HIMACHAL PRADESH GOVERNMENT

FOREST DEPARTMENT

REVISED DRAFT WORKING PLAN

FOR THE FORESTS OF

RENUKAJI FOREST DIVISION

VOLUME –I

(2021-22 TO 2030-31)

BY

SHUSHIL KUMAR, HPFS & OTHERS

(Volume –I)

GLOSSARIES

(1) GLOSSARY OF LOCAL TERMS

Term	Explanation
Bajri	Gravel
Balli	A round pole having a mid diameter of 10-30 cms.
Bhediwala	A professional grazier of sheep and goats.
Chak	Demarcated private land in the Reserved, Protected, Unclassed or Mushterqa forest.
Chappar	A thatched roof hut.
Charand	Grazing land.
Chatti	A fuel wood stack normally (3'x3').
Chauki	An outpost, generally the residence of forest guards.
Chaukidaar	Watchman.
Coolie	Labourer.
Darbar	The court of the Ruler.
Dastur -Ul- Amal rates	Rates for the sale of various forest produce.
Dat	Darat.
Devi	A Hindu Goddess.
Dhar	A ridge or spur.
Devta A local Deity.	
Dochi	Tamporary field residence.
Faisla -e- Janglat	A Forest settlement report
Gaddies	Professional sheep and goat graziers.
Gairmumkin	Land under buildings, roads, paths, streams etc.
Gharat	A water mill.

Ghasnies	Grass land.
Ghat	Ford along a river.
Goj	Rot in trees.
Gorkha labour	Labour from Nepal.
Gujjar	A professional nomedic buffalo grazier.
Hadbast number	Serial number allotted to a village at the time of Revenue settlement.
Hooka	Smoking pipe.
Jagir	An estate/grant.
Jama-bandi	Record of land maintained by the Revenue Department.
Karam	A linear unit measurement equal to 57.157 inches Roughly 4 feet 9 inches /144.61 cm.
Kari	A scantling.
Katha	Extract from khair heartwood.
Kokath	General terms for miscellaneous broad leaved species of comparatively inferior quality.
Korwa	Pole used in the frame work of Chappar.
Mahkma-Janglat	Forest Department.
Makbooja	Possession.
Mali	Gardener.
Manu	Current year's shoot of Bamboo.
Misal haquiyat	Revenue document containing information regarding Customs, rights and concessions.
Mauza	A unit of revenue administration.
Nadi	A stream.
Nautor	Government waste land granted to an individual for Purpose of cultivation or habitation.

Naquabil	Land not fit for cultivation.
Nallah/Khalla	Water course.
Ogal	Hole or pit dug in the bed of a Nalla to obtain water below the surface.
Panchayat	A body of panches forming a village management committee.
Parao	Gujjar grazing /halting place.
Pattie	A section of a village.
Rewana	A licence to fell trees.
Sehada	Trijunction pillar of three mauzas.
Shamlat	Village common land.
Shamlat Deh/Taraf	Areas Which are not owned individually but owned collectively by the Entire village concerned as Pattie or Taraf.
Shimla -Mirch	Capsicum.
Sokhta	Dry fuelwood.
Takhta	Plank.
Tappar	An open Grassy area in the midst of a forest.
Taraf	A sub-division of a village.
Tehsil	A sub-division of a district.
Thach	A grassy blank.
Tibba	Hillock.
Tora	Raised edge of a cultivated field.
Wajab-ul-Araj	Revenue settlement record dealing with social customs, rights, concessions, Obligations etc.
Zamindar	A landlord or a cultivating land owner

(II) GLOSSARY OF TREES, HERBS AND SHRUBS,CLIMBERS, GRASSES,WILD ANIMALS, BIRDS, REPTILES AND FISH FOUND IN THE RENUKAJI FOREST DIVISION.

A. Tree

Botanical Name	English/Local Name
Abies pindrow	Tosh
Abies spectabilis	Tosh
Acacia catechu	Khair
Acer acuminatum	Parang
Acer oblongum	Maple
Aegle marmelos	Bel
Aesculus indica	Khanor
Albizia lebbeck	Safed Siris
Albizia odoratissima	Siris
Alnus nepalensis	Piak
Alnus nitida	Piak
Anogeissus latifolia	Chal
Azadirachta indica (= Melia indica)	Neem
Bauhinia racemosa	Kathmuli
Bauhinia Semla (=retusa)	Chakera
Bauhinia variegata	Kachnar
Betula alnoides	Bhoj pattra
Betula utilis	Bhoj pattra
Bischofiajavanica	PanialaBhillar
Boehmeria rgulosa	Shingeer
Bombax Ceiba(=*SalmaliaMalaberica*)	Semal
Bridelia retusa	Gaya, Koja
Buchanania latifolia	Chiroli
Butea monosperma	Dhak
Casearia tomentosa	Chilla
Cassia fistula	Amaltas
Cedrus deodara	Deodar
Celtis tetrandra (C. australis)	Khirk
Cinnamomum tamala	Tamal pattar
Cocculus laurifolius	Tilari/ Tillara

Cordia dichotoma	Lasoora
Cordia vestita	Kum
Cornus capitata (= Benthamidia capitata)	Thamion
Cornus macrophylla	Khaksha
Corylus jaquemontii (= C. colurna)	Thangi
Cupressus torulosa	Devidiar
Dalbergia sissoo	Shisham
Desmodiumoojeinense (= *Ougeiniaoojeinense/ O. dalbergioides)*	Sandan
Diospyros cordifolia	Bis tendu
Diospyros embryopteris	Kala tendu
Diospyros montana	kath Khirki/ Dhummi
Diospyros tomentosa	Tendu
Ehretiaacuminata (E. serrata)	Pandoyan/ Punon
Ehretia laevis	Chamror/ Chamrada
Elaeodendron glaucum	Janga
Erythrina suberosa	Dhaul
Euonymus pendulus	Bhambeli
Falconeria insignis (= *Sapiuminsigni*)	Balodhar
Ficus auriculata (F. roxburghii)	Tirmal/ Chimbul
Ficusbenghalensis	*Barota*
Ficushispida	Khuna/ Girmal
Ficus neriifolia(= F. nemoralis)	Dudhla/ Anzir
Ficus palmata	Fagura
Ficus racemose (F. glomerata)	Gollar
Ficus religiosa	Pipal
Ficusrumphii	Khabarh
Ficussemicordata (= F.cunia)	Khanno
Ficus virens	Pilkhan
Flacourtia indica	Kandai
Fraxinus floribunda	Ash/ Anhu
Gardenia turgida	Thanela
Garuga pinnata	Garuga
Grewia asiatica	Dhamman/ Falsa
Grewia optiva (= G. oppositifolia)	Beul
Grewia elastica	Dhamman

Haldenia cordifolia(= *Adina cordifolia*)	Haldu
Holoptelea integrifolia	Papri
Ilex dipyrena	Kanderu
Juglans regia	Akhrot
Kydiacalycina	Pula
Lannea coromandelica (= L.grandis)	Jhingan
Litseaglutinosa(L. chinensis)	Chandna
Litseamonopetala	Meda Lakri
Lyonia ovalifolia (= Pieris ovalifolia)	Ailan
Lyonia acidissima	Beli
Machilusduthiei	Bhadrol
Machilusodoratissima	Bhadrol
Mallotusphilippenensis	Kamela/ Raini
Mangifera indica	Aam
Melia azadirach	Darek
Mitragyanaparvifolia	Phaldu
Moringa oleifera	Sanjna
Morus alba	Sahtoot
Morus serrata	Toot
Myrica esculenta (= M. nagi)	Kaphal
Naringi crenulate (*Limoniaacidissima*)	Beli/ Bandras
Nyctanthesarbortristis	Har-singar
Olea paniculata (= O. glandulifera)	Ghenu
Olea ferrugenea (= O. cuspidate)	Kau
Oroxylum indicum	Tat palanga
Phoebe lanceolata	
Phoenix humilis	Khajoor
Phyllanthus emblica (= *Emblica officinalis*)	Amla
Piceasmithiana	Rai (Spruce)
Pinus wallichiana	Kail
Pinus roxburghii	Chil
Pistacia integerrima	Kakran
Populus ciliata	Chaloon (Poplar)
Premna latifolia	Bakar
Prunus armeniaca	Khurmani (Apricot)

Prunus communis	Aloocha
Prunus cornuta	Birdcherry
Prunus persica	Aru *(*Peach*)*
Punica granatum	Daru/ Daren
Pyrus pashia	Kainth
Quercus floribunda (= Q.dilatate/ himalayana)	Mohru
Quercus glauca	Bani
Quercus oblongata (= Q. leucotrichophora / Q. incana)	Ban
Quercus semecarpifolia	Kharsu
Rhemnustriqueter	Galeju
Rhododendron arboretum	Buras
Robinia pseudoacacia	Robinia
Salix alba	Badah*(*Willow*)*
Salix tetrasperma	Salix*(*willow*)*
Sapindusmukorossi	Ritha *(*Soapnut*)*
Schleicheraoleosa	Kusum
Shorearobusta	Sal
Spondias pinnata	Ambara
Staphyleaemodi	Nagdadu
Sterculia villosa	Godudala
Syzygiumcumini	Jaman
Taxtusbaccata	Barhmi
Terminalia belerica	Bahera
Terminalia chebula	Harar
Terminalia elliptica(= T. tomentosa/ T. alata)	Sain
Tonna ciliata (= Cedrela Toona)	Toon
Tonna serrata (= Cedrela serrata)	Dauri
Trewianudiflora	Gamhar
Ulmus wallichiana	Plauch
Wrightia arborea	Phlaro
Xylosomalongifolium	Kumbh
Zizyphus jujuba	Kath ber

B. SHRUBS

Adhatodazeylanica(= *A. vasica/ Justicia adhatoda*)	Basauti
Agave americana	RamBan
Berberis asiatica	Chatraon
Berberis chitria	Kasmal
Berberis lycium	Kasmal
Carissa opaca (C. spinariun)	Karaunda
Colebrookiaopppsitifolia	Bindu/ Bambherhi
Coriarianapalensis	Gangeru
Cotinus coggygria(= *Rhus cotinus*)	Tung
Cotoneaster bacillaris	Reuns
Cotoneaster microphylla	Bhedda
Crotalaria albida	Saun
Daphne papyracea(= D. cannabina)	Niggs
Debregeasiasalicifolia (= D. hypoleuca)	Siaru
Desmodiumelegens (= D. tiliaefilium)	Safeda Kathi
Deutiziacorymbosa	Batti
Dodonea viscosa	Mehndu
Ephedra gerardiana	Ain
Euphorbia royleana	Danda Thor
Grewia sapida	Bistu
Helictrusisora	MarodPhali
Holarrhenaantidysentrica	
Hypericum cernuum	Phiunli
Indigofera gerardiana	Kathi
Indigofera hirsuta	Kathi
Indigofera pulchella	Kathi
Isodonrugosus (= Plectranthusrugosus/ Rhabdosia rugosa)	Kathal
Jasminum humile	Ban Chameli
Jasminum officinale	Ban chameli
Juniperus indica	Dhup
Lantana camara	Panjphuli
Leucomeris spectabilis	
Lonicera angustifolia	Chalu
Lonicera hispida	Taknol
Lonicera quinquelocularis	

Mahonia napalensis	Kasmal
Meriandrastrobilifera	
Murrayakoenigii	Gandhelu
Murrayapaniculata	Ban mirchi
Myrsineafricana	Banwan
Osyris arborea	Dumni ka Ped
Prinsepia utilis	Bhekhra
Pseudocaryopterisbiclor (= Caryopteris odorata)	Dinkhuri
Pueraria tuberosa	Sural
Rhododendron anthopogon (= R. hypenenthus)	Talish patra
Rhododendron campanulatum	Sarangarh
Rosa sericea	Ban gulab
Rubus ellipticus	Hinsalu
Rubus niveus	
Salix elegans	Dwarf willow
Sarcococcasaligna	Diun
Schefflera venulosa	
Skimmiaanquetilia (= S. laureola)	Gurl patta
Solanum indicum	Ban tobacco
Solanum verbascifolium	Ban tobacco
Viburnum cotinifolium	Talanj
Viburnum grandiflorum (= V. foetens)	Talanj
Viburnum nervosum	Talanj
Vitex negundu	Banaa
Woodfordiafruticosa	Dhau
Zanthoxylum alatum	Timber
Zizyphusnummularia	Kath ber
Wickstroemiacanescens	

C. CLIMBERS

Acacia pinnata	*Agla*
Caesalpinia bonduc	*Karanj*
Caesalpinia sepiaria	*Alai*
Clematis buchananiana	*Garol*

Clematis montana	*Garol, Mauniebali*
Combretum decandrum	*Ruel*
Cuscutareflexa	*Saragbali*
Dendrophthoe falcata	*Baanda*
Dioscoreabulbifera	
Dioscoreadeltoidea	*KuralmMithiari*
Ficus hederacea (= F. scandens)	*Makhota*
Ficus sarmentosa (= F. foveolata)	*Makhota*
Hedera helix	*Kural, Mithiari*
Hiptagebenghalensis	
Jasminum arborescens	*Chameli*
Jasminum humile	*Pili chameli*
Jasminum multiflorum	*Chameli*
Jasminum officinale	*Chameli*
Phaneravahlii (= Bauhinia vahlii)	*Taur*
Poranapaniculata	*Safed bel*
Rosa brunonii (= R. moschata)	*Bal Gulab*
Rubia cordifolia	*Manjit*
Smilax aspera	*Ushwa*
Smilax parvifolia	*Ushwa*
Smilax vaginata	
Vallarissolanacea	
Ventilagocaliculata	
Vitis parvifolia	*Pani bel*

D. HERBS

Aconitum heterophyllum	Patis
Acorus calamus	Vacha
Ainsliaea aptera	Aerons rod
Anemone obtusiloba	Ageli
Artemisia vulgaris	Charmar (Khardar)
Arisaema wallichianam	Cobra plant
Boenninghauseniaalbiflora	Pissumar

Cannabis sativa	Bhang
Cassia tora	Panwar
Chenopodium album	Bathu
Crotalaria albida	Saun
Brugmansiasuaveolens (= Datura suaveolens)	Dhatura
Datura metel	Dhatura
Delphinium denudatum	Main (Larkspur)
Elsholtziapolysachya	Potha
Flemingiachapper	Saipan
Fragaria indica	
Galium acutum	
Geranium wallichianum	
Gerbera lanuginosa	Kupheru
Geradiniadiversifolia (= G. heterophylla)	Ban Nimbu
Spermadictyonsuveolens (= Hamiltoniasuaveloens)	Paderi
Hemiphragmahetrophyllum	
Iris nepalensis	
Mentha arvensis	Podina
Micromeriabiflora	
Parthenium hysterophorus	Congress grass
Pogostemonbenghalensis	Kala Bansa
Podophyllmhexandrum	Ban Kakri
Polygonatumverticillatum	Salem Mishri
Potentilla nepalensis	
Potentilla argyrophylla	
Ranunculus diffusus	
Rumex nepalensis	Jangli Palak
Salvia glutinosa	Makhir
Salvia moorcrofitiana	Thuth
Bergenia ciliata (= Saxifraga ligulata)	Pathar tor
Senecio spp.	
Strobilanthesalatum	
Thalictrum foliolosum	Machhar mar
Thymus serphyllum	Ban ajwain
Urtica dioica	Bichhubuti

Valeriana wallichii	Swak
Verbascum thapsus	Gidar tobacco
Viola canescens	Banksha
Viola pilosa (= V. serpens)	Banksha
Wolfeniaamherstiana	

