 0 | 31.0154 | 76.4643 | 0 | 31.0185 | 76.4624 | 0 | 31.0150 | 76.4614 | 0 | High |
| Saheed Bhagat Singh Nagar | Nawanshahr | Tundewal Beharari | 50 | 31.0610 | 76.4248 | 0 | 31.0594 | 76.4275 | 0 | 31.0604 | 76.4238 | 0 | 31.0583 | 76.4255 | 0 | High |
| Saheed Bhagat Singh Nagar | Nawanshahr | Adoana | 20 | 31.1426 | 76.3958 | 0 | 0.0000 | 0.0000 | 0 | 0.0000 | 0.0000 | 0 | | | 0 | High |
| Saheed Bhagat Singh Nagar | Nawanshahr | Bhaddi | 20 | 0.0000 | 0.0000 | 0 | 0.0000 | 0.0000 | 0 | 0.0000 | 0.0000 | 0 | 31.1312 | 76.3600 | 302 | High |
| Saheed Bhagat Singh Nagar | Nawanshahr | Bhanewal | 20 | 31.1182 | 76.3667 | 342 | 31.1183 | 76.3665 | 0 | 31.1182 | 76.3668 | 0 | 31.1184 | 76.3665 | 0 | High |
| Saheed Bhagat Singh Nagar | Nawanshahr | Chandiani Kalan | 20 | 31.1653 | 76.3269 | 355 | 31.1658 | 76.3266 | 0 | 31.1652 | 76.3266 | 0 | 31.1655 | 76.3268 | 0 | Moderate |
| Ludhina | Ludhiana | Mand Chounta | 15 | 30.9800 | 76.0678 | 0 | 30.9808 | 76.0692 | 0 | 30.9786 | 76.0692 | 0 | 30.9753 | 76.0700 | 0 | Moderate |

| | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Ludhina | Ludhiana | Churwal Forest | 15 | 31.0064 | 75.8858 | 0 | 31.0078 | 75.8836 | 0 | 31.0061 | 75.8808 | 0 | 31.0053 | 75.8836 | 0 | Low |
| Ludhina | Ludhiana | Budha Nalla R.D 20-46 | 20 | 30.9858 | 76.0638 | 248 | 30.9856 | 76.0636 | 0 | 30.9856 | 76.0637 | 0 | 30.9858 | 76.0638 | 0 | Moderate |
| Saheed Bhagat Singh Nagar | Nawanshahr | Ghamour | 15 | 31.0886 | 76.2880 | 0 | 0.0000 | 0.0000 | 0 | 0.0000 | 0.0000 | 0 | 0.0000 | 0.0000 | 0 | Low |
| Saheed Bhagat Singh Nagar | Nawanshahr | Jogewal | 10 | 31.0820 | 76.3314 | 0 | 0.0000 | 0.0000 | 0 | 0.0000 | 0.0000 | 0 | 0.0000 | 0.0000 | 0 | Moderate |
| Saheed Bhagat Singh Nagar | Nawanshahr | Kukarsuha | 20 | 31.1733 | 76.3612 | 445 | 31.1738 | 76.3619 | 0 | 31.1736 | 76.3616 | 0 | 31.1737 | 76.3620 | 0 | High |
| Saheed Bhagat Singh Nagar | Nawanshahr | Mangupur | 20 | 31.1665 | 76.3407 | 0 | 31.1721 | 76.3387 | 0 | 0.0000 | 0.0000 | 0 | 0.0000 | 0.0000 | 0 | High |
| Saheed Bhagat Singh Nagar | Nawanshahr | Rajumajra | 20 | 31.1409 | 76.3947 | 0 | 0.0000 | 0.0000 | 0 | 0.0000 | 0.0000 | 0 | 0.0000 | 0.0000 | 0 | High |
| Saheed Bhagat Singh Nagar | Nawanshahr | Rakkaran Drain | 25 | 31.0242 | 76.2983 | 0 | 0.0000 | 0.0000 | 0 | 0.0000 | 0.0000 | 0 | 0.0000 | 0.0000 | 0 | Low |
| Saheed Bhagat Singh Nagar | Nawanshahr | Satluj Dhusi Bandh | 20 | 31.0082 | 76.3006 | 0 | 0.0000 | 0.0000 | 0 | 0.0000 | 0.0000 | 0 | 0.0000 | 0.0000 | 0 | Low |
| Saheed Bhagat Singh Nagar | Nawanshahr | Siana | 20 | 31.0745 | 76.2808 | 0 | 0.0000 | 0.0000 | 0 | 0.0000 | 0.0000 | 0 | 0.0000 | 0.0000 | 0 | Low |
| Saheed Bhagat Singh Nagar | Nawanshahr | Burj Tehl Dass Forest | 130 | 31.0202 | 76.6360 | 0 | 31.0193 | 76.6360 | 0 | 31.0210 | 76.6604 | 0 | 31.7825 | 76.7289 | 0 | High |
| Saheed Bhagat Singh Nagar | Nawanshahr | Chak ilahi Baksh Forest | 14 | 31.0116 | 76.2294 | 0 | 31.0117 | 76.2224 | 0 | 31.0132 | 76.2279 | 0 | 31.0142 | 76.2224 | 0 | Low |
| Saheed Bhagat Singh Nagar | Nawanshahr | Mahadi pur Block Forest | 40 | 31.0089 | 76.1988 | 0 | 31.0044 | 76.1872 | 0 | 31.0105 | 76.1978 | 0 | 31.0052 | 76.1811 | 0 | Moderate |
| Saheed Bhagat Singh Nagar | Nawanshahr | Malik pur Forest | 25 | 31.0085 | 76.1973 | 0 | 31.0207 | 76.2456 | 0 | 31.0173 | 76.2456 | 0 | 0.0000 | 0.0000 | 0 | Moderate |
| Saheed Bhagat Singh Nagar | Nawanshahr | Sutluj Dhussi Bandh RD 101 to 145 B/S | 30 | 31.0367 | 76.6442 | 0 | 31.0277 | 76.5613 | 0 | 0.0000 | 0.0000 | 0 | 0.0000 | 0.0000 | 0 | High |
| Ludhina | Ludhiana | Dhusi Bondh 5-L RO 40 to 70 B/S | 20 | 30.9638 | 75.5413 | 0 | 30.9615 | 75.4181 | 0 | 0.0000 | 0.0000 | 0 | 0.0000 | 0.0000 | 0 | Low |
| Rupnagar | Rupnagar | Garhbaga | 20 | 31.0161 | 0.0000 | 763 | 0.0000 | 0.0000 | 0 | 0.0000 | 0.0000 | 0 | 0.0000 | 0.0000 | 0 | Moderate |
| Rupnagar | Rupnagar | khad Bathlaur | 20 | 31.0231 | 76.5231 | 274 | 31.0234 | 76.5235 | 0 | 31.0234 | 76.5236 | 0 | 31.0236 | 76.5232 | 0 | Low |
| Jalandhar | Jalandhar | Bank of Sutlej River (village - Dhillew) | 20 | 31.0032 | 76.2217 | 252 | 31.0033 | 76.2219 | 254 | 31.0031 | 76.2220 | 249 | 0.0000 | 0.0000 | 0 | Low |
| Jalandhar | Jalandhar | Bank of Sutlej River (village - Udhowal) | 15 | 30.9849 | 76.1473 | 252 | 30.9823 | 76.1480 | 249 | 30.9821 | 76.1487 | 247 | 0.0000 | 0.0000 | 0 | Low |
| Jalandhar | Jalandhar | Bank of Sutlej river | 20 | 31.0011 | 75.7406 | 238 | 0.0000 | 0.0000 | 0 | 0.0000 | 0.0000 | 0 | 0.0000 | 0.0000 | 0 | Low |
| Jalandhar | Jalandhar | Bank of sutlej river C | 20 | 30.9943 | 76.0398 | 242 | 30.9942 | 76.0399 | 246 | 30.9942 | 76.0399 | 246 | 0.0000 | 0.0000 | 0 | Low |
| Saheed Bhagat Singh Nagar | Nawanshahr | Mohan Majra | 20 | 31.0847 | 76.4119 | 0 | 31.0892 | 76.4161 | 0 | 0.0000 | 0.0000 | 0 | 0.0000 | 0.0000 | 0 | High |
| Saheed Bhagat Singh Nagar | Nawanshahr | Nighi | 20 | 31.0732 | 76.4167 | 0 | 31.0721 | 76.4151 | 0 | 31.0718 | 76.4124 | 0 | 31.0715 | 76.4127 | 0 | High |

| | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Rupnagar | Rupnagar | Rupnagar | 20 | 31.0231 | 76.5231 | 274 | 0.0000 | 0.0000 | 0 | 0.0000 | 0.0000 | 0 | 0.0000 | 0.0000 | 0 | Low |
| Saheed Bhagat Singh Nagar | Nawanshahr | Nawashehar | 20 | 31.1255 | 76.1187 | 259 | 0.0000 | 0.0000 | 0 | 0.0000 | 0.0000 | 0 | 0.0000 | 0.0000 | 0 | Low |

## Division, Activity and Year Wise Proposed Extent of Plantations in Agriculture Landscapes in Punjab

| Sr.No. | Division | Activity | Phase I (in Ha) | | | | | | | | | Phase II (in Ha) | | Grand Total (inha) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | I | II | | III | | IV | V | Phase I | | VI | Phase II | |
| | | | Estb | Estb | Maint | Estb | Maint | Maint | Main | Esttb | Maint | Maint | Maint | |
| 1. | Amritsar | SL/PB/AL/01 - Boundary Plantation | 320 | 350 | 320 | 225 | 670 | 895 | 575 | 895 | 895 | 225 | 225 | 895 |
| | | SL/PB/AL/02 - Block Plantation | 120 | 70 | 120 | 60 | 190 | 250 | 130 | 250 | 250 | 60 | 60 | 250 |
| 2. | Ferozepur | SL/PB/AL/01 - Boundary Plantation | 320 | 315 | 320 | 250 | 635 | 885 | 565 | 885 | 885 | 250 | 250 | 885 |
| | | SL/PB/AL/02 - Block Plantation | 96 | 105 | 96 | 50 | 201 | 251 | 155 | 251 | 251 | 50 | 50 | 251 |
| 3. | Jalandhar | SL/PB/AL/01 - Boundary Plantation | 320 | 315 | 320 | 250 | 635 | 885 | 565 | 885 | 885 | 250 | 250 | 885 |
| | | SL/PB/AL/02 - Block Plantation | 96 | 105 | 96 | 50 | 201 | 251 | 155 | 251 | 251 | 50 | 50 | 251 |
| 4. | Ludhiana | SL/PB/AL/01 - Boundary Plantation | 400 | 315 | 400 | 250 | 715 | 965 | 565 | 965 | 965 | 250 | 250 | 965 |
| | | SL/PB/AL/02 - Block Plantation | 120 | 84 | 120 | 75 | 204 | 279 | 159 | 279 | 279 | 75 | 75 | 279 |
| 5. | Nawanshahr | SL/PB/AL/01 - Boundary Plantation | 400 | 315 | 400 | 200 | 715 | 915 | 515 | 915 | 915 | 200 | 200 | 915 |
| | | SL/PB/AL/02 - Block Plantation | 120 | 84 | 120 | 50 | 204 | 254 | 134 | 254 | 254 | 50 | 50 | 254 |
| 6. | Rupnagar | SL/PB/AL/01 - Boundary Plantation | 400 | 315 | 400 | 200 | 715 | 915 | 515 | 915 | 915 | 200 | 200 | 915 |
| | | SL/PB/AL/02 - Block Plantation | 120 | 84 | 120 | 50 | 204 | 254 | 134 | 254 | 254 | 50 | 50 | 254 |
| 7. | SAS Nagar | SL/PB/AL/01 - Boundary Plantation | 400 | 315 | 400 | 225 | 715 | 940 | 540 | 940 | 940 | 225 | 225 | 940 |
| | | SL/PB/AL/02 - Block Plantation | 120 | 84 | 120 | 60 | 204 | 264 | 144 | 264 | 264 | 60 | 60 | 264 |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Total** | 3352 | 2856 | 3352 | 1995 | 6208 | 8203 | 4851 | 8203 | 8203 | 1995 | 1995 | 8203 |