D. GRASSES

Arundo donax	Nal, Nara
Bambusabambos (= B. arundinacea)	Kanta bans
Bothriocloa	
Bromus spp.	
Chrysopogonmontanus	Dhalu
Cymbopogon martinii	Makora, Mirchagandh
Cynodondactylon	Dub
Dendrocalamusstrictus	Bans
Dicanthiumannulatum	
Drepanostachyumfalcatum (= Arundinaria falcata)	
Eulaliopsisbinata	Bhabar
Festuca pratense	
Heteropogoncontortus	Lamb
Phalaris tuberosa	
Saccharum munja	Munj
Thamnocalamusspathiflorus (= Arundinaria spathiflora)	Nirgal

E. WILD ANIMALS

Local Name	English Name	Scientific Name
(a) <u>GAME ANIMALS</u>		
CARNIVORA	**BEAR GROUP**	
Bhalloo	Himalayan black bear	*Selenarctos thibetanus*
Lomri	Red fox	*Vulpes montana*
Shail	Procupine	*Hystrix indica*

HERBIVORA	**GOATS** (**Antelopes**)	
Ghoral	Himalayan goat	*Nemorrhaedus goral*
DEER GROUP		
Samber	Samber	*Cervus unicolor*
Kakar	Barking dear	*Muntiacusmuntjak*
Kastura	Musk dear	*Moschus moschiferus*
PIGS		
Jungle Suar	Indian Wild boar	*Suscrofacristatus*
OTHERS		
Enkoryal	Flying squirrel	*Petauristaalbiventer*
Khargos	Common hare	*Lepus nigricollis*
(b) NON – GAME ANIMALS		
Bander	Monkey	*Macacomalatta*
Chamgadar	Bat	*Barbastellabarbasetellus*
Chamgadar	Common yellow bat	*Scotophillus*
Gidar	Jackal	*Canis aureus*
Gilhari	Five stripped/ Palm squirrel	*Funambuluspennantii*
Jungle billi	Jangle cat	*Felis chaus*
Langoor	Common langoor	*Presbytis entellus*
Chuha	Himalayan warmot	*Marmota baback*
	Common house rat	
Newla	Common mongoose	*Herpestesedwardsii*

F. BIRBS

(a) GAME BIRDS

PHEASENT AND FOWLS GROUP

Cheer, Cher	Cheer pheasant	*Catreuswallichii*
Kaleej	White crested/ Kaleej	*Lophuraleucomelana*
Lal murga	Red jungle fowl	*Gallus gallus*
Monal	Impeyan pheasant	*Lophophoprusimpejanus*

PARTRIDGES AND QUAILS GROUPS

Kala titar	The black partridge	*Francolinusfrancolinus*
Peora	Hill partridge	*Arborophilafrancolinus*

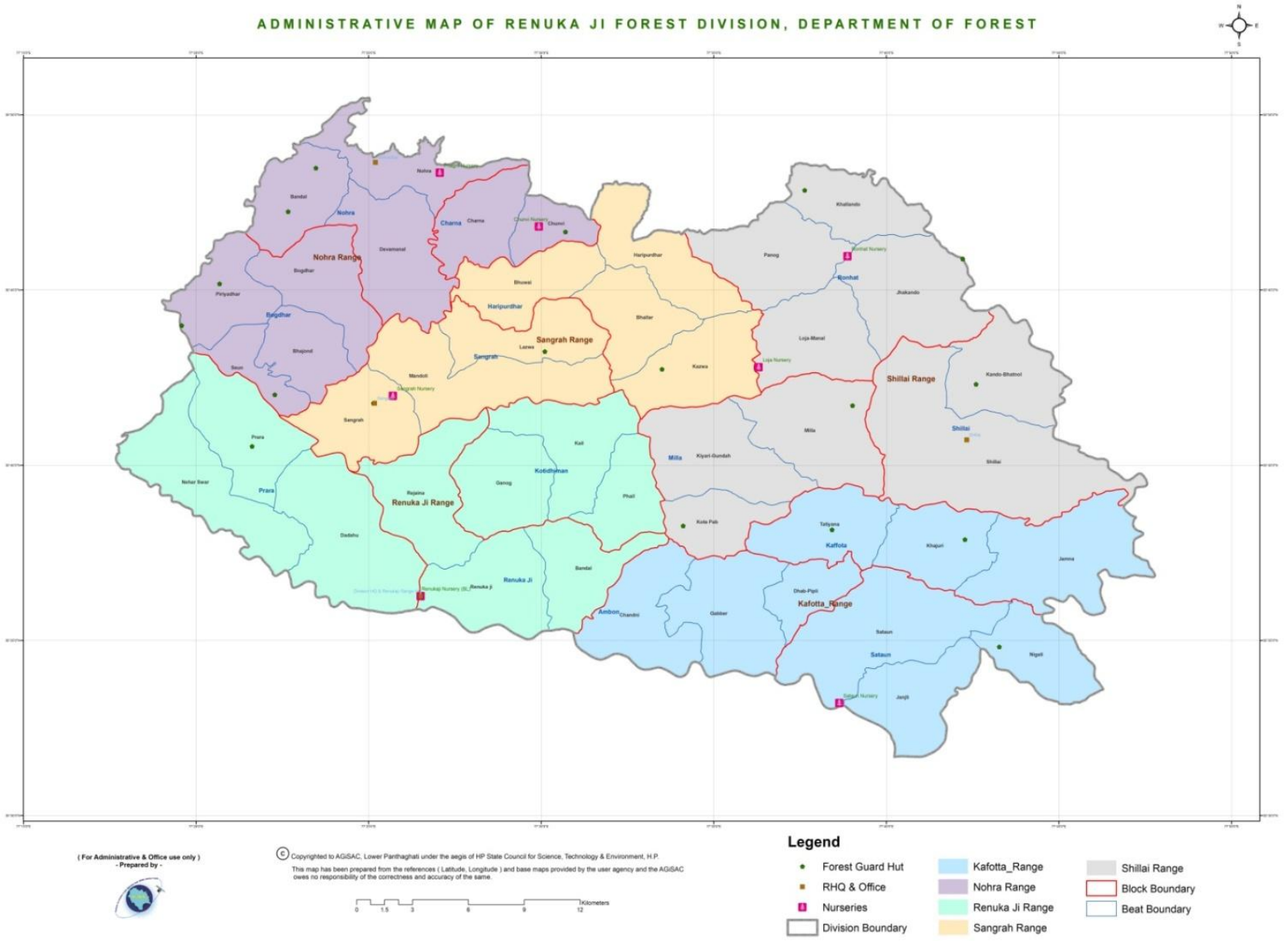
Chakor	The chakor partridge	*Alectorisgraeca*
Koor monal	The snow partridge	*Lerwalerwa*
	PIGEON AND DOVE GROUP	
Harial	The wedge tailed/ Green Pigeon	*Treron sphenuraj*
Malyo	The blue rock pigeon	*Columba livia*
Ghugi	The spotted dove	*Streptopeliachineusia*
OTHERS		
Sham kurka	The wood cock	*Scolopaxrusticola*
(c) NON GAME BIRDS		
Gidh	The Himalayan griffen vulture	*Gyps himalayansis*
Kauva	Crow	*Corvus macrophynchos*
Ullu	Owl	*Strixaluconivicola*
Cuckoo	Cuckoo	*Cuclusvariux*
Bulbul	White checked bulbul	*Pyenonotusleucogenys*
Sparrow	The house sparrow	*Passer domesticus*
Tota	Parakeet	*Psittaculahimalayans*
Kath phora	Wood packer	*Picussqauamatus*

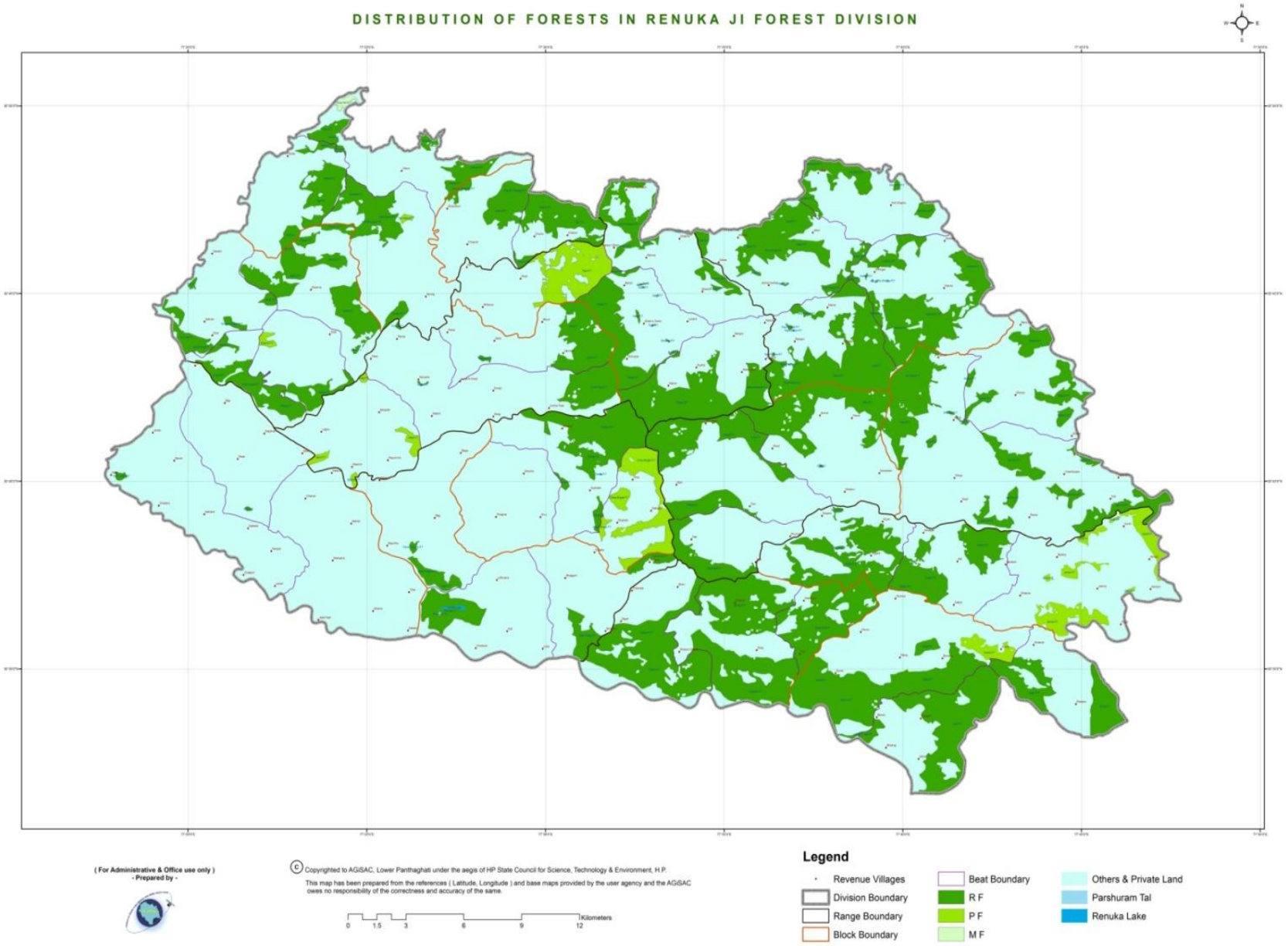
G. REPITILES

SNAKES		
Saap	The Himalayan pit viper	*Ancistrodonhimalayanus*
Karait	The common Indian karait	*Bungarus caeruleus*
Kharpa	The Indian cobra	*Naja naja*
LIZARDS		
Gobilda	The common Indianmoniter lizard	*Varanus monitor*
Girgit	---do---	*Colotasvessicoloen*

H. FISH

Mahasheer	Fish	*Torputitora*
Baranguli	Fish	*Alliacoila*


ADMINISTRATIVE MAP OF RENUKA JI FOREST DIVISION, DEPARTMENT OF FOREST
Nohra Range
Sangrah Range
Renuka Ji Range
Shillai Range
Kafotta_Range
Legend
Forest Guard Hut
RHQ & Office
Nurseries
Division Boundary
Kafotta_Range
Nohra Range
Renuka Ji Range
Sangrah Range
Shillai Range
Block Boundary
Beat Boundary
(For Administrative & Office use only)
- Prepared by -
Copyrighted to AGiSAC, Lower Panthaghati under the aegis of HP State Council for Science, Technology & Environment, H.P.
This map has been prepared from the references (Latitude, Longitude) and base maps provided by the user agency and the AGiSAC owes no responsibility of the correctness and accuracy of the same.
Kilometers


DISTRIBUTION OF FORESTS IN RENUKA JI FOREST DIVISION
(For Administrative & Office use only)
- Prepared by -
Copyrighted to AGiSAC, Lower Panthaghati under the aegis of HP State Council for Science, Technology & Environment, H.P.
This map has been prepared from the references (Latitude, Longitude) and base maps provided by the user agency and the AGiSAC owes no responsibility of the correctness and accuracy of the same.
0 1.5 3 6 9 12 Kilometers
Legend
Revenue Villages
Division Boundary
Range Boundary
Block Boundary
Beat Boundary
R F
P F
M F
Others & Private Land
Parshuram Tal
Renuka Lake

Chapter- I
The track dealt with

1.1 Name and Situation

1.1.1 Sri Renuka Ji Forest Division was created by carving out areas from the then Rajgarh and Nahan Forest Divisions vide H.P. Government notification No. 1-21/69-SF (Est) dated 31 August 1978/1.9.1978. The division was further re-organized many times afterwards due to creation/abolition of Soil Conservation Department, Social Forestry Wing etc. resulting in bifurcation/transfer of Bhagani Range, creation of Kaffota Range, transfer of Nohra Range from Rajgarh division to this division, creation of wildlife division etc. The originally notified area of 30834 ha., thus remained changing many times. The areas of Bhagani Range forests also had undergone changes due to replanimetering done during Chauhan's plan. However, the areas of all the forests inherited by the present Renuka Ji division form the parent Rajgarh and Nahan Divisions totals to 27365.75 ha. This forest division was managed by the working plans of Shri. O.P. Sharma (From 1976-77 to 1990-91) and Shri B.S.Chauhan (from 1982-83 to 1991-92) for Rajgarh and Nahan forest Divisions respectively.Out of the total forest area of 27365.75 ha; 21337.82 ha.was under O.P.Sharma's Plan and 6027.93 ha.under Chauhan's Plan. The area falls in Sangrah (Renuka Ji), Shillai and parts of Nahan and Paonta Sahib tehsils of District Sirmour.

1.1.2 The Sri RenukaJiForest Division lies between 77°17'34" and 77°47'38" E longitudes and 30°52'16" and 30°31'11" N latitudes. It is bounded on the North by Chopal and Rajgarh Forest Divisions; on the East by Chakrata Forest Division of Uttrakhand; on South by Nahan Forest Division and on the West by Paonta Sahib Forest Division. The geographical area of the division is 1018 sq. km. and forest area is273.65 sq.km. Two wild life sanctuaries (Renuka ji and Churdhar) which earlier formed the part of Rajgarh Working Plan have been excluded because wild life areas are being managed separately by the wildlife Wing and the works are carried out as per plans prepared by them.

1.1.3 There are five ranges in Renuka ji Division namely Sri RenukaJi,Sangrah, Nohra, Shillai and Kaffota. All Range headquarters are connected by road, although the general condition of the roads is not so good and frequent blockades during monsoon and winter makes communication poor. The polymeric table for the division is attached.

1.2 Configuration of the Ground:

1.2.1 The entire tract is mountainous and varies in elevation from 620 M amsl to 3647 M amsl. The slopes are generally steep to precipitous with deep khalas and springs.

1.2.2 Chur peak (elevation 3647 m) forms the focal point from which most hill ranges spread out. Main hill range is Aini Dhar which runs to the south of Chur peak and forms the boundary between Rajgarh and Chopal Forest Divisions. The dhar near Talangana village split into 'Kufta'dhar and 'Kangot'dhar. Kufta dhar is also known as Haripur dharuptoHaripurforest where it again branches off into Langra dhar and DungiBhagani Dhar. Langra dhar ends into Sainj river whereas DungiBhaganidhar runs to the south of Haripur and branches off into Pilani and Bhaganidhar. Pilani dhar beyond Khatna runs to the east and is known as Gaunidhar. This dhar from Baki Lani at an elevation of 2548 m. again splits into Kufardhar which ends in Bhangalnadi and Shillaidhar which runs into Tons river. Another important branch of Dungi Bhagni dhar is DawalPabdhar which starts from Pilani dhar and runs to the south and meets Giri river. Kanogdhar runs south-west and terminates at Nait ka Khala. The highest point in Renuka ji is 3647 m. at Chur Peak.

1.2.3 Renuka Ji lake, having a perimeter of 3.660 km.,is the only natural wetland. It gains importance as it figures in the ten important wetlands in India identified by Wetland Society of India. It is pilgrimage centre and attracts lot of pilgrims round the year especially during the month of November when Renuka Ji Fair is held. Besides pilgrimage, the scenic beauty and landscape also attracts a lot of tourists.

1.2.4 The entire region of Sri Renuka Forest Division falls within the catchments of Giri, Sainj and Tons rivers. The Palar Khad and Nait ka Khalt are two important Khalas which drains into Giri at Sieun and Khairi respectively.

1.3 Geology, Rock and soil: -

1.3.1 Geology &Rock: - Physiologically the tract forms the part of sub-Himalayan zone and Lesser Himalayas. The sub-Himalayan zone extends to an altitude of 900 m.whereas the Lesser Himalayan zone varies in altitude from 900m. to 2900m. The tract comprises of rocks ranging from Pre-Cambrian to Recent. The major rock formations are given below:

i) Jutogh formations are exposed around Chur Peak in Nohra and Sangrah ranges. Starting from Sangrah in the ease it extends to Nohra and then to Rajgarh Forest Division. The formation consists of carbonaceous slates, phyllitic schists with bands of carbonaceous lime stone. It supports deep micaceous clayey loam soils which are fertile and support dense Oak,Fir,Spruce and Deodar forests.

ii) Chur Granite consists of coarse grained to Prophyritic and gnetiferous granite and gneiss. It is exposed along the Chur in Nohra Range. Soil resulting from granite terrain is clays loam, shallow to moderately deep. The formation supports Oak,Fir-Spruce Forests and Alpine pastures.

iii) Shimla group rocks are exposed in North and N-W of this Division along Giri and Tons River. Soil from this rock is generally clayey to clayey loam. This formation supports Chil forests.

iv) Blaini series occur ad thin lenticular outcrops and comprises of carbonaceous shale, slate, silt, stone, purpled dolomitic limestone and intra bedded red shales. It is exposed in pockets which can be seen above Dadahu. Soil obtained is clayey loam. These support Deodar, Kail and Oak forests.

V) Infra Krol consist of shaly slates with thin carbonaceous quartzite bands and is exposed to south of BhangalKhad,Soil formed is clayey loam with mainly chil crop.

1.3.2 Soil:The profiles are well developed in higher location under dense forests. Lower down these suffer from erosion. Soil is clayey loam, sandy clayey loam and clay. On ridges spur and precipitous slopes, the soil is shallow. It is moderately deep in gentler slopes.

1.4 Climate:

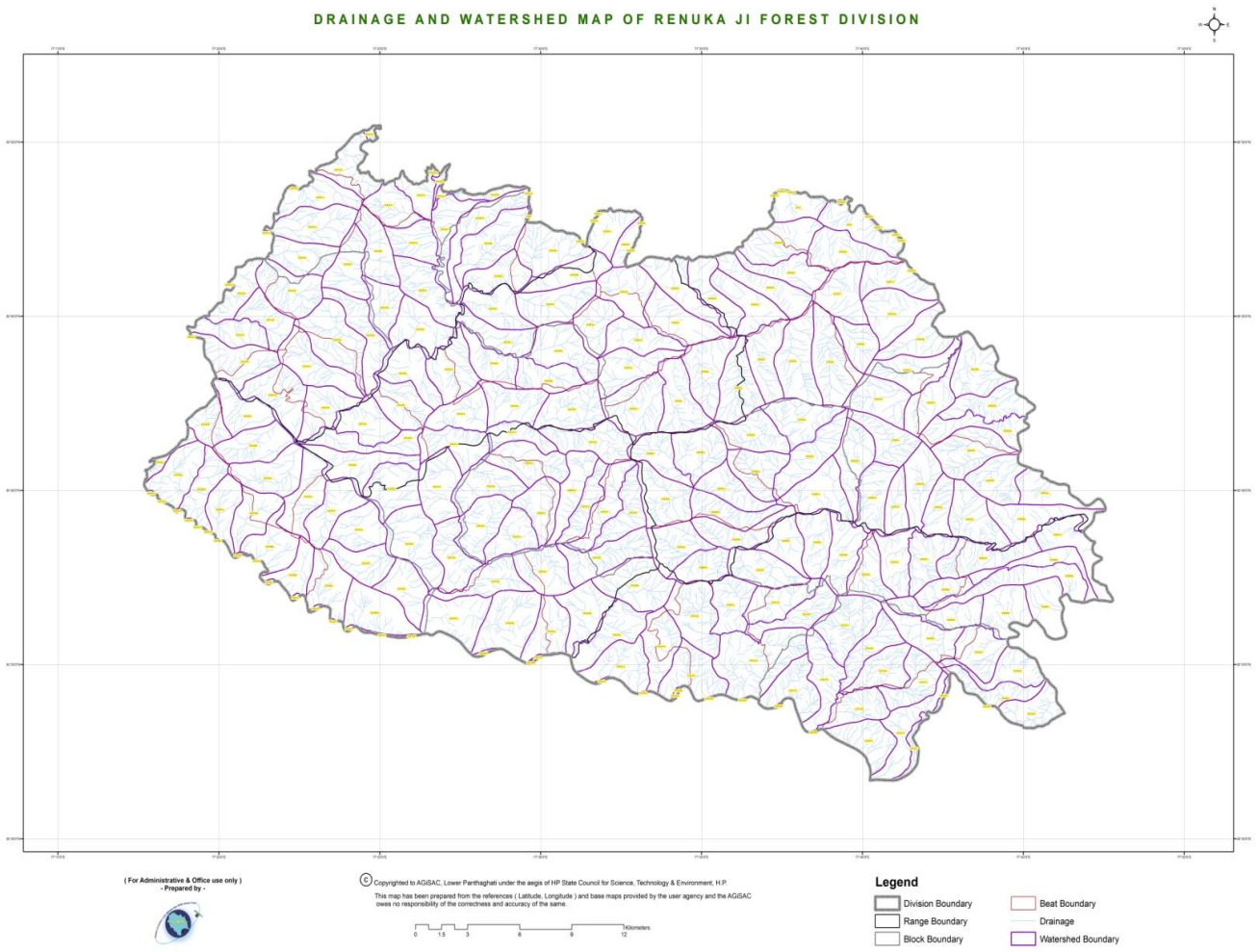
1.4.1. The tract lying in sub-tropical zone have hot summers (when the temperature rises to 40°C) and cold winters (when temperature may reach below 0°c).The tract generally lies up to 1500m elevation. The tract above 1500 m. experiences temperate climatic conditions and severe winter. Frost is common over most of the area from November to February.

1.4.2 Rainfall**:**

The area receives bulk of its annual precipitation from the South east monsoons. These generally begin by end of June and last till mid September. Winter rains, though irregular, seldom fail altogether and last form December to February. March to May and October to November are generally dry months. Higher reaches experience precipitation in the form of snow. Snow may range as an average from 0.5 to 1m.

1.5 Water Supply:

The main rivers are Giri and Tons. These are perennial rivers though the flow diminishes considerably during the dry months. The principal tributaries are Bhangal,Palar and Nait-Ka–Khala. Flash floods are common in these streams. The rapid depletion of forests from these fragile ecological formations, and heavy incidence of grazing are the main cause of water scarcity, flash floods and heavy erosion.



1.6 Distribution and Area:

1.6.1 The gross geographical area of this division is 1018 sq.km. The forest occupies 273.65 sq.km.(26.88% of gross area of 1018 sq.km.).The details are as under (sq.km.).

a) Reserved forests	244.64
b) Protected Forests	28.43
c) Mushterqua forests	0.58
Total	273.65

Table No. 1.1: Forest Area of Renuka Ji Forest Division.

1.6.2 Some *Shamlats* were handed over to Forest Deptt. during 1986-87. However, no legal process has been adopted for handing over these *shamlats* to the Forest Deptt. These shamlats were again handed over back to the owners by Government of Himachal Pradesh in 2001 vide "The Himachal Pradesh Village Commonlands vesting and utilization (Amendment) Act,2001.

1.6.3 **The range-wise distribution of forest area is as under (ha):**

Name of Range	Reserved Forests	Protected Forests	Mushterqua Forest	Total
Nohra	3760.95	221.00	58.50	4040.45
Sangrah	3459.65	807.95	--	4267.60
Renuka Ji	1271.70	843.85	--	2115.55
Shillai	7675.95	156.00	--	7831.95
Kaffota	8295.72	814.48	--	9110.20
Total:	24463.97	2843.28	--	27365.75

Table No. 1.2.: Range wise distribution of of Forest Areas in Renuka Ji Forest Division.

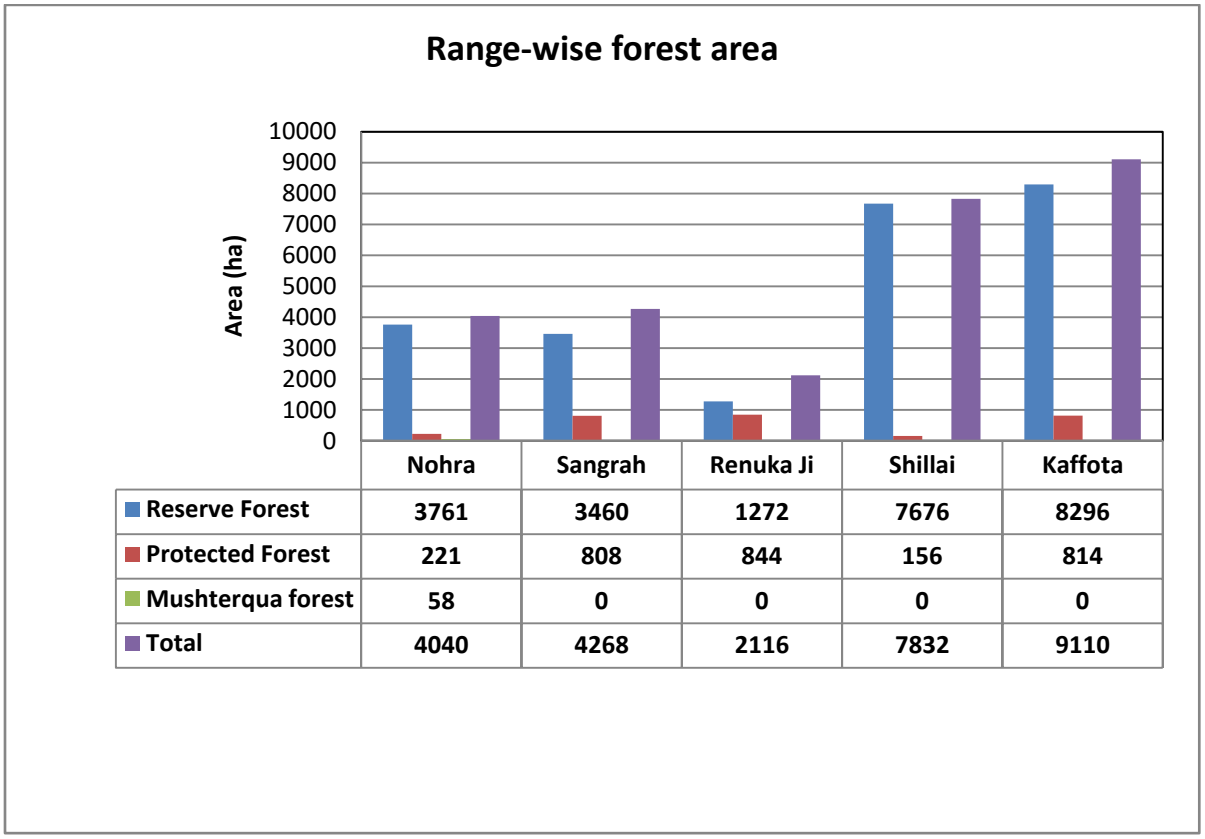
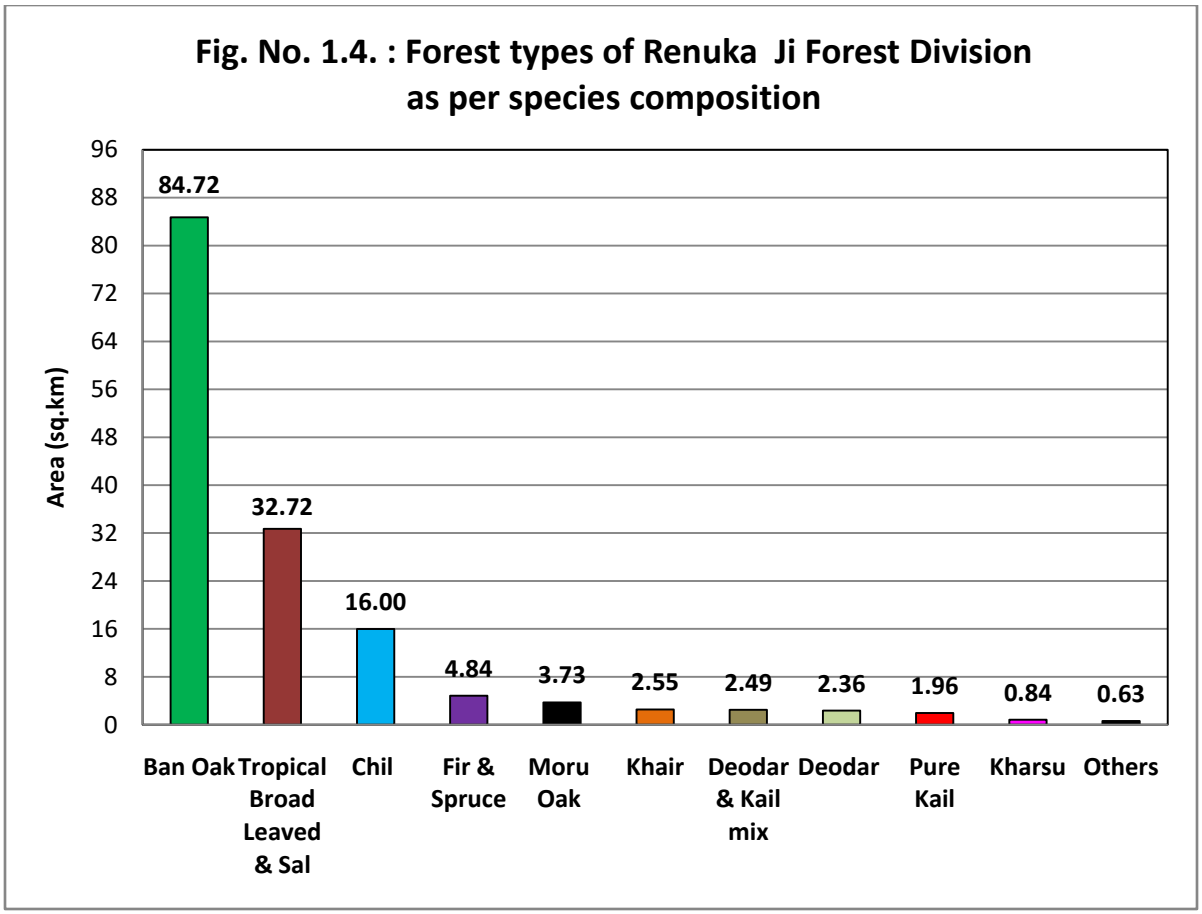


Fig. No. 1.3: Distribution of Forest Areas.