## Division, Activity and Year Wise Proposed Cost of Plantations in Agriculture Landscapes in Punjab

| Sr.No. | Division | Activity | Phase I (in Lakhs) | | | | | | | | | Phase II (in Lakhs) | | Gran Total (in Lakhs |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | I | II | | III | | IV | V | Phase I | | VI | P-II | |
| | | | Estb | Estb | Main | Estb | Main | Maint | Main | Estb | Maint | Main | Main | |
| 1. | Amritsar | SL/PB/AL/01 - Boundary Plantation | 28.80 | 31.50 | 15.41 | 20.25 | 34.49 | 49.01 | 33.05 | 80.55 | 131.96 | 13.27 | 13.27 | 225.78 |
| | | SL/PB/AL/02 - Block Plantation | 57.60 | 33.60 | 30.82 | 28.80 | 50.95 | 69.92 | 37.07 | 120 | 188.76 | 17.64 | 17.64 | 326.4 |
| 2. | Ferozepur | SL/PB/AL/01 - Boundary Plantation | 28.8 | 28.35 | 15.41 | 22.50 | 32.81 | 48.29 | 32.36 | 79.65 | 128.87 | 14.75 | 14.75 | 223.27 |
| | | SL/PB/AL/02 - Block Plantation | 46.08 | 50.40 | 24.65 | 24.00 | 53.34 | 69.91 | 44.61 | 120.48 | 192.51 | 14.70 | 14.70 | 327.69 |
| 3. | Jalandhar | SL/PB/AL/01 - Boundary Plantation | 28.8 | 28.35 | 15.41 | 22.50 | 32.81 | 48.29 | 32.36 | 79.65 | 128.87 | 14.75 | 14.75 | 223.27 |
| | | SL/PB/AL/02 - Block Plantation | 46.08 | 50.40 | 24.65 | 24.00 | 53.34 | 69.91 | 44.61 | 120.48 | 192.51 | 14.70 | 14.70 | 327.69 |
| 4. | Ludhiana | SL/PB/AL/01 - Boundary Plantation | 36.00 | 28.35 | 19.26 | 22.50 | 37.22 | 53.01 | 32.36 | 86.85 | 141.85 | 14.75 | 14.75 | 243.45 |
| | | SL/PB/AL/02 - Block Plantation | 57.60 | 40.32 | 30.82 | 36.00 | 54.54 | 77.62 | 45.31 | 133.92 | 208.29 | 22.05 | 22.05 | 364.26 |
| 5. | Nawanshah | SL/PB/AL/01 - Boundary Plantation | 36.00 | 28.35 | 19.26 | 18.00 | 37.22 | 50.60 | 29.61 | 82.35 | 136.69 | 11.80 | 11.80 | 230.84 |
| | | SL/PB/AL/02 - Block Plantation | 57.60 | 40.32 | 30.82 | 24.00 | 54.54 | 71.20 | 38.44 | 121.92 | 195.00 | 14.70 | 14.70 | 331.62 |
| 6. | Rupnagar | SL/PB/AL/01 - Boundary Plantation | 36.00 | 28.35 | 19.26 | 18.00 | 37.22 | 50.60 | 29.61 | 82.35 | 136.69 | 11.80 | 11.80 | 230.84 |
| | | SL/PB/AL/02 - Block Plantation | 57.60 | 40.32 | 30.82 | 24.00 | 54.54 | 71.20 | 38.44 | 121.92 | 195.00 | 14.70 | 14.70 | 331.62 |
| 7. | SAS Nagar | SL/PB/AL/01 - Boundary Plantation | 36.00 | 28.35 | 19.26 | 20.25 | 37.22 | 51.80 | 30.98 | 84.60 | 139.26 | 13.27 | 13.27 | 237.13 |

| | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | **SL/PB/AL/02 - Block Plantation** | 57.60 | 40.32 | 30.82 | 28.80 | 54.54 | 73.77 | 41.19 | 126.72 | 200.32 | 17.64 | 17.64 | 344.68 |
| **Total** | | | **610.56** | **497.28** | **326.67** | **333.6** | **624.78** | **855.13** | **510** | **1441.44** | **2316.58** | **210.52** | **210.52** | **3968.54** |

## Division, Activity and Year Wise Proposed Extent of Plantations in Urban Landscapes in Punjab

| Sr. | Division | Activity | Phase I (Area in Ha) | | | | | | | | | Phase II (Area in Ha) | | Grand Total |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | I | II | | III | | IV | V | Phase I | | VI | Phase II | |
| | | | Estb | Estb | Maint | Estb | Maint | Maint | Maint | Estb | Maint | Maint | Maint | |
| 1 | Amritsar | SL/PB/UL/01 - Bioremediation and Bio filtration | 1 | 0 | 1 | 0 | 1 | 1 | 0 | 1 | 1 | 0 | 0 | 1 |
| | | SL/PB/UL/03 - Institution Plantation | 10 | 10 | 10 | 10 | 20 | 30 | 20 | 30 | 30 | 10 | 10 | 30 |
| | | SL/PB/UL/04- Eco-Park Development | 0.5 | 0 | 0.5 | 0 | 0.5 | 0.5 | 0 | 0.5 | 0.5 | 0 | 0 | 0.5 |
| 2 | Ferozepur | SL/PB/UL/01 - Bioremediation and Bio filtration | 0.1 | 0 | 0.1 | 0 | 0.1 | 0.1 | 0 | 0.1 | 0.1 | 0 | 0 | 0.1 |
| | | SL/PB/UL/02 - Riverfront Development | 1 | 0 | 1 | 0 | 1 | 1 | 0 | 1 | 1 | 0 | 0 | 1 |
| | | SL/PB/UL/03 - Institution Plantation | 20 | 20 | 20 | 15 | 40 | 55 | 35 | 55 | 55 | 15 | 15 | 55 |
| | | SL/PB/UL/04- Eco-Park Development | 1 | 0 | 1 | 0 | 1 | 1 | 0 | 1 | 1 | 0 | 0 | 1 |
| 3 | Jalandhar | SL/PB/UL/01 - Bioremediation and Bio filtration | 2 | 0 | 2 | 0 | 2 | 2 | 0 | 2 | 2 | 0 | 0 | 2 |
| | | SL/PB/UL/03 - Institution Plantation | 15 | 15 | 15 | 10 | 30 | 40 | 25 | 40 | 40 | 10 | 10 | 40 |
| | | SL/PB/UL/04- Eco-Park Development | 2 | 0 | 2 | 0 | 2 | 2 | 0 | 2 | 2 | 0 | 0 | 2 |

| | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **4** | **Ludhiana** | **SL/PB/UL/01 - Bioremediation and Bio filtration** | 10 | 0 | 10 | 0 | 10 | 10 | 0 | 10 | 10 | 0 | 0 | 10 |
| | | **SL/PB/UL/02 - Riverfront Development** | 0.1 | 0 | 0.1 | 0 | 0.1 | 0.1 | 0 | 0.1 | 0.1 | 0 | 0 | 0.1 |
| | | **SL/PB/UL/03 - Institution Plantation** | 15 | 15 | 15 | 12 | 30 | 42 | 27 | 42 | 42 | 12 | 12 | 42 |
| | | **SL/PB/UL/04- Eco-Park Development** | 3 | 0 | 3 | 0 | 3 | 3 | 0 | 3 | 3 | 0 | 0 | 3 |
| **5** | **Nawanshahr** | **SL/PB/UL/01 - Bioremediation and Bio filtration** | 2 | 0 | 2 | 0 | 2 | 2 | 0 | 2 | 2 | 0 | 0 | 2 |
| | | **SL/PB/UL/03 - Institution Plantation** | 15 | 12 | 15 | 10 | 27 | 37 | 22 | 37 | 37 | 10 | 10 | 37 |
| | | **SL/PB/UL/04- Eco-Park Development** | 1 | 0 | 1 | 0 | 1 | 1 | 0 | 1 | 1 | 0 | 0 | 1 |
| **6** | **Rupnagar** | **SL/PB/UL/01 - Bioremediation and Bio filtration** | 2 | 0 | 2 | 0 | 2 | 2 | 0 | 2 | 2 | 0 | 0 | 2 |
| | | **SL/PB/UL/02 - Riverfront Development** | 0.1 | 0 | 0.1 | 0 | 0.1 | 0.1 | 0 | 0.1 | 0.1 | 0 | 0 | 0.1 |
| | | **SL/PB/UL/03 - Institution Plantation** | 25 | 12 | 25 | 10 | 37 | 47 | 22 | 47 | 47 | 10 | 10 | 47 |
| | | **SL/PB/UL/04- Eco-Park Development** | 1 | 0 | 1 | 0 | 1 | 1 | 0 | 1 | 1 | 0 | 0 | 1 |
| **7** | **SAS Nagar** | **SL/PB/UL/01 - Bioremediation and Bio filtration** | 2 | 0 | 2 | 0 | 2 | 2 | 0 | 2 | 2 | 0 | 0 | 2 |
| | | **SL/PB/UL/03 - Institution** | 10 | 10 | 10 | 10 | 20 | 30 | 20 | 30 | 30 | 10 | 10 | 30 |

| | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | **Plantation** | | | | | | | | | | | | |
| | | **SL/PB/UL/04-Eco-Park Development** | 2 | 0 | 2 | 0 | 2 | 2 | 0 | 2 | 2 | 0 | 0 | 2 |
| **Total** | | | **140.8** | **94** | **140.8** | **77** | **234.8** | **311.8** | **171** | **311.8** | **311.8** | **77** | **77** | **311.8** |