1.6.4 The names of the forests remain same as given in the Notification of Reserved, Protected and Mushterqua forests. The system of nomenclature has been adopted as per O.P.Sharma's Working Plan which was designated as under:

(R) R.15 Bandal means Reserved ForestBandal, Number 15 of Renuka Tehsil. The letter in parenthesis ( ) stands for tehsil (R) stands for Renuka Tehsil; R for Reserved forests. Similarly (R) P6 Mashur means protected forestMashur. Number 6 of Renuka Tehsil. Thus (R) stands for Renuka tehsil and (P) for Protected forest. (Pt) is used for Paonta tehsil and (S) for Shillai Tehsil. The numbers have been allotted in a numerical order of forests. In this plan, however, the numbering of sub- compartments has been given numerical values instead of alphabetical order. Precisely speaking, the sub compartments have been converted into compartments. The new old numbers vis-à-vis new ones are given in the relevant section of this working Plan.

1.6.5 **The details of areas transferred under the Forest Conservation Act,1980 are as under:-**

Detail of FCA Cases inRenuka ji Forest Division.

Sr.No.	Name of project	Name of Range	Area Diverted	Final approval No.& date	Year
1	Petrol Pump at Sataun in favour of IOC Ltd. Ft.div Renuka, Distt Sirmaur.	Kaffota	0.112	F.9-233/95-ROC dated 15.03.1996	1996
2	Constrution of Thian Bag Gahal road	Sangrah	1.2	F.No.9-560/98-ROC/1540 dated 22.07.99	1999
3	Construction of Bechar-Ka-Bagh to Bharayan Road	Renuka Ji	4.47	F.No.9-792/99-ROC/1488 dated 15.09.2001	2001
4	Constrution of SuinMegwa Road	Renuka Ji	0.386	23.07.2002	2002
5	Construction of 3MW Chandni SHEP.Renuka	Kaffota	3.9685	F.9-1292/2001 ROC dated 31.12.2004	2004
6	Construction of 3 MW Mini Hydro Electric Project Manal in Renuka Division	Kaffota	3.691	F.9-1201/01-ROC/1429 dated 19.05.2004	2004
7	Construction of 3MW Pallar Hydro Electric Project	Sangrah	0.288	F.9-HPB 2333/2004-CHA/1457 dated 23.03.2004	2004
8	Mining of Lime Stones of Sant Ram village Bhawarna,Renuka	Renuka Ji	1.5	F.9-HPB368/1997-CHA/3464 dated 12.07.2005	2005
9	M/S Ahuja Plastics Ltd.	Renuka Ji	2	F.No.9-1526/2002-ROC/509 dated 05.03.2007.	2007
10	Construction of Sataun-Kando-Kotga road	Kaffota	1.867	F.No.9-HPB189/2006-CHA/3706 dated 01.05.2008	2008
11	Constructionof Khala- Kiar to BandalSurakh road Kms. 0/00 to 14/475	Kaffota	0.493	F.No. 9-HPB 154/2010-CHA/3690 dated 15.09.2010	2010
12	Constrution of link road from Sunderghat -Aart road	Sangrah	0.246	F.No.9-HPB2213/2004-CHA/866 dated 15.02.2010	2010
13	Construction of 33KV Transmission line from 5MW Sainj Hydro Electric Project upto 33/11KV HPSEB	Shillai	0.9997	F.9-HPC 247/2010-CHA/2408 dated 09.07.2010	2010
14	Construction of 4.50 MW Palor-11 Small Hydro electric Project	Sangrah	3.29	F.9-HPB 1217/2006-CHA/3464 dated 21.04.2011	2011
15	Construction of Weigh Bridge along with facilities of Check Post at Mauza Barwas	Kaffota	0.31	F.No.9-HPB217/2013-CHA dated 01.08.2013	2013
16	Construction of Link Road Manal to Korga	Kaffota	0.792	F.t.48-3470/2016 dated 02.12.2020	2020

17	Rehabilitation and upgrading to 2- lane/2-lane with paved shoulderconfigurationand strengthening from km 0/00(Paonta Sahib) to km97/00 (Guma) of NH-72B (New No. 707) in the state of HP. (Package No. SP/C/5-World Bank Aided Project). (Sataun 17/320 to	Kaffota&Shillai	28.449	F.No.8B/HP/06/23/2020FC/1436 dated 30.09.2020.	2020
	Total:		**54.0622**		

Table No. 1.5: FCA Cases in Renuka Ji Forest Division.

Detail of FRA Cases in Renuka ji Forest Division.

Sr.No.	Name of project	Name of Range	Area Diverted	Date of approval
1	Motorable Road From Chiyan To piplat .	Kaffota	0.66	17/05/2017
2	Link Road Khujuri to Patna Indoli Road	Kaffota	0.84	29/08/2017
3	Link Road Harizan Basti to Aabda.	Kaffota	0.952	27/12/2018
4	Link Road Kuffer to koli Bag	Sangrah	0.96	25/10/2018
5	Link Road Lani to Khalando	Shillai	0.174	04/02/2019
6	Link Road Anra to Kumlah	Kaffota	0.288	20/04/2021
		Total	**3.874**	

Table No. 1.6: Detail of FRA Cases in Renuka Ji Forest Division.

1.7 State of Boundaries: -

1.7.1 After the promulgation of Ex-Sirmaur Darbar notification of Ist Phalgun 1957 (1900 AD) vide which the State-owned forests were declared as Protected forests under section 28 of the Indian Forest Act, the Settlement Maps were prepared. These maps were correct only where they adjoined cultivated fields and private forests. The Government forests were roughly sketched on these maps. The position of the boundaries of the Government forests is, therefore, far from satisfactory.

In view of unsatisfactory position, the demarcation of the Reserved and Protected Forest was initiated in the first Five Year Plan beginning from 1953-54.

1.7.2 The observations made by previous WPOs have not been met and the maintenance of boundary pillars has been poor with the result that most of the boundary pillars erected during the earlier demarcation are still missing.

1.7.3 Revenue record was the basic demarcation record. There were no forest boundary register in ex-Sirmaur State after the formation of H.P., a beginning was made for the preparation of boundary registers. However, these boundary registers have not been correctly prepared. These neither show forward and backward bearing nor exact location of the boundary pillars, nor the exact linear distances between adjacent boundary pillars.

1.7.4 A special forest survey was initiated by the Survey of India. The boundaries of all the Forests by their legal status have been surveyed on 1:25,000 scale maps. These maps have been enlarged and published on 1:15000 scales to meet specific requirements of the forest department. The boundary pillars depicted on these maps are as shown on the ground by the field staff of forest department and published after due verification by the Territorial Divisonal Forest officer. These sheets on the scale of 1:25000 and 1:15000 for the divison are available in the office of DFO Renuka Ji.

Table No. 1.7: The following sheets of the survey of India on 1:50000 scale pertain to this division.

Sr. No.	No. of Sheet	Scale
1.	53F/9	1:50000
2.	53F/6	1:50000
3.	53F/5	1:50000
4.	53F/10	1:50000

1.8 Legal Status:

1.8.1 During the erstwhile State regime, all the forests were declared as protected forests under Section 28 of the Indian Forest Act. VII of 1878. All provisions of Chapter IV of the said Act were made applicable to these forests w.e.f. 15th Magsar,1958(1901AD) vide Sirmaur Darbar Notification No. 15 date IstPhagun 1957 V (1900 AD). The control over these forests was further consolidated by Notification issued by EX-SirmaurDarbar between 1949 V and 1992 V (1892 AD to 1835 AD) vide which most of the important notified Protected Forests were declared as Reserved Forests under Section 19 of Indian Forest Act VII of 1878. All Provisions of Chapter II of said Act were made applicable to these forests vide Sirmaur Darbar Notification given below: -

1. No. 1 dated 2nd Poh 1949 V (1892AD)
2. No. 14 dated 17th Sawan 1990 V(1993 AD)
3. No. 2 dated 23rd Chait 1991 V (1934 AD)
4. No. 38 dated 27th Phagun 1992 V (1935 AD)

As per provisions of Section 32 of the Indian forest Act (XVI of 1927), rules for the Protected Forests were framed and notified vide H.P.Government Notification No. Ft. 43-241-B/49-3 dated the 25th February,

1952. Further all trees in the forests were declared protected vide H.P.Government Notification o. Ft. 29-241-80/49 dated 25-2-1952. The Government vide Notification No. 43-241-E/49-3 dated 25.2.1952 also made the provisions of section 30(C) of the Indian Forest Act applicable to the notified Demarcated Protected Forests.

1.8.2 There are other forests known as *Mushterqua* forests, confined mainly to Pachhad tehsil. These were Zamindari forests, brought under State control for proper conservation and protection, vide Sirmaur Durbar Notification dated 30 Magh,1953 V (1896 AD). Later on, the Sirmaur Darbar promulgated a code viz. '*QuwaidJanglat*' *Mushterqua* on 26thPhagun 1995 V (1938 AD) in order to regulate the exercise of rights in these forests (Appendix XVI). These forests are owned by the State Government and private individuals, singly or collectively. No land revenue was collected for these except for small patches, which were in possession of individuals w.e.f. Ist Chait 1996 V(1939 AD).The entries in the revenue record in the columns of ownership an possession are of two types viz.

Ownership	Possession
1. Mushterqua Sarkar Himachal Pradesh waJamindaranShamlat Deh	MakboojaMahkmaJanglat
2. Mushterqua Sarkar Himachal Pradesh wa Malik Khewat No.	(a) MakboojaMahkmaJanglat (b) Makbooja Malik Hissedar

Table No. 1.8.: Ownership and Possession

1.9 Rights and Concessions:

1.9.1 The Mushterqua forests were, vide H.P Govt. Notification No. Ft. 29-241/BB/49 dated 25.2.1952 declared as protected forests. Rules governing these Maushterqua forests were framed and issued vide H.P.Government notification No. Ft. 29-241-B/49-I dated 25.2.52. The Mushterqua forests were later excluded from the purview of H.P. Government notification No. Ft. 29-241/BB/49 dated 25.2.1952 vide H.P. Government notification No. Ft.8-4/59 dated 27.8.1962 and consequently the rules for these forests as notified vide H.P. Government notification No. Ft. 29-241-B/49 –I dated 25.2.1952 were also withdrawn vide Notificaiton No. Ft. 8-4/58-II dated 27.8.1962 w.e.f. 20.8.1955. The Judicial Secretary to the H.P.Government had opined that the notification declaring these forests as protected forests were ultra vires and consequently the other notification framing the rules were also invalid in view of the existing code promulgated by the Sirmour Darbar viz.*QuwaidJanglatMushterqua* dated 26 Phagun 1955 V (1938 AD). The code was good law till 20.8.1955 on which date it lost statutory force on account of the enforcement of the H.P. Private Forest Act, 1954. This view of judicial Secretary was hotly contested by the Forest Department in view of the entries in the revenue record. The position at present is rather fluid. However, these forests are governed by the provisions

of *QuwaidJanglatmushterqua* of SirmourDarbar.TheQuwaidjanglat Zamindari defined,'Zamindari'Forests as private forests though recorded in the revenue papers as 'Naqabil' or 'GhairMumkin' and even 'Naqabil Torah', NaqabilGhasnies'or 'NaqabilCharand'.The Zamindari forests are of two categories as detailed in para 2 of QuwaidJanglatZamindari,firstly owned by an individual or by several persons with defined shares and secondly, those which are not the separate property of any individual Zamindar, but are either Shamlat Deh or ShamlatOatti or Shamlat Taraf. Vide para 3 of the QuwaidJanglat Zamindari in the first kind of Janglat Zamindar, Zamikndars have rights to obtain forest produce without payment and without obtaining a permit for the constriction of residential houses or of cattle sheds. In the second kind of Janglat Zamindari no co-sharer has a right to fell any tree except for making plough, or pathas or other agriculture implements without the permission of the Collector. They could, however, appropriate other forest produce for meeting their reasonable requirements. In neither kind of Janglat Zamindar, the Zamindari had the right to fell trees for sale except when he had paid the price of the trees to the ruler at the time of purchase of land. If the trees obtrained are to be used for the construction of houses were surplus to the requirements of Zamindars and such trees were fit for silviculture marking and the Zamindars wanted to fell and sell such trees they could make an application to the collector for permission to fell and sell these trees and the Collector in consultation with the Conservator of Forests could permit fellings for sale , provided 50% of the sale price was paid to the Zamindars and remaining 50% was deposited in the Treasury to be utilized for improvement of Zamindari Janglat. The sale was to be made by the Conservator of Forests. Under Para II of the Quwaid any Zamindar guilty of breach of any of the rules, was liable to such fine as the Collector deemed fit to impose,depending upon the gravity of the offence but not exceeding twice the amount of value of the timber involved.

The rights and concessions as have granted to the inhabitants of this tract are embodied in Faisla-e-Janglat, a document prepared during Revenue Settlement operation of 1890 AD and subsequently revised in the year 1930-32. No forest settlement was ever carried out in this area. However, *Wajub-ul-Araj* of the *Missal Haquiat* prepared at the time of Revenue Settlement contains some details of rights and concessions allowed to the villagers in Government forests.

1.9.2 H.P.Government vide Notification o. Ft. 43-241/B/49 dated 5.3.1952 declared that the rights and concessions allowed in the reserved forests of Sirmaur Darbar notified under various notifications, would remain operative as here-to-fore and would be exercised in the manner described in Faisla-e-Janglat which received the assent of the Sirmaur Darbar on IstMangsher 1989 V. Rules to regulate the exercise of concessions with respect to forest produce granted to people of Sirmaur district were made applicable vide H.P.Government Notification No. ft.28.256/48-II dated 24th June,1955 and are as under:

i) The concessions shall be excercised according to the provisions of Faisla-e-Janglat subject to amendments made ther to from time to time, by the competent authority.

ii) Faisla-e-Janglat will be considered as a record of concessions in pursuance of section 14 of Indian Forest Act, 1927.

iii) No Timber or other forest produce obtained in exercise of any concession as allowed in Faisla-e-Janglat shall be sold, bartered or alienated by any means except as provided in Faisla-e-Janglat or otherwise sanctioned by competent authority.

1.9.3 As such Faisla –e-Janglat and the amendments made there-to from time to time are being treated as forest settlement report for all purposes.

1.9.4 The nature of rights and concessions enjoyed by the villagers in the Reserved and Protected forests are more or less same all over the Division, though they differ in extent from village to village as detailed in Faisla-e-Janglat. In general the rights and concessions recorded in Faisla-e-Janglat are of the following types:

a) Grazing of cattle.
b) Fodder for cattle.
c) Fulewood for domestic use.
d) Dry fuelwood for cremation purposes.
e) Timber for bonafide domestic and agricultural use.
f) Collection of Chil needles.
g) Rights of way to water sources.

1.9.5 Copies of Faisla-e-Janglat have been prepared and given to DFO for regulating the exercise of such concessions and rights.

1.9.6 It is recorded in Faisla-e-Janglat that grazing can be regulated in whole or in part of any forest for the betterment of that forest and as such closure to the grazing to the desired extent is possible in the interest of forest conservancy.

1.9.7 The rights and concession as allowed in the Government Forest in Faisla-e-Janglat are Mauza-wise. A forest may cover one or more Mauza or vice-versa. The boundary register are now being prepared

Mauza-wise to help verify as to the Mauza in which a forest lies. This will help in deciding whether the inhabitants of a particular village have rights in a particular forest or not.

1.9.8 Certain concession and rights are being exercised in the reserved and protected forests as per past practice though not provided in Faisla-e-Janglat. Status –quo was ordered to be maintained vide CCF H.P endorsement No.Ft.45-129/52 dated 10.7.1953 and No. Ft. 45-129/52-II dated 3.11.1953 till final decision by Government.

1.9.9 The rights and concessions in Mushterqua forests are regulated under QuwaidJanglatMushterqua. The rights and concessions admitted in this class of forests are given in Mauza wise jamabandies.

1.9.10 The liberal use of rights and concessions has led to the stage at point of no return. The people have realised the overuse of forest. The demand though in the increase cannot be met with by the existing forests. The villagers have also felt the need for protecting forests for long term gains. A few examples of Kota Pab, Ghataun, Luza and Mannal Forest speak of this and local villagers are managing the forests and checking the misuse of rights.

1.9.11 The total number of cattle as informed by various revenue Patwaries comes to be approximately 1,50,000 as on 30.09.2015. The main species of various domestic animal breeds are cows bullocks, buffaloes, ponneys, sheep and goats.

1.9.12 The Oak –fir meadows serve as summer grazing ground for the Gujjars. These areas are known as 'Paraos'. A list of such paraos is given in Appendix XXI. The number of cattle is fixed and only those Gujjars who have a long tradition of using these grazing runs are given permits. The general condition of these runs is bad because of loosening of soil, proning to erosion, lopping of saplings and poles and overgrazing. Amaranthus, Viburnum and other unpalatable shrubs are indicators of over grazing.

(C) Grazing Rates

During State regime before the taxes are reduced in writing in the previous Dastur-Ul-amal, the State used to charge grazing fees on very nominal basis both in kind and cash. No grazing of any kind was permitted without payment. The usual procedure followed was to issue a permit for number of cattle that he actually grazed in the forest. The rates which were incorporated in the previous Dastur-Ul-Amal were charged till 1946. These rates were low and irrational.

(D)Timber distribution (TD)

The Govt. of Himachal Pradesh has revised the old TD Policy and recent changes made earlier in relation to TD rights may be given to the rightholder as per latest TD policy according to the provision of *faisla –e-Janglat* subject to amendment from time to time by the competent authority.

CHAPTER-II

FLORA AND FAUNA

A- Flora

2.1 Composition and condition of the crop.

The aspect and the edaphic factors play the principal role of supporting the vegetation whereas the biotic factors lead to the degeneration stages of the Forest. The parts of Nohra, Sangrah and Renuka Ji Ranges face the southern aspect which being warmer is dry and supports Kokath forests and the portion facing the northern aspect are moist and supports Ban, Fir, Spruce and Deodar forests. The Shillai and Kaffota Ranges are rich in lime stone and portions of this edaphic site supports Chil Forests. The riverine areas along the Tons and Giri rivers support Khair, Shisham and mixed deciduous forests with *Terminalia* and *Anogeissus* as the main species. Grazing and heavy lopping are the chief biotic factors which lead the degradation stages.

2.2 Forest Types:

The type of forests met as per 'A revised survey of the Forests types of India' by Champion and Seth are given below: -

GROUP 5		TROPICAL DRY DECIDUOUS FORESTS
SUB GROUP 5 B		NORTHERN TROPICAL DRY DECIDUOUS FORESTS
1.5	B/C 1a	Dry Shiwalik Sal
2.5	B/C 2	Northern Dry Mixed Deciduous Forests
GROUP 9		SUB TROPICAL PINE FORESTS
9/C 1		Himalayan Chir Pine Forests
3.	9/C 1a	Lower ShiwalikChir Pine Forests
4.	9/C 1b	Upper or Himalayan Pine Forests.
GROUP 12		HIMALYAN MOIST TEMPERATE FORESTS
12/C 1		Lower Western Himalayan Temperate Forests
5.	12/C 1a	Ban Oak Forests
6.	12/C 1b	Moru oak Forests

7.	12/C 1c	Moist Deodar Forests
8.	12/C 1d	Western Mixed Coniferous Forests.
		GENERAL EDAPHIC AND SERAL TYPES
9.	5/DSI	Dry Deciduous Scrub Forests
10.	5/IS 2	Khair-Sissoo Forests
11.	9/C1/DS 1	Himalayan Sub-Tropical Scrub
12.	9/C1/DS 2	Sub Tropical Euphorbia Scrub
13.	12/C 1/DS 1	Oak Scrub.

2.2.1 Type 5 B/Cla Dry Shiwalik Sal

This type of Forests is met within exposed southern slopes of Shiwalik ridge and is exposed to periodical dry spells. The slopes are fairly steep, soil shallow and sandy with pockets of clay. Soil is devoid of humus and possesses boulders, pebbles or beds of sand stone.

Sal is the main species. Quality is poor, that is mainly IV. The proportions of Sal is 60%. The other associates are *Terminalia tomentosa*, *Anogeissus latifolia*, *Lanneacoromandelica, Buchananialanzan*, *Acacia catechu, Bauhinia spp., Boswellia serrata*. Occasional trees of Chir pine are also met with.

The undergrowth consists of Carissa opaca, Flemengiaspp.,Randiadumetorum, Woodfordiafruticosa, Colebrookiaoppositifolia etc. Grasses are *Eulaliopsisbinata* and *Heteropogoncontortus*. Climbers are *Bauhinia vahlii*and*Milletia auriculata*. The natural regeneration is deficient. The density is .3 to .6. This type of Forests is seen in 14 Janjhli, 18 Sataun etc. in Kaffota Range.

2.2.2. 5B/C2 Northern Dry Mixed Deciduous Forests:

This Types of Forests occurs on the lower slopes draining into the Giri, Tons and lower altitudes of the Division. These forests extend upto 1200M amsl. The most common species are *Anogeissus latifolia, Limoniaacidissima, Lannea grandis, Aegle marmelos, Flacourtiaramontchi, Eugenia jambolana, Mallotusphillipensis, Terminalia tomentosa, Terminaliachebula, Syzygiumcumuni, Cassia fistulaandOugeniadalbergioides.*

The undergrowth is moderately dense and generally comprises of *Carrisa opaca, Woodfordia floribunda, Murrayakoengii, Euphorbia royleana, Adhatodavasica* and *Colebrookiaoppositifolia*. The common climbers in this area are *Bauhinia vahlii, Pueraria tuberosa, Ceasalpiniasepiara* and *Combertumdecandorum*.

The canopy is light, irregular often broken and formed entirely of deciduous trees. The trees are short and crooked in form. The quality on the whole is poor and crop is of little value for fuel and fodder.

The forests are generally invaded by local people for grass collection, fuel wood and small timber. The thinning of lower storey for fuel and fodder has led to the invasion of weeds like *Lantana camara* and *Cassia tora*. During summer the forests given a sparse, stunded and poor appearance whereas in monsoon the forests appear lush green with undergrowth and greening of all trees. This type occurs mainly in 42 Unger, 43 Thana Kegwa, 47-Chrighatti, 50 NehlaGawahi in Sri Renuka Ji Range; Gabbar, Sakhauli, Chandni, Kather, Dhab-Pipli, Mailani, Sehbara, Manal, Salag, Shiwa, P-1 Sherli Manpur Forests in Kaffota Range and P-7 Lagnoo, P-6 Mashoor, 16 Gatlog, 17 Kufer Kiara forests in Sangrah Range/ Nohra Range.

2.2.3 9/C1a Lower or Shiwalik Chil pine forests.

This sub types is confined to Kaffota Range and occurs upto 1000 M elevation on Dry southern slopes. The chil trees are found scattered in pure form or with a scattered deciduous lower storey generally on colloquial aspects or in depressions. The density is thin and quality poor. Regeneration is absent. The main floristics is *Pinus longifolia* with *Mallotusphillipensis, Pyrus pashia, Emblica officinalis*. The undergrowth is mainly *Carrisa opaca, Rubus ellipticus, Myrisine Africana, Colebrookiaoppositifolia, Murrayakoenigii* and *Adhatodavasica*.

This sub type is met in Forests 14-Janjhli, 15 Salag of Kaffota Range.

2.2.4 9/C1b Upper or Himalayan Chil Pine Forests:

This sub type is found from 1200 to 1800 M elevation over-lapping the Tropical dry deciduous forests at lower elevation and running into Temperate Forests at higher reaches. It covers an area of 1740, Ha. This type mainly occurs in Shillai and Kaffota Range. The chief species is Pinus longifolia. However, at lower elevation along Khalas in damp and humid depressions and declivities Syzgiumcumini, Lannea grandis is found whereas, Quercus leucotrichophora, Rhododendron arboretum, Cedrus deodara, Pieris ovalifolia and Myrica nagi are found at higher elevation.

In Kaffota, Sangrah and Shillai Ranges, there are quite a few examples wherein chil and deodar are growing side by side, chil occupying spurs and deodar cool Khalas. This is mainly on northern aspect. Due to heavy grazing and frequent fires tender trees and shrubs have been destroyed and replaced by hardy species such as Flemingiaprostrata and Rhus parviflora which are coming up as the weeds.

The Forests are middle aged to young having a density of .3 to .6. The quality varies from II to III average being II/III. Regeneration both, natural and artificial, of Chil is satisfactory. At lower levels, however, regeneration is poor due to heavy biotic pressures. The Chil zone is prone to severe soil erosion. Landslips are common wherever road passes through the forests. The sub type occurs generally in 47-Charag, 49-Ganu, 46-Chhow Bhoggar forests in Renuka Range; 2-Tatiana, 1-Khajuri, Jamana Pabar forests in Kaffota Range; 68-

Balikoti, 52-Koti Bonch, 58-Kharkahn, 61-Loza, 6-Manal. 53-Bandauli forest in Shillai Range and 14-Jamal Nihog, P-3 Bhajond forests in Nohra Range.

2.2.5 12/C1a Ban Oak Forest:

These are the main forests found in the Division. They occur at elevation varying from 1800 to 2300 M elevation and occupy 15,445 Ha. area.

There are continuous patches of vast areas of these forests. The trees are badly lopped around villages and paraos, and give a short, stunted and open look. However, in the area away from habitations and paraos, the trees are huge with large crowns. The density exceeds 0.8. Some monumental trees above 3.5 m girth can also be seen in forests of Ghaton, Chokar and LujuwahJablog.

The main species is Quercus leucotrichophora with mixture of *Rhododendron arboreum, Pieris ovalifolia, Litseaumbrossa, Myrica nagi*and*Cornus capitata*. The undergrowth is generally dense comprising of *Myrisineafricana, Boenninghauseniaalbiflora, Indigofera gerardiana, Rubus niveus, Desmodiumtillaefolium, Berbarischitria*and*Princepia utilis*. Among the climber are Hedra helix, *Smilax parviflora* and *Vitis trifolia*. Nirgal bamboos also occure in depressions and declivities. The trees are laden with epiphytic ferns and moss.

The patch sowing of deodar wherever attempted in oak forests is successful e.g.,Ghatton, C-2, Tatiana C-7. Tjhis sub type of Forests can be seen in the following forests.

Renuka Range :	45-Ghatton
Kaffota Range :	2-Tatiana
Shillai Range :	65- Shri Kiari, 67- Chiali, 64- Bhatnaul, 70- Kota Pab, 69- Khatva, 66-Milla, 56-Jaswi, 57-Lani, Baror, 30- Dabar, 31- Jarwa, 59- Jakando, 62 –Nai Panjore, 29- TatwaBeyong.
Sangrah Range :	27-Dasakana, 26-Tikri, 32 Panjah, 33-Bhaltar, 39-Lazwa, 57-Arat, 40-Ranphuwa, 39-Uncha Tikker,
Nohra Range	13-Manal, 10 Chokar, 14-Pipli, 15 Bandal, 8-Shilli, 7-Bhangar, 9-Bhangari, 1-Nohra, 2- Bhog, 6-Charna, 5-Ghandoori, 23-Chunvi, 24-Sail.

2.2.6 12/C1b Moru Oak Forests:

It extends from 2000 m to 2500 m elevation; The Ban oak forests in lower elevation extends into moru oak forests at higher elevation e.g., RF Khatna. Dense forests of Moru oak near Haripurdharis a good example. The drier aspects are covered with poor growth of ban.

The main species is Quercus species is Quesrcushimalyana mixed with *Quercus leucotrichophora, Rhododendron arboreum* and scattered trees of *Pinus wallichiana.*

This sub type is seen in following forests:

Sangrah Range: 27-Dasakana, 51- Khalando, 25-Deori Kharan

Nohra Range: 5-Gandhoori, 24- Sail, 23- Chunwi

2.2.7 12/C1c Moist deodar forests:

The forests occur in Kaffota, Shillai and Nohra ranges and covers an area of 728 Ha. These forests occur between 1800 to 2000m elevation.

The Deodar forests are almost pure on exposed ridges. However, in humid Khalas species of *Quercus leucotricophora*and*Rhododendron arboreum* as trees, *Lonicera augustifolia, Viburumcotonifolium, Berberis chitria, Daphne cannabina, Rubus niveus, Princepia utilis* as shrubs and *Hedera helix*, *Jasminum officinale, Clematis montana, Rosa moschata* are common climbers. The ground cover consists of *Fragaria indica*, Ranunculus and grasses.

The crop is predominantly middle aged. The boles are straight and tall and the density varies from 0.3 to 0.6. The regeneration is patchy and, in many places, deficient and absent. The deodar trees are badly lopped for fuel and leaf mature by the locals.

This sub type is seen in the following forests: Kaffota Range: Nigali, 2-Tatiana, Shillai Range: 65-Shri Kiari, 64- Bhatnaul, 66- Milla, 51-Khallando, 59-Jakhando.

Nohra Range: 15-Bandal, 9 Bhangari.

2.2.8 12/C1d Western Mixed Coniferous Forests.

This sub type occurs at elevation ranging from 2400 m to 3000 m mostly in Shillai and Sangrah ranges. The total area is 892 Ha.

The main crop is Spruce at lower limits and fir predominates on higher and damper locations. Kharsu oak is the main associate in the under storey. The under growth is moderate and comprises of Vibernum, Skimmialaureola, Deutzia corymbosa, Valeriana hardwickii, Ainsila aptera, ferns and grasses.

The tree canopy is moderate, often broken. The trees have tall boles and reach upto 50 m height. Lightening damage is common occurrence in these forests. The regeneration of spruce is adequate; however, the regeneration of fir is deficient and poor. The saplings of young trees of spruce are often lopped by the Gujjars in the Paraos for the roofing of their huts.

In midst of oak and fir spruce forests meadows are found at places. These are used by the Gujjars for summer grazing.

This sub type is met in the following forests:

Sangrah Range: 63-Gata Mandwach, 45-Ghatton, 25-Deori Kharan.
Shillai Range: 60-Manal, 61-Luja.

2.2.9 5/DSI Dry Deciduous Scrub:

This type of forests are found in the dry deciduous forest Zones with poor soil. The main species occurring in these forests are *Lannea grandis, Acacia catechu, Aegle marmelos, Carissa opaca, Euphorbia royleana, Sapium insigne, Woodfordia floribunda* etc.

These forests are met within Sri Renuka Ji, Kaffota, Shillai, and Nohra Ranges.

2.2.10 5/IS2 Khair sissoo forests:

These forests occur mainly along the banks of Giri River in Renuka and Kaffota ranges. The plantations of Khair along river beds at Sataun have shown good results. Shisham has also started coming up in this riverine succession. The undergrowth comprises of *Zizyphus jujuba, Murrayakoenigii, Adhatoda vesica* etc.

2.2.11 9/C1/DSI Himalayan sub–Tropical Forest:

These forests are found mainly in Kaffota and Shillai ranges. Such areas occur on southern slopes in chil Zone where the soil is shallow. Chil has almost disappeared due to adverse biotic factors such as fellings, grazings and fuelwood collection etc. thereby leaving residual scrub forests of *sapium insigne, Euphorbia royaleana, Rhus parviflora* etc.