## Division, Activity and Year Wise Proposed Cost of Plantations in Urban Landscapes in Punjab

| Sr. | Division | Activity | Phase I (Area in Ha) | | | | | | | | | Phase II (Area in Ha) | | Grand Total |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | I | II | | III | | IV | V | Phase I | | VI | Phase II | |
| | | | Estb | Estb | Maint | Estb | Maint | Maint | Maint | Estb | Maint | Maint | Maint | |
| 1 | Amritsar | SL/PB/UL/01 - Bioremediation and Bio filtration | 15 | 0 | 4.5 | 0 | 3 | 2.25 | 0 | 15 | 9.75 | 0 | 0 | 24.75 |
| | | SL/PB/UL/03 - Institution Plantation | 26 | 26 | 7.8 | 26 | 13 | 16.9 | 9.1 | 78 | 46.8 | 3.9 | 3.9 | 128.7 |
| | | SL/PB/UL/04- Eco-Park Development | 75 | 0 | 22.5 | 0 | 15 | 11.25 | 0 | 75 | 48.75 | 0 | 0 | 123.75 |
| 2 | Ferozepur | SL/PB/UL/01 - Bioremediation and Bio filtration | 15 | 0 | 4.5 | 0 | 3 | 2.25 | 0 | 15 | 9.75 | 0 | 0 | 24.75 |
| | | SL/PB/UL/02 - Riverfront Development | 15 | 0 | 4.5 | 0 | 3 | 2.25 | 0 | 15 | 9.75 | 0 | 0 | 24.75 |
| | | SL/PB/UL/03 - Institution Plantation | 52 | 52 | 15.6 | 39 | 26 | 29.9 | 15.6 | 143 | 87.1 | 5.85 | 5.85 | 235.95 |
| | | SL/PB/UL/04- Eco-Park Development | 150 | 0 | 45 | 0 | 30 | 22.5 | 0 | 150 | 97.5 | 0 | 0 | 247.5 |
| 3 | Jalandhar | SL/PB/UL/01 - Bioremediation and Bio filtration | 30 | 0 | 9 | 0 | 6 | 4.5 | 0 | 30 | 19.5 | 0 | 0 | 49.5 |
| | | SL/PB/UL/03 - | 39 | 39 | 11.7 | 26 | 19.5 | 21.45 | 11.05 | 104 | 63.7 | 3.9 | 3.9 | 171.6 |

| | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | **Institution Plantation** | | | | | | | | | | | | |
| | | **SL/PB/UL/04-Eco-Park Development** | 300 | 0 | 90 | 0 | 60 | 45 | 0 | 300 | 195 | 0 | 0 | 495 |
| **4** | **Ludhiana** | **SL/PB/UL/01 - Bioremediation and Bio filtration** | 150 | 0 | 45 | 0 | 30 | 22.5 | 0 | 150 | 97.5 | 0 | 0 | 247.5 |
| | | **SL/PB/UL/02 - Riverfront Development** | 15 | 0 | 4.5 | 0 | 3 | 2.25 | 0 | 15 | 9.75 | 0 | 0 | 24.75 |
| | | **SL/PB/UL/03 - Institution Plantation** | 39 | 39 | 11.7 | 31.2 | 19.5 | 23.01 | 12.09 | 109.2 | 66.3 | 4.68 | 4.68 | 180.18 |
| | | **SL/PB/UL/04-Eco-Park Development** | 450 | 0 | 135 | 0 | 90 | 67.5 | 0 | 450 | 292.5 | 0 | 0 | 742.5 |
| **5** | **Nawanshahr** | **SL/PB/UL/01 - Bioremediation and Bio filtration** | 30 | 0 | 9 | 0 | 6 | 4.5 | 0 | 30 | 19.5 | 0 | 0 | 49.5 |
| | | **SL/PB/UL/03 - Institution Plantation** | 39 | 31.2 | 11.7 | 26 | 17.16 | 19.89 | 9.88 | 96.2 | 58.63 | 3.9 | 3.9 | 158.73 |
| | | **SL/PB/UL/04-Eco-Park Development** | 150 | 0 | 45 | 0 | 30 | 22.5 | 0 | 150 | 97.5 | 0 | 0 | 247.5 |
| **6** | **Rupnagar** | **SL/PB/UL/01 - Bioremediation and Bio filtration** | 30 | 0 | 9 | 0 | 6 | 4.5 | 0 | 30 | 19.5 | 0 | 0 | 49.5 |
| | | **SL/PB/UL/02 - Riverfront Development** | 15 | 0 | 4.5 | 0 | 3 | 2.25 | 0 | 15 | 9.75 | 0 | 0 | 24.75 |
| | | **SL/PB/UL/03 - Institution Plantation** | 65 | 31.2 | 19.5 | 26 | 22.36 | 23.79 | 9.88 | 122.2 | 75.53 | 3.9 | 3.9 | 201.63 |

| | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | **SL/PB/UL/04-Eco-Park Development** | 150 | 0 | 45 | 0 | 30 | 22.5 | 0 | 150 | 97.5 | 0 | 0 | 247.5 |
| **7** | **SAS Nagar** | **SL/PB/UL/01 - Bioremediation and Bio filtration** | 30 | 0 | 9 | 0 | 6 | 4.5 | 0 | 30 | 19.5 | 0 | 0 | 49.5 |
| | | **SL/PB/UL/03 - Institution Plantation** | 26 | 26 | 7.8 | 26 | 13 | 16.9 | 9.1 | 78 | 46.8 | 3.9 | 3.9 | 128.7 |
| | | **SL/PB/UL/04-Eco-Park Development** | 300 | 0 | 90 | 0 | 60 | 45 | 0 | 300 | 195 | 0 | 0 | 495 |
| **Total** | | | **2206** | **244.4** | **661.8** | **200.2** | **514.52** | **439.84** | **76.7** | **2650.6** | **1692.86** | **30.03** | **30.03** | **4373.49** |

## Division, Activity and Year Wise Proposed Areas of Plantations in Soil and Moisture Conservation in Punjab

| Sr. No | Division | Activity | Phase I Year Wise (Area $m^3$) | | | | | Grand Total Extent ($m^3$) |
|---|---|---|---|---|---|---|---|---|
| | | | I | II | III | IV | V | |
| 1 | Ferozepur | SL/PB/CI/01 – Brush wood Interventions | 2200 | 0 | 0 | 0 | 1000 | 3200 |
| | | SL/ PB /CI/02 – Dry Stone Activities | 0 | 0 | 2000 | 0 | 0 | 2000 |
| | | SL/ PB /CI/03 – Crate wire Activities | 0 | 2200 | 0 | 0 | 0 | 2200 |
| | | SL/ PB /CI/04 – Water Ponds | 0 | 0 | 0 | 700 | 0 | 700 |
| 2 | Jalandhar | SL/PB/CI/01 – Brush wood Interventions | 550 | 0 | 0 | 0 | 0 | 550 |
| | | SL/ PB /CI/02 – Dry Stone Activities | 0 | 1250 | 0 | 0 | 0 | 1250 |
| | | SL/ PB /CI/03 – Crate wire Activities | 0 | 0 | 1000 | 0 | 0 | 1000 |
| | | SL/ PB /CI/04 – Water Ponds | 0 | 0 | 0 | 3020 | 0 | 3020 |
| | | SL/ PB /CI/05 – Silt Detention Dam Type Activities | 0 | 0 | 0 | 0 | 440 | 440 |
| 3 | Ludhiana | SL/PB/CI/01 – Brush wood Interventions | 6200 | 1000 | 0 | 800 | 1500 | 9500 |
| | | SL/ PB /CI/02 – Dry Stone Activities | 1000 | 5000 | 1800 | 1800 | 500 | 10100 |
| | | SL/ PB /CI/03 – Crate wire Activities | 1000 | 1800 | 3400 | 0 | 0 | 6200 |
| | | SL/ PB /CI/04 – Water Ponds | 0 | 0 | 600 | 1200 | 550 | 2350 |
| | | SL/ PB /CI/05 – Silt Detention Dam Type Activities | 0 | 0 | 0 | 0 | 1000 | 1000 |
| 4 | Nawanshahr | SL/PB/CI/01 – Brush wood Interventions | 14350 | 14200 | 1300 | 1400 | 7600 | 38850 |
| | | SL/ PB /CI/02 – Dry Stone Activities | 6400 | 12600 | 5400 | 1300 | 1800 | 27500 |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | | **SL/ PB /CI/03 – Crate wire Activities** | 2200 | 3200 | 14200 | 500 | 800 | 20900 |
| | | **SL/ PB /CI/04 – Water Ponds** | 0 | 0 | 200 | 4650 | 450 | 5300 |
| | | **SL/ PB /CI/05 – Silt Detention Dam Type Activities** | 0 | 0 | 400 | 300 | 1800 | 2500 |
| **5** | **Rupnagar** | **SL/PB/CI/01 – Brush wood Interventions** | 885 | 0 | 0 | 0 | 100 | 985 |
| | | **SL/ PB /CI/02 – Dry Stone Activities** | 0 | 2100 | 1080 | 0 | 0 | 3180 |
| | | **SL/ PB /CI/03 – Crate wire Activities** | 0 | 0 | 700 | 2410 | 0 | 3110 |
| | | **SL/ PB /CI/04 – Water Ponds** | 0 | 0 | 3000 | 1460 | 2090 | 6550 |
| | | **SL/ PB /CI/05 – Silt Detention Dam Type Activities** | 0 | 320 | 0 | 0 | 500 | 820 |
| **6** | **SAS Nagar** | **SL/PB/CI/01 – Brush wood Interventions** | 1000 | 2300 | 1000 | 0 | 400 | 4700 |
| | | **SL/ PB /CI/02 – Dry Stone Activities** | 750 | 1600 | 1800 | 2100 | 0 | 6250 |
| | | **SL/ PB /CI/03 – Crate wire Activities** | 2000 | 0 | 1200 | 0 | 500 | 3700 |
| | | **SL/ PB /CI/04 – Water Ponds** | 300 | 0 | 400 | 650 | 600 | 1950 |
| | | **SL/ PB /CI/05 – Silt Detention Dam Type Activities** | 0 | 0 | 0 | 0 | 500 | 500 |
| **Total** | | | **38835** | **47570** | **39480** | **22290** | **22130** | **170305** |