2.2.12 9/C1/DS2 Sub tropical Euphorbia scrub:

Euphorbia royleana is found in degraded rock outcrops in chil zone. Due to fast and easy vegetative propagation and its succulent nature it is expending into many forest areas as well these scrubs are seen on the banks of Tons River in Shillai Range; Steep slopes on banks of Giri in Renuka and Nohra Ranges.

2.2.13 12/C1/DSI Oak Scrub:

The oak forests on the southern aspect with shallow soil and low moisture show stunted and slow growth. These are also prone to heavy lopping and trees tend to become scrub. The usual associatesare*Pyrus pashia* and *Pieris ovalifolia*. The under growth is of Rubus ellipticus, Princepia utilis and Berberis.

This degradation stage is met with mainly in Sangrah and Shillai Ranges.

2.3 Plantation:

The Plantations of Chil, Eucalyptus, Khair, Shisham, deodar and oaks have been taken up in the past. The list of the plantations areas has been listed in Chapter V.

2.4 Injuries to which the crop is liable:

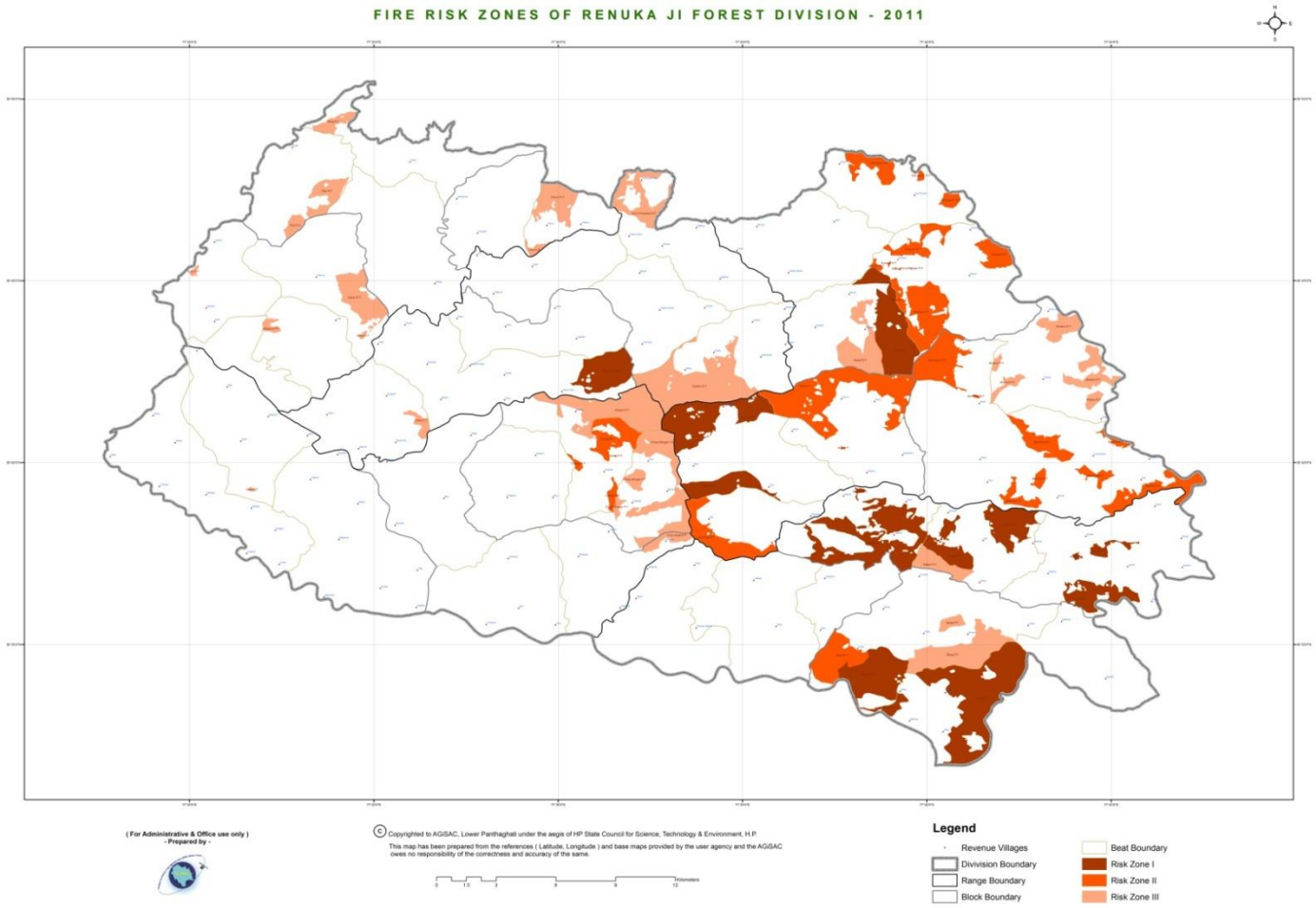
The injuries to which crop is liable are as follow: -

2.4.1 Fire:

The fire is common in chil areas**.** The list of numbers of Forest fires year wise were reported is tabulated below. However, the main cause of fire has been man and is due to negligence. The other reason of fire is the careless annual burning of the ghasnies by the local wherein the fire escapes into the forests. The details of the fire cases in the past are given below:

Table No. 2.1: Forest Fires incidences in Renuka Ji Forest Division.

Year	**No. of Fire incidences**	**Area burnt (Ha.)**
2000-01	04	52
2001-02	00	00
2002-03	00	00
2003-04	05	491.78
2004-05	07	141
2005-06	08	338.42
2006-07	02	40
2007-08	11	240
2008-09	06	121.5
2009-10	24	521
2010-11	15	75.5
2011-12	02	23
2012-13	23	268
2013-14	00	00
2014-15	10	46
2015-16	08	129
2016-17	23	210
2017-18	00	00
2018-19	09	30.5
2019-20	38	96.5
2020-21	04	32.75
Total	**199**	**2856.95**



2.4.1.1 Effects of fire on Chil Forests:

Chil is fire susceptible Species. A devastating fire can lead to the crown fire resulting in complete burning of mature/ over mature trees. The regeneration is completely destroyed in such fires. But here the fire is generally ground fire and sometimes damages the seedling crop. Mature/ overmature trees are not damaged severely.

2.4.2 Excessive use of acid in resin taping:

The excessive use of acid during resin taping harms the chil trees and these turn dry. Presently the rill method is only applicable to extract the resin from the chil species. Strict implementations of provisions of rill method and proper check on use of acid helps check this effect.

2.4.3 Lopping

Oak is the main target of lopping. It is mainly lopped for fodder and fuel. Deodar is also lopped for fuel and manure. Spruce is mainly lopped by the Gujjars for the roofing of their huts.

2.4.4 Grazing:

Grazing has a dual impact on the forest. First the browsing and trampling of the seedlings of plantations and natural regenerations are destroyed and secondly, the soil at the paraos is trampled by buffaloes, sheep and goats and this leads to erosion.

2.4.5: Roads:

The roads considered the life lines of progress and development has been very detrimental to the forest areas. The cutting of hill sides for roads results in the sliding of the land while dumping of the debris downhill results in damaging the forests down below on the other.

Latest checks on illegal road construction regularization of violations. The details of such roads are tabulated as appendix-XXVI, attached at the end of the working plan.

2.4.6 Quarrying:

Sri Renuka Ji and Kaffota Ranges have large deposits of lime stone. The mining activities in both the private and govt. lands is proving very harmful because no efforts to reclaim these areas have been undertaken. A need for reclamation of these areas is urgently required. Lead is also mined in small quantities but the damage is negligible. The DFO has reported that no mining is being done in the forest areas since the promulgation of the Forest Conservation Act, 1980. The list of mining areas is attached as Appendix- XX.

Latest instructions regarding mining powers and controls as approved by the competent authority and Hon'ble Courts order amended from time to time be kept in view by granting NOC by the department.

2.4.7 Weeds

Lantana camera is invading the forest areas. Lantana finds way in the areas having good soil. Lantana is a good soil binder but is threat to the regeneration. In addition to this even Congress grass & Eupatorium are also spreading very fast on the fringes of the forest.

The various instructions and method approved by the competent authority be kept in view while adopting the method to remove them from the forest.

2.4.8 Encroachments:

Encroachments, yet not a problem in the area but also cause damage to the forest if happens. Govt. of H.P. vide notification No. 1-21/71 L.S.G. dated 8.6.1994, copy appended as Appendix –X, have appointed DFOs as Collectors under the H.P. Public Premises and Land (Eviction and Rent Recovery) Act, 1971.

The position of encroachment cases in the division is appended as Annexure-XXXI.

Table No. 2.2: STATEMENT SHOWING THE CASES OF ENCROACHMENT IN RENUKA JI FOREST DIVISION

Position of encroachment cases under H.P. Public Premises and land (Eviction & Rent Recovery) Act,1971 (< 10 Bighas) (31.03.2021)											
S. No.	District	Circle	Division	No. of cases challaned before DFO-Cum-Collector		No. of cases decided/eviction order passed		No. of cases in which land actually evicted		Balance	
				No.	Area(ha)	No.	Area(ha)	No.	Area(ha)	No.	Area(ha)
1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.	12.
1.	Sirmour	Nahan	Sri Renuka ji	290	97.2437	286	95.4664	218	67.5663	72	29.6774

Position of encroachment cases filed in Revenue Court under Section 163 of H.P. land Revenue Act,1954											
Si. No.	District	Circle	Division	No. of cases challaned before DFO-Cum-Collector		No. of cases decided/eviction order passed		No. of cases in which land actually evicted		Balance	
1	2	3	4	5	6	7	8	9	10	11	12
1	Sirmour	Nahan	Sri Renuka Ji	-Nil-	-Nil-	-Nil-	-Nil-	-Nil-	-Nil-	Nil-	Nil-

Position of cases in which FIR registered								
Name of Division.	**Total FIRs registered**		**Cases in which demarcation investigation carried out**		**Cases filed in judicial court**		**Cases filed before DFO-Cum-Collector.**	
	No.	Area in ha.	No.	Area	No.	Area in ha.	No	Area in ha.
Sri Renuka Ji	9	34.4216	19	37.4864	19	37.4864	19	37.4864

2.4.9 Illicit Felling and export:

S. No.	year	Opeing Balance		Cases detected during the year		Total		Cases compounded during the year		FIR lodged during the year		Cases challaned in the court by Deptt.		Closing balance at the end of the year	
		No. of cases	value	No. of cases	Estimated value	No. of cases	Estimated value	No. of Cases	Amount Realized	No. of cases	Estimated value of produce.	No. of cases	Estimated value of produce.	Cases	Amount pending
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
1	2010-11	102	238256	27	349175	129	587431	63	341821	3	93201	0	0	**63**	**152409**
2	2011-12	63	152409	48	415248	111	567657	34	316510	5	55231	0	0	**72**	**195916**
3	2012-13	72	195916	90	696704	162	892620	52	304187	2	175857	0	0	**108**	**412576**
4	2013-14	108	412576	70	498841	178	911417	50	327095	3	130523	0	0	**125**	**453799**
5	2014-15	125	453799	48	1068815	173	1522614	67	655271	1	96085	0	0	**105**	**771258**

6	2015-16	105	771258	61	866026	166	1637284	47	681751	3	431360	0	0	**116**	**524173**
7	2016-17	116	524173	22	1553558	138	2077731	40	247710	14	1501290	0	0	**84**	**328731**
8	2017-18	84	328731	13	990914	97	1319645	10	34994	13	804626	0	0	**74**	**480025**
9	2018-19	74	480025	4	573994	78	1054019	0	0	4	564994	0	0	**74**	**489025**
10	2019-20	74	489025	1	54710	75	543735	0	0	2	65326	0	0	**73**	**478409**
11	2020-21	73	478409	4	1493217	77	1971626	0	0	4	1493217	0	0	**73**	**478409**

2.4.10 Soil erosion:

The tract is prone to severe soil erosion. Geological formation of Shiwalik Hills is loose and friable. Huge slips in nallas are noticed in Sri Renuka Ji, Kaffota and Sangrah ranges particularly along Renuka SataunShillai, Renuka Sangrah and HaripurdharRonhat roads.

2.4.11 Diseases/ Fungus:

The attack of heart rot and witches' broom are noticed in Khair. Chil at places is attacked by Trametespini which leads to the drying of trees. This can be noticed in areas around Parara block of Renuka Ji Range. The leading shoots of deodar are attacked by fungus called Peridermiumcedri.

2.5 General:

2.5.1 The Renuka Ji Forest Division forms part of the Sirmour District which touches Shimla district on the North and Chakrata region of U.P. in the east. The area is contiguous on the North and West where as on the South and East Giri and Tons river are the geographical barrier. The ecological boundaries are continuous on the North West and therefore the faunal diversity is more akin to Northern Himalayan.

2.5.2 The habitat on the southern facing slopes is dry comprises of Quercus leucotricophora with Rhododendron arboreum and Lyonia ovalifolia as chief associates. The northern facing slopes are moist and humid and harbor deodar, fir and spruce forests. The riverain areas have scrub forests with Khair and Shisham. The forest cover is intercepted with natural grassy blanks which serve as the summer grazing runs for the Gujjars. The interspersion and juxtaposition of woodlands and grasslands form an excellent cover and feeding grounds for the fauna.

2.5.3 The Wildlife Protection Act, 1972 was adopted by the State government.

2.5.4 The following two wildlife sanctuaries fall in Renuka Ji Division:

Sr. No.	Name of Sanctuary	Notification No.	Area (Sq. Km.)	Important Species
1.	Sri Renuka Ji	Fts (A) 3-6/83 dated 25.3.87	4	Leopard, Sambhar, Ghoral, Barking Deer, Black beer, Red jungle fowl
2.	Churdhar	Ft. 6-24/73-SF dated 18.11.85	56	Kalij pheasant, Koklas and Chuckor

2.6 Important Wildlife:

The various important animals found in the areas are briefly described as under:

2.6.1. A. CARNIVORA

1. Panther or Leopard (Vern. -Bragh) Panthera pardus

The average male measures 2-2.5m from the nose to the tip of the tail. The females are shorter by 40-50 cms. It weighs about 68 Kgs.Panthers are able to thrive and live almost anywhere. They are not restricted to forest and heavy cover but may thrive as well in open country as among rocks and scrub. It kills and eats anything which it can overpower with safety.During the field visits, evidences of its occurrences were recorded in Lajwah-Jablog, Ghatton, Tatiyana and Nohra forests. Cattle killing have also been reported.

2.6.2.B. HERBIVORA

1. Ghoral (Vern. Ghoral) Neamorhedusghoral:

The height of animal at shoulder is 65-70 cms. and weighs upto 25-30 Kgs. The horns are 13 cms long. It is a stocky goat like animal. The hair are coarse forming a small crest on the neck. The general colour of the animal is yellowish grey stuffed with black. The chin, upper lip, underside of jaws and throat patch are white. Ghoralfavour an elevation of 900-2000 m. They usually associate in small groups of four to eight. They feed exclusively on grasses. They prefer steep grassy slopes quite devoid of trees but retrieve to nearby wood by middle of the day.

2. Barking Deer (Vern. Kakar) Muntiacus muntjac:

It is a small deer with an average height of 65-70 cms at shoulder. The horns are 20-25 cms long. The female is slightly smaller with no horns. The colour of the animal is bright rufous grey. The barking deer is found in thick forests upto an elevation of 2500 mtrs. It is a solitary animal rarely found in groups. The rutting season is during winter months and the young ones are born in spring.