## Division, Activity and Year Wise Proposed Cost of Plantations in Soil and Moisture Conservation in Punjab

| Sr. No | Division | Activity | Phase I Year Wise (Area $m^3$) | | | | | Grand Total Extent ($m^3$) |
|---|---|---|---|---|---|---|---|---|
| | | | I | II | III | IV | V | |
| 1 | Ferozepur | SL/PB/CI/01 – Brush wood Interventions | 6.60 | 0.00 | 0.00 | 0.00 | 3.00 | 9.60 |
| | | SL/ PB /CI/02 – Dry Stone Activities | 0.00 | 0.00 | 36.00 | 0.00 | 0.00 | 36.00 |
| | | SL/ PB /CI/03 – Crate wire Activities | 0.00 | 99.00 | 0.00 | 0.00 | 0.00 | 99.00 |
| | | SL/ PB /CI/04 – Water Ponds | 0.00 | 0.00 | 0.00 | 2.45 | 0.00 | 2.45 |
| 2 | Jalandhar | SL/PB/CI/01 – Brush wood Interventions | 1.65 | 0.00 | 0.00 | 0.00 | 0.00 | 1.65 |
| | | SL/ PB /CI/02 – Dry Stone Activities | 0.00 | 22.50 | 0.00 | 0.00 | 0.00 | 22.50 |
| | | SL/ PB /CI/03 – Crate wire Activities | 0.00 | 0.00 | 45.00 | 0.00 | 0.00 | 45.00 |
| | | SL/ PB /CI/04 – Water Ponds | 0.00 | 0.00 | 0.00 | 10.57 | 0.00 | 10.57 |
| | | SL/ PB /CI/05 – Silt Detention Dam Type Activities | 0.00 | 0.00 | 0.00 | 0.00 | 26.40 | 26.40 |
| 3 | Ludhiana | SL/PB/CI/01 – Brush wood Interventions | 18.60 | 3.00 | 0.00 | 2.40 | 4.50 | 28.50 |
| | | SL/ PB /CI/02 – Dry Stone Activities | 18.00 | 90.00 | 32.40 | 32.40 | 9.00 | 181.80 |
| | | SL/ PB /CI/03 – Crate wire Activities | 45.00 | 81.00 | 153.00 | 0.00 | 0.00 | 279.00 |
| | | SL/ PB /CI/04 – Water Ponds | 0.00 | 0.00 | 2.10 | 4.20 | 1.93 | 8.23 |
| | | SL/ PB /CI/05 – Silt Detention Dam Type Activities | 0.00 | 0.00 | 0.00 | 0.00 | 60.00 | 60.00 |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **4** | **Nawanshahr** | **SL/PB/CI/01 – Brush wood Interventions** | 43.05 | 42.60 | 3.90 | 4.20 | 22.80 | 116.55 |
| | | **SL/ PB /CI/02 – Dry Stone Activities** | 115.20 | 226.80 | 97.20 | 23.40 | 32.40 | 495.00 |
| | | **SL/ PB /CI/03 – Crate wire Activities** | 99.00 | 144.00 | 639.00 | 22.50 | 36.00 | 940.50 |
| | | **SL/ PB /CI/04 – Water Ponds** | 0.00 | 0.00 | 0.70 | 16.28 | 1.58 | 18.55 |
| | | **SL/ PB /CI/05 – Silt Detention Dam Type Activities** | 0.00 | 0.00 | 24.00 | 18.00 | 108.00 | 150.00 |
| **5** | **Rupnagar** | **SL/PB/CI/01 – Brush wood Interventions** | 2.66 | 0.00 | 0.00 | 0.00 | 0.30 | 2.96 |
| | | **SL/ PB /CI/02 – Dry Stone Activities** | 0.00 | 37.80 | 19.44 | 0.00 | 0.00 | 57.24 |
| | | **SL/ PB /CI/03 – Crate wire Activities** | 0.00 | 0.00 | 31.50 | 108.45 | 0.00 | 139.95 |
| | | **SL/ PB /CI/04 – Water Ponds** | 0.00 | 0.00 | 10.50 | 5.11 | 7.32 | 22.93 |
| | | **SL/ PB /CI/05 – Silt Detention Dam Type Activities** | 0.00 | 19.20 | 0.00 | 0.00 | 30.00 | 49.20 |
| **6** | **SAS Nagar** | **SL/PB/CI/01 – Brush wood Interventions** | 3.00 | 6.90 | 3.00 | 0.00 | 1.20 | 14.10 |
| | | **SL/ PB /CI/02 – Dry Stone Activities** | 13.50 | 28.80 | 32.40 | 37.80 | 0.00 | 112.50 |
| | | **SL/ PB /CI/03 – Crate wire Activities** | 90.00 | 0.00 | 54.00 | 0.00 | 22.50 | 166.50 |
| | | **SL/ PB /CI/04 – Water Ponds** | 1.05 | 0.00 | 1.40 | 2.28 | 2.10 | 6.83 |
| | | **SL/ PB /CI/05 – Silt Detention Dam Type Activities** | 0.00 | 0.00 | 0.00 | 0.00 | 30.00 | 30.00 |
| **Total** | | | **457.31** | **801.60** | **1185.54** | **290.04** | **399.03** | **3133.49** |