2.6.3.C. OMNIVORES

1. Black Bear (Vern. Kala Bhalu) Selenarctos thibetanus:

The black bear measures 140-165 cms from the nose to the rump. The average weight is around 90-165 Kgs. The colour is typically black with a characteristic V shaped breast mark which is white. The bear spends the day sleeping in rock caves or in the hollow of the trees. It comes out at dusk to see food and retires after sun rise. In summer they live largely on wild fruit and berries. It also raids maize crops. It is an expert climber. The females are violent when with cubs.The black bear is in direct conflict with man. Crop raiding of maize is common. Frequent cases of cattle lifting and human mauling are also reported.

2. Indian Wild Boar (Vern. Jangli Suar) Suscrofa cristata.

The wild boar is met in the lower reaches of the Division. The colour of the animal is black mixed with grey and rusty brown with white hairs. New born are brown with light and black stripes. The tusks are well developed in the males. Both the upper and lower tusks curve onwards and project from the mouth. It lives on crops, roots, tuber, insects and snakes. It is generally found in forests adjoining cultivations. It goes out in search of food during twilight. It is gregarious in nature and lives in a herd of 10-15 or more.

3. Porcupine (Vern. Sail/Sahi) Hystrix indica.

The head and the body is 70-90 cms. with a tail of 8-10 cms. The spines are 18-20 cms. The weight is 10-18 Kgs. The porcupine favours rocky hill sides. It is found on elevations up to 2000m. It shelters by day in caves, amongst rocks or in a burrow dug by itself. They feed on all types of grain, fruit and roots.

2.6.4. D. PRIMATES

Among the Primates, monkey (Vern. Bandar) and Langur (Presbytis entellus) are found. The troops of both the species are commonly met throughout the Division.

2.6.4.E. REPTILES

Snakes are a common sight around Renuka wetland. The common snakes found are Himalayan Pit viper (Ancistrodonhimalyanes) Common Indian Krait (Bungaruscaerulus) and Indian Cobra (Naja naja)

2.6.6 F. INVERTEBRATES

A special mention of leech is to be made. These are very common in the forests of Uncha Tikker, Lajwah-Jablog, Tatiana, Kota Pab, Art and Kotidhaman forests during monsoons. The preventive measures of applying salt and cedar wood oil are suggested.

2.6.7.G. BIRDS

A check list of the birds found in the Division is given in the glossary.

CHAPTER –III

PEOPLE AND UTILIZATION OF PRODUCE

3.1. Agricultural Customs:

3.1.1. The total population of Sri Renuka Ji Forest Division is 170132 distributed in 99GramPanchayats most of which are directly linked to forests for one or the other daily requirements like fodder, firewood and other forest produce. The major occupation is agriculture wherein people grow crops like tomato, cauliflower, mustard, rice, wheat, garlic, ginger, French beans, green peas, potato etc. Horticultural orchards are not extensive and seen in parts of Sangrah, Nohra and ShillaiRanges. This is supplemented by animal husbandry mainly for farm power. Milk yield is very low as majority of the cattle are none descript and low yielding. Industrial and commercial activities are very rare.

3.1.2. The villagers are either marginal or small farmers and main crop is maize, wheat, kodon, mandwa. The cash crops are ginger and potatoes. Walnut and nirgal baskets and mats also add to the economy of people. Horticulture is adopted by only farmers having large land holdings. The villagers rear cattle, cow, sheep, goat and oxen. The emphasis is on quantity of cattle. Very few rear high yielding hybrids of cattle. The winters are spent in spinning wool for their own use. Animal produce are not marketed.

3.1.3 Due to improvement in the economic status, there is a change in the style & material for construction. Of the late people are switching over to RCC houses rather than timber houses which were being made in the past. The use of timber is only in the doors and windows. The poor people however who can not afford the RCC houses are still preferring the traditional houses.

3.1.4 The rights and concessions allowed to the villagers are detailed in Faisla-e-janglat. Some requirements of right holders are also met by grant from shamlats and Mushterqua forests.

3.1.5 The human population of the tract as per 2011 census is 1,70,132.

3.1.6 The cattle population as on 31.08.2015 is 1,45,735. The cattle mainly comprises of cows, buffaloes, bullocks, goats and sheep.

3.1.7 Timber to Right Holders was being granted as per policy of the Government. Right Holders were free to cut the trees from the forest at a very nominal rate till 2006. This policy was changed and new policy/Rules were notified vide notification No. FFE-B-E (3)-43/2006-Vol-I dated 02.01.2010. This policy provides for that no Right Holders will enter the forest and the Right Holders will be given timber in converted form. The policy further provides that the Right Holders will have to opt to avail T.D. Rights from one forest irrespective of the fact that he may have agriculture land / rights in another revenue estate. The quantity was restricted to $3M^3$ for construction of new house and $1M^3$ for repair of old house. Under this policy 30 % of the weighted average market rate is to be charged from the general category, 10% from BPL families and free of cost to Fire and

flood sufferers. The timber distribution to Right Holders as per the policy has been started in this division from the year 2011. Now, recently the policy has been again revised vide notification No. FFE-B-E(3)-43/2006 Volume-II dated 26.12.2013. According to this policy for construction of new house un-converted tree (standing volume) upto 7M^3 can be given once in 15 years. Whereas for repair standing volume of 3 M^3 once in five years can be given. As per this policy Rs. 500 per M3 standing volume for Deodar & Rs. 250 per M^3 standing volume for other species has been fixed. Right holders suffer from natural calamities shall be given trees free of cost. Notification of the policy is appended as Appendix- XXII.

3.1.8 The demand of non right holders being met with mainly by depots maintained by HP States Forests Corporation Ltd. The corporation also supplies timber to non-right holder for their bonafide use.

3.2. Markets and marketable products:

The commercial exploitation of timber has been transferred to HPSFDC ltd. Fuelwood, khairwood, resin, charcoal and timber are extracted. The medicinal herbs are also exploited and exported by the private individuals (right holders/ permit holders).

3.3 Fuelwood and Charcoal:

The demand of energy is met from fuel wood and charcoals are still very common.

3.4 Nirgals:

Nirgals are confined to Nohra &Shillai ranges only. They are of great economic importance to local people who make mats, baskets, hooka pipes etc. No products of nirgalare marketed.

3.5 Katha:

Sri Renuka Ji Range has few patches of natural and planted khair trees. Extraction of katha is not done here (except by Renuka Katha Udhyog, Dadahu) and the khair billets extracted are auctioned by HPSFDC ltd sold to traders/ manufacturers by private owners.

3.6 Grazing fee:

The grazing fee as per grazing policy of H.P. Government is adopted. It has been decided to charge the grazing fee. The grazing fee is charged once in a year at the first check post. These rates are applicable to the migratory graziers who bring their cattle for winter grazing.

3.7 Past Revenue and expenditure:

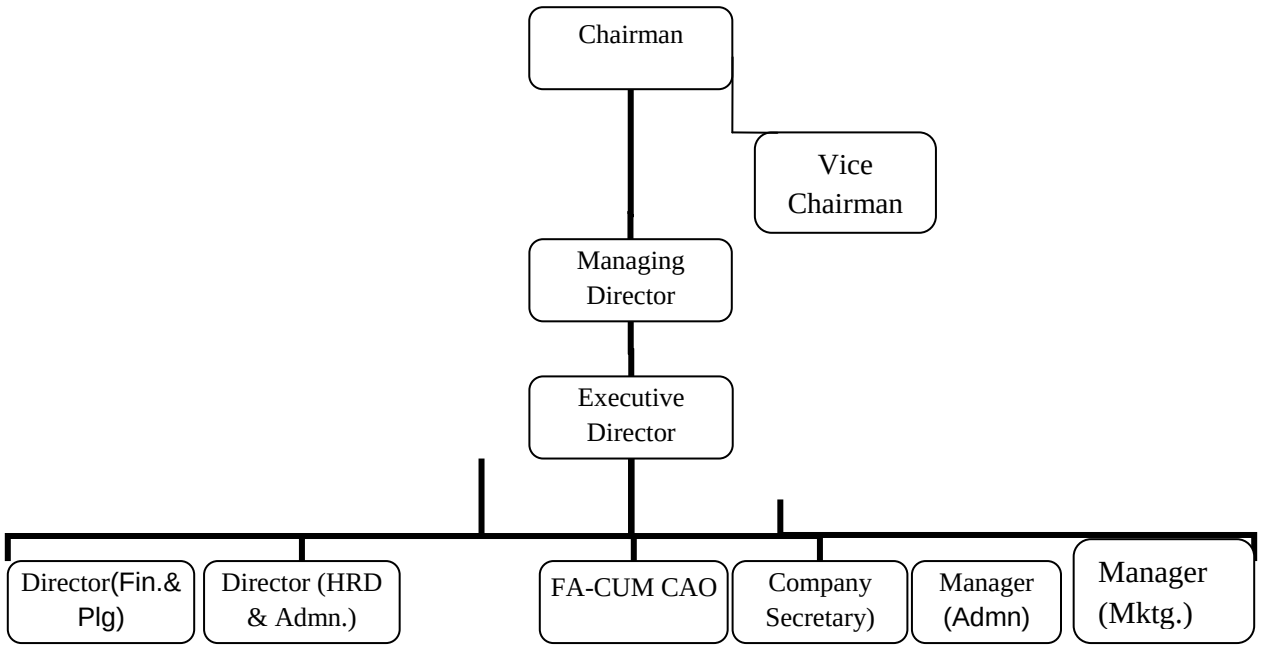
The following statement gives past revenue and expenditure (in Rs) including establishment charges is tabulated below for the last 20years:

Table No. 3.1: Revenue and Expenditure (in Rs.)		
Year	**Revenue**	**Expenditure**
1999-00	499524	29435770
2000-01	724370	27493233
2001-02	696022	20324500
2002-03	448039	19575500
2003-04	5248780	18670300
2004-05	692342	19177400
2005-06	2447133	24815900
2006-07	504060	26846814
2007-08	2414133	24815900
2008-09	370922	35204150
2009-10	210331	38248230
2010-11	937933	40779020
2011-12	429400	45356095
2012-13	1603485	52001553
2013-14	739407	60769100
2014-15	851396	66409307
2015-16	408262	60363806
2016-17	905361	69131483
2017-18	483044	74460996
2018-19	4151956	76146775
2019-20	761005	80384024
2020-21	123480	100376679

CHAPTER -IV
ACTIVITIES OF FOREST CORPORATION

H.P. State Forest Development Corporation Limited, an undertaking of the HP Govt. came into existence on 25.03.1974, under the Companies Act, 1956. The present administrative structure of H.P. State Forest Development Corporation Limitedhas been mentioned herein below:

4.1 ADMINISTRATIVE ORGANIZATIONAL STRUCTURE:



FUNCTIONAL:

Director (North)	Director (South)	Director (Mkt.)	General Managers
DM Dharamshala	DM Shimla	DMDhanotu	R&T Factory Bilaspur
DM Chamba	DM Sawra	DM Baddi/Swarghat	R&T Factory, Nahan
DM Mandi	DM Chopal	DM Mantaruwala	
DM Sundernagar	DM Solan	DM Nurpur/Bhadroya	
DM Kullu	DM Nahan	DM Udaipur	
DM Fatehpur	DM Rampur		
DM Hamirpur			
DM Una			

4.2 OBJECTIVES

The Corporation was created with the following major objectives:

I To carry out extraction and marketing of timber and resin/rosin on scientific lines by adopting suitable modern techniques.

II To eliminate the Contractors' Agency in respect of works of timber extraction and resin tapping.

III To obviate the chances of illicit felling of trees, illicit tapping of resin and other mal-practices.

IV To work the forests on commercial lines by re-cycling of funds and by raising funds from financial institutions as and when need arose.

V To generate employment to the local skilled and semiskilled labour and at present the HPSFDC is providing regular jobs to its 3500 employees.

As per the policy of the Govt. timber extraction work was transferred to the corporation in a phased manner. The corporation has been working salvage lots comprising of dry diseased, uprooted and damaged trees, handed over to it by the HP Forest Development for working. The lots of green trees made of trees coming in the road alignments approved under Forest Conservation Act are also exploited through the Corporation. The work of felling and conversion of timber is done by professionally skilled labour and its carriage to road side depots is done either by manual labour or by mule.

4.3 Harvesting & Marketing of Forest Produce

Harvesting and marketing of forest produce i.e., timber and resin lots are being carried out through HP State Forest Development Corporation, Divisional Manager, Forest Working Division Nahan. In addition, green trees coming in the road alignments approved under Forest Conservation Act are also handed over for exploitation.

4.3.1 Timber:

Only dry, dead and uprooted trees are allowed to remove from the forest. Salvage lots are marked & handed over to HPSFDC ltd. for the extraction of timber. The total volume marked to HPSFDC ltd from the period 1999-00 to 2020-21 is given below (Quantity in cum standing):

Table No. 4.2: Salvage lots marked to HPSFDC in Sri Renuka Ji Forest division (Quantity in Cum)									
Year	**Deodar**	**Kail**	**Rai**	**Chil**	**Sal**	**Broad Leave**	**Ban,Brass, Mohru**	**Sain**	**Total**
1999-00	0	0	0	238.8475	0	0	518.228	0	757.0755
2000-01	13.7333	0	0	1881.806	2.464	170.512	481.771	0	2550.286
2001-02	20.244	84.5946	277.97	1225.583	0	491.306	394.44	0	2494.138
2002-03	0	10.3353	0	1186.511	0	486.081	0	0	1682.927
2003-04	0	0	0	223.1893	44.421	352.869	0	0	620.4793
2004-05	18.4039	0	0	19.8113	88.2	451.428	179.149	8.127	765.1192
2005-06	0	0	0	433.586	4.928	287.662	0	1.77	727.946
2006-07	0	0	0	54.3925	32.221	238.272	0	9.925	334.8105
2007-08	0	0	0	0	0	0	0	0	0
2008-09	0	0	0	377.4766	18.203	195.91	0	0	591.5896
2009-10	0	0	0	99.2776	2.464	139.101	0	0	240.8426
2010-11	0	0	0	98.8897	101.84	171.845	0	0	372.5747
2011-12	0	0	0	426.1331	0	159.471	0	0	585.6041
2012-13	0	0	0	0	476.498	85.754	0	2.038	564.29
2013-14	15.7095	0	0	646.6171	0	0	0	0	662.3266
2014-15	85.6492	0	0	178.2417	0	68.938	0	0	332.8289
2015-16	0	0	0	0	0	0	0	0	0
2016-17	0	0	0	0	0	0	0	0	0
2017-18	0	0	0	28.4578	0	272.718	0	0	301.1748
2018-19	67.1097	0	0	0	0	0	6.54	0	73.6497
2019-20	0	0	0	0	0	0	0	0	0
2020-21	0	0	0	0	0.772	185.841	0	0	0

4.3.2 Resin:

The work of resin extraction generates employment opportunities for the general public of the area. On an average 480 mandays per annum are generated per section of resin tapping and carriage of resin upto road side. All the resin tapping is done by HPSFDC ltd. Rill method is used for the resin extraction. Shillai, Renuka &Kaffota ranges contributes mainly to the resin blazes. The details of number of blazes and resin extracted year wise are as follows: -

Table No. 4.3.: Blazes and resin extracted year wise in Sri Renuka Ji Forest division		
Year	**Number of Blazes**	**Total Yield obtained (Qtls.)**
1999-2000	19280	NA
2000-2001	15007	NA
2001-2002	21126	NA
2002-2003	16351	NA
2003-2004	16351	NA

2004-2005	15254	600.702
2005-2006	15283	600.927
2006-2007	15283	610.555
2007-2008	13570	535.065
2008-2009	13570	517.288
2009-2010	13570	505.482
2010-2011	5863	228.657
2011-2012	5863	220.331
2012-2013	4531	177.116
2013-2014	2494	92.278
2014-2015	4777	181.526
2015-2016	4777	195.857
2016-2017	9259	361.101
2017-2018	9259	361.101
2018-2019	9259	360.00
2019-2020	9259	351.842
2020-2021	6824	272.960

The tapping season is from 15th April to 15th November. Yield depends upon weather conditions. In the lean season the yield is 31 quintals per section of 1000 blazes whereas in good season the yield is 38 quintals per section of 1000 blazes. The net pure resin extracted is 99 to 93% of gross weight.