## Sites, Division and Year Wise Proposed Area in Riverine and Riparian Wildlife Conservation in Punjab

| Sr.No. | Sites | District | Division | I | II | III | IV | V | Phase I | | Total |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Estb | Maint | Maint | Maint | Maint | Estb | Maint | |
| 1 | Abohar WLS | Ferozepur | Wild Life Ferozepur | 25 | 25 | 25 | 25 | 25 | 25 | 25 | 25 |
| 2 | Hedon Wal Dera | Ludhina | Wildlife Phillaur | 50 | 50 | 50 | 50 | 50 | 50 | 50 | 50 |
| 3 | Jhaajjhar Bacholi WLS | Rupnagar | Wildlife Division Roopnagar | 30 | 30 | 30 | 30 | 30 | 30 | 30 | 30 |
| 4 | Ludhiana (Riverine and Riparian ) | Ludhina | wildlife Phillaur | 50 | 50 | 50 | 50 | 50 | 50 | 50 | 50 |
| 5 | Nangal WLS | Rupnagar | Wildlife Division Roopnagar | 30 | 30 | 30 | 30 | 30 | 30 | 30 | 30 |
| Total | | | | 185 | 185 | 185 | 185 | 185 | 185 | 185 | 185 |

## Sites, Division and Year Wise Proposed Cost in Riverine and Riparian Wildlife Conservation in Punjab

| Sr.No. | Sites | District | Division | I | II | III | IV | V | Phase I | | Total |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Estb | Maint | Maint | Maint | Maint | Estb | Maint | |
| 1 | Abohar WLS | Ferozepur | Wild Life Ferozepur | 80.00 | 70.00 | 47.50 | 30.00 | 22.50 | 80.00 | 170.00 | 250.00 |
| 2 | Hedon Wal Dera | Ludhina | Wildlife Phillaur | 160.00 | 140.00 | 95.00 | 60.00 | 45.00 | 160.00 | 340.00 | 500.00 |
| 3 | Jhaajjhar Bacholi WLS | Rupnagar | Wildlife Division Roopnagar | 96.00 | 84.00 | 57.00 | 36.00 | 27.00 | 96.00 | 204.00 | 300.00 |
| 4 | Ludhiana (Riverine and Riparian ) | Ludhina | wildlife Phillaur | 160.00 | 140.00 | 95.00 | 60.00 | 45.00 | 160.00 | 340.00 | 500.00 |
| 5 | Nangal WLS | Rupnagar | Wildlife Division Roopnagar | 96.00 | 84.00 | 57.00 | 36.00 | 27.00 | 96.00 | 204.00 | 300.00 |
| Total | | | | 592.00 | 518.00 | 351.50 | 222.00 | 166.50 | 592.00 | 1258.00 | 1850.00 |

## Site Wise Proposed Extent (in ha) for Wetland Management Conservation in Punjab

| Sr. No | Division | Site | Phase I: Year Wise Extent of Area (ha) | | | | | | | | | Phase I Total | | Phase II Year Wise Extent of Area (ha) | | | Grand Total (ha) Phase I and Phase II |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | I | II | | III | | IV | | V | | | | VI | VII | Total | |
| | | | Estb | Estb | Maint | Estb | Maint | Estb | Maint | Estb | Maint | Estb | Maint | Maint | Maint | Total | |
| 1 | Wildlife Division Roopnagar | Ropar Wetland Conservation Reserve | 40 | 0 | 40 | 0 | 40 | 0 | 40 | 0 | 40 | 40 | 40 | 0 | 0 | 0 | 40 |
| **Total** | | | **40** | **0** | **40** | **0** | **40** | **0** | **40** | **0** | **40** | **40** | **40** | **0** | **0** | **0** | **40** |

## Site Wise Projected Cost (Rs. in Lakhs) for Wetland Wildlife Conservation in Punjab

| Sr. No. | Division | Site | Phase I: Year Wise Cost (Rs. in Lakhs) | | | | | | | | | | | Phase II: Year Wise Cost (Rs. in Lakhs) | | | Total Cost Phase I and II (Rs in Lakh) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | I | II | | III | | IV | | V | | Total | | VI | VII | Total (Rs in Lakh) | |
| | | | Estb | Estb | Maint | Estb | Maint | Estb | Maint | Estb | Maint | Estb | Maint | Maint | Maint | | |
| 1 | Wildlife Division Roopnagar | Ropar Wetland Conservation Reserve | 112.00 | 0 | 100.00 | 0 | 64.00 | 0 | 48.00 | 0 | 36.00 | 112.00 | 248.00 | 0 | 0 | 0 | 360.00 |
| **Total** | | | **112.00** | **0** | **100.00** | **0** | **64.00** | **0** | **48.00** | **0** | **36.00** | **112.00** | **248.00** | **0** | **0** | **0** | **360.00** |

## Consent Letter on Land Availability from PCCF & HoFF, Punjab

**Government of Punjab**
**Department of Forest & Wildlife Preservation**
**O/o Principal Chief Conservator of Forests (HoFF),**
**Forest Complex, Sector 68, SAS Nagar (Mohali)**

To

Director,
HFRI, Shimla,
Himachal Pradesh.

No. SPL/2768
Dated: 11-1-2021

**Subject:** **Confirmation of availability of land as per revised Agriculture landscape.**

Reference: Meeting on 28/12/2020 under the Chairmanship of ADG(FC), MoEF&CC, GoI and E-mail of your office dated 07/01/2021

With reference to above mentioned subject, it is intimated that the sufficient land is available to take up the forestry interventions along the river scapes of Beas, and Satluj in respective forest divisions of Punjab State .

Principal Chief Conservator of Forest (HoFF)
Punjab, SAS Nagar, Mohali.

No. Dated

Copy is forwarded to the following for information and necessary action.

1. Assistant Commissioner (Forest), Ministry of Environment Forest & Cimate Change (NAEB), New Delhi.
2. Director General,Indian Council of Forestry Research &Education, P.O. New Forest, Dehradun

Principal Chief Conservator of Forest (HoFF)
Punjab, SAS Nagar, Mohali.