4.4 Past and Current Prices

The following tables indicates the royalty of standing trees of various species and another table indicates royalty of resin blazes at which these trees have been handed over to HPSFDC Ltd. and charged from the year 2007-08 to 2020-21.

TABLE-4.4

Royalty Rates of Standing Trees (Rs. Per cum) (2007-08 to 2020-21)

Year	Deodar	Kail	Fir/spruce	Chil
2007-08	4315/-	2388/-	677/-	431/-
2008-09	4315/-	2388/-	677/-	431/-
2009-10	5664/-	2944/-	836/-	626/-
2010-11	5903/-	3098/-	790/-	572/-
2011-12	5903/-	3098/-	1030/-	704/-
2012-13	5357/-	3096/-	1123/-	739/-
2013-14	5555/-	3145/-	1156/-	693/-

2014-15	6520	3300	1209	774
2015-16	6635	3480	1215	637
2016-17	6120	3218	1045	535
2017-18	5350/-	3170	938	468
2018-19	6268/-	3704/-	1092/-	626/-
2019-20	7583/-	4106/-	1370/-	809/-
2020-21	8105/-	4478/-	1500/-	931/-

TABLE – 4.5

Royalty Rates of Blazes

Year	**Rs.**
2007	23.00
2008	27.70
2009	33.70
2010	35.00
2011	65.00
2012	50.00
2013	58.78
2014	75.30
2015	65.00
2016	56.00
2017	51.00
2018	42.00
2019	43.00
2020	34.00

4.4.1 Current Prices

Pricing Committee in its meeting held on 18.09.2013 has fixed the royalty rate for the year 2013-14 for different species in special hill tracts and remote localities as under:

Table-4.6

Species	Weighted average sale rates obtaining during 2012-13 (Rs. per M3)	%age of sale rates fixed	Rate fixed for 2013-14 Rs. per M^3	
			Normal area	Remote & special hill tracts
Deodar	Rs. 24151/-	23%	5555	1333
Kail	Rs. 15723/-	20%	3145	881
Fir/Spruce	Rs. 10506/-	11%	1156	358
Chil	Rs. 6299/-	11%	693	215
Eucalyptus	Rs. 7161/-	25%	1790	NA
Shisham, Tun	Rs. 11405/-	30%	3421	NA
Sain	Rs. 7148/-	28%	2001	NA
Sal	Rs. 8601/-	16%	1376	NA
Khair-MG	Rs. 29752/-	4%	1190	NA
Other B.L.	Rs. 2287/-	20%	457	142

Pricing Committee in its meeting held on 11-07-2014 has fixed the royalty rate for the year 2014-15 for different species in special hill tracts and remote localities as under:

Table-4.7

Species	Weighted average sale rates obtaining during 2013-14 (Rs. per M3)	%age of sale rates fixed	Rate fixed for 2014-15 Rs. per M^3	
			Normal area	Remote & special hill tracts
Deodar	Rs. 5555/-	1333	6520	3260
Kail	Rs. 3145/-	881	3300	1320
Fir/Spruce	Rs. 1156/-	358	1209	484
Chil	Rs. 693/-	215	774	310
Eucalyptus	Rs. 1790/-	NA	2181	NA
Shisham, Tun	Rs. 3421/-	NA	4018	NA
Sain	Rs. 2001/-	NA	1924	NA
Sal	Rs. 1376/-	NA	1280	NA
Khair-MG	Rs. 1190/-	NA	1719	NA
Other B.L.	Rs. 457/-	142	453	181

Pricing Committee in its meeting held on 26-11-2015 has fixed the royalty rate for the year 2015-16 for different species in special hill tracts and remote localities as under:

Table-4.8

Species	**Weighted average sale rates obtaining during 2014-15 (Rs. per M3)**	**%age of sale rates fixed**	**Rate fixed for 2015-16 Rs. per M^3**	
			Normal area	**Remote & special hill tracts**
Deodar	Rs. 6520/-	3260	6635	3317
Kail	Rs. 3300/-	1320	3480	1392
Fir/Spruce	Rs. 1209/-	484	1215	486
Chil	Rs. 774/-	310	637	254
Eucalyptus	Rs. 2181/-	NA	2284	NA
Shisham, Tun	Rs. 4018/-	NA	3142	NA
Sain	Rs. 1924/-	NA	1825	NA
Sal	Rs. 1280/-	NA	1335	NA
Khair-MG	Rs. 1790/-	NA	1473	NA
Other B.L.	Rs. 453/-	181	270	108

Pricing Committee in its meeting held on 27-03-2017 has fixed the royalty rate for the year 2016-17 for different species in special hill tracts and remote localities as under:

Table-4.9

Species	**Weighted average sale rates obtaining during 2015-16 (Rs. per M3)**	**%age of sale rates fixed**	**Rate fixed for 2016-17 Rs. per M^3**	
			Normal area	**Remote & special hill tracts**
Deodar	6635	3317	6120	2448
Kail	3480	1392	3218	1287
Fir/Spruce	1215	486	1045	418
Chil	637	254	535	214
Eucalyptus	2284	NA	2656	NA
Shisham, Tun	3142	NA	3119	NA
Sain	1825	NA	2114	NA
Sal	1335	NA	1756	NA
Khair-MG	1473	NA	1788	NA
Other B.L.	270	108	459	184

Pricing Committee in its meeting held on 26-03-2018 has fixed the royalty rate for the year 2017-18 for different species in special hill tracts and remote localities as under:

Table-4.10

Species	**Weighted average sale rates obtaining during 2016-17 (Rs. per M3)**	**%age of sale rates fixed**	**Rate fixed for 2017-18 Rs. per M^3**	
			Normal area	**Remote & special hill tracts**
Deodar	6120	2448	5350	2140
Kail	3218	1287	3170	1268
Fir/Spruce	1045	418	938	375
Chil	535	214	468	187
Eucalyptus	2656	NA	2060	NA
Shisham, Tun	3119	NA	3628	NA
Sain	2114	NA	1769	NA
Sal	1756	NA	1340	NA
Khair-MG	1788	NA	2570	NA
Other B.L.	459	184	428	171

Pricing Committee in its meeting held on 15-01-2019 has fixed the royalty rate for the year 2018-19 for different species in special hill tracts and remote localities as under:

Table-4.11

Species	**Weighted average sale rates obtaining during 2017-18 (Rs. per M3)**	**%age of sale rates fixed**	**Rate fixed for 2018-19 Rs. per M^3**	
			Normal area	**Remote & special hill tracts**
Deodar	5350	2140	6268	2194
Kail	3170	1268	3704	1296
Fir/Spruce	938	375	1092	382
Chil	468	187	626	219
Eucalyptus	2060	NA	1665	NA
Shisham, Tun	3628	NA	4094	NA
Sain	1769	NA	2045	NA
Sal	1340	NA	1882	NA
Khair-MG	2570	NA	2829	NA
Other B.L.	428	171	450	158

Pricing Committee in its meeting held on 13-11-2019 has fixed the royalty rate for the year 2019-20 for different species in special hill tracts and remote localities as under:

Table-4.12

Species	**Weighted average sale rates obtaining during 2018-19 (Rs. per M3)**	**%age of sale rates fixed**	**Rate fixed for 2019-20 Rs. per M^3**	
			Normal area	**Remote & special hill tracts**
Deodar	6268	2194	7583	2654
Kail	3704	1296	4106	1437
Fir/Spruce	1092	382	1370	479
Chil	626	219	809	283
Eucalyptus	1665	NA	1742	NA
Shisham, Tun	4094	NA	4242	NA
Sain	2045	NA	2562	NA
Sal	1882	NA	2632	NA
Khair-MG	2829	NA	2046	NA
Other B.L.	450	158	359	125

Pricing Committee in its meeting held on 05-03-2021 has fixed the royalty rate for the year 2020-21 for different species in special hill tracts and remote localities as under:

Table-4.13

Species	**Weighted average sale rates obtaining during 2019-20 (Rs. per M3)**	**%age of sale rates fixed**	**Rate fixed for 2020-21 Rs. per M^3**	
			Normal area	**Remote & special hill tracts**
Deodar	7583	2654	8105	2837
Kail	4106	1437	4478	1567
Fir/Spruce	1370	479	1500	525
Chil	809	283	931	326
Eucalyptus	1742	NA	1646	NA
Shisham, Tun	4242	NA	4122	NA
Sain	2562	NA	2086	NA
Sal	2632	NA	4163	NA
Khair-MG	2046	NA	2196	NA
Other B.L.	359	125	422	148

The rate fixed by the Pricing Committee needs to be revised in view of the prevailing market rates to make Forest Corporation a competitive organization.

As a test check some lots should be worked by HP Forest Department itself to come out with the result of working to compare the same with the working of Forest Corporation to determine and arrive at true and realistic value of the timber/produce.

Prevailing Market rates of Standing Trees per M^3 of different species Conifers and market rate of Broad Leave for the year 2009-10 to 2020-21 is given below in Table - 4.14 and 4.15 respectively.

TABLE – 4.14

Name of Species	**Year**					
	2009-10	**2010-11**	**2011-12**	**2012-13**	**2013-14**	**2014-15**
Deodar	44031/-	47624/-	47624/-	47624/-	47624/-	55904/-
Kail	38044/-	38044/-	38044/-	38044/-	38044/-	38044/-
Chil	15372/-	15372/-	18630/-	18630/-	18630/-	21117/-
Fir/spruce	17271/-	17271/-	22437/-	22437/-	22437/-	22437/-

Name of Species	Year					
	2015-16	2016-17	2017-18	2018-19	2019-20	2020-21
Deodar	40126/-	55904/-	55904/-	65495/-	79237/-	84683/-
Kail	38044/-	40126/-	40126/-	46896/-	51980/-	56684/-
Chil	21117/-	21117/-	21117/-	28237/-	36503/-	41976/-
Fir/spruce	22437/-	22437/-	22437/-	26141/-	32778/-	35892/-

TABLE – 4.15

Market rates (Rs. Per m^3)

Name of Species	**Year**					
	2009-10	**2010-11**	**2011-12**	**2012-13**	**2013-14**	**2014-15**
Ban/Kharshu/Mohru	18000	18000	18000	18000	3882	3882
Shisham/Walnut	21663	21663	23711	23711	3882	3882
Sal	10839	10839	14957	14957	14597	14597
Sain	11229	11229	14849	14849	14849	14849
Kokath	5254	6109	6888	6888	3882	3882
Kikar	7818	3443	4704	4704	3882	3882
Eucalyptus	6076	7093	10381	10381	3882	3882
Mango	7877	9577	10424	10424	3882	3882

Poplar	8907	8907	8907	8907	3882	3882
Jamun	2024	3443	4704	4704	3882	3882
Neem	1804	3443	4704	4704	3882	3882
Simbal	17992	17992	17992	17992	3882	3882
Tun	6503	6503	6503	6503	3882	3882
Mapple	2356	9545	9545	9545	3882	3882
Khair	26557	26557	28113	28113	3882	3882
Siris and other Misc.B. L Species	3443	3443	4704	4704	3882	3882

Name of Species	**Year**					
	2015-16	2016-17	2017-18	2018-19	2019-20	2020-21
Ban/Kharshu/Mohru	4754	5476	5476	8020	9726	11245
Shisham	32536	32535	37800	42654	42654	42654
Walnut	32536	32535	37300	37300	37300	37300
Sal	14597	15190	15190	21339	29840	47194
Sain	14849	17195	17195	19882	24904	29404
Kokath	4754	5476	5476	5700	9726	11245
Kikar	4754	5476	5700	8020	9726	5953
Eucalyptus	15990	18591	18591	18591	18591	18591
Mango	4754	5476	5476	8020	9726	11245
Poplar	4754	5476	5476	8020	2815	2815
Jamun	4754	5476	5476	8020	4256	4256
Neem	4754	5476	5476	8020	9726	11245
Simbal	4754	5476	5476	8020	9726	11245
Tun	32536	32535	37800	42654	42654	42654
Sagwan	0	0	0	25000	32000	32000
Mapple	4754	5476		8020	9726	11245

Siras	0	0	0	3874	9726	11245
Khair MG	62333	75375	108800	119761	119761	128585
Other BL (Kokath) Species	4754	5476	5476	8020	9726	11245

4.4.2 Marketing of Forest Produce

The timber extracted from Renuka Ji Forest division is marketed through sale depots located at Mantaruwala. The resin is processed and further sold through Nahan factory.

4.4.3. The auction rates and supply of timber to various Department for commercial uses and for Departmental/ Public undertakings being sold by HPSFDC Ltd. till the year 2012-13 is given in the table 4.16 below:

Table-4.16
Market rates of Sawn Timber (Rs. per m^3) of different species of Conifer and Broad Leaves.

KINDS AND SIZES IN CMS	**SPECIES (RATES /m^3)**			
	Deodar	Kail	Fir	Chil
1.SAWN SIZES (St. size)				
305x26x13	55000	50000	25000	23000
244x26x13	50000	45000	23000	21000
305x21x13	45000	40000	22000	20000
244x21x13	43000	38000	21500	19500
Sawn Size (Non St. Size)				
366x21x10	40000	35000	21000	19000
305x21x10	42000	37000	21500	19500
244x21x10	35000	30000	19000	18000
183X21X10	35000	30000	19000	18000
305x16x10	40000	35000	20000	18000
244X16X10	37000	32000	19000	17000
2. AXE HEWN				
305-366X13X13-16X16 & up	45000	35000	15000	10000

.

183-244X13X13-16X16& up	35000	25000	13000	8000
3. DIM DIMAS				
(All Sizes)	33000	25000	10000	9000
4. HAKRIES				
85 Cms& Above	15000	13000	9000	3000
Below 85 Cms	12000	9000	7000	2700
5. LOGS				
275 Cms& above length	37000	25000	15000	13000
Below 276 Cms. Length	27000	20000	13000	10000
6. SIDE SLABS				
All Sizes	21400	18000	7700	4600
7. ROUND BALLIES				
305-366X55	20000	15000	9000	7000
244X55	15000	12000	7000	5000
Round Ballies (Mid girth 13x13,16x16 & 19x19 cm)	15000	9000	6000	4000

Source: HPSFDC Ltd.

4.5 Lines of Export

The timber is being exported by the HPSFDC and being sold in open auction at Himkashat Sale Depot, Baddi and Mantaruwala.

Chapter- V

FIVE YEAR PLANS

Five Year Plan (FYP) system of Planning in India has given a realistic approach towards planned development of industrial, social, agricultural and environmental sectors. The first Five Year Plan was introduced post independence for the years 1951-56. The first Five Year Plan concentrated mostly on energy, irrigation, agriculture, community development, transportation and communication and industries. Forestry and environment was not given much priority at that time as the economic needs of a nascent India demanded more resource allocation for development sectors. The Second Five Year Plan (1956-61) had laid much thrust on developing the industries and heavy industries sector. The Third Five Year Plan (1961-66) had given much thrust to agricultural sector. However, Sino-Indian war and famine lead to miserable performance of the Third Five Year Plan. This was followed by Plan Holidays 1966 to 1969 where in Annual Plans were prepared.

5.1. Five Year Plans and activities carried out in Renuka Ji Division

5.1.1. Sri Renuka Ji Forest Division was formed in 1978 during the fifth Five Year Plan and thereafter was reo-organized several times till 1984. Therefore, Records pertaining to implementation of different activities during various Five Year Plans prior to 7th Five Year Plan are not available w.r.t. Renuka Ji Forest Division. From the available records, it can be observed that majority of the building infrastructure were constructed during the second and third Five Year Plan periods. Several building infrastructure were erected during the seventh Five Year Plan period also when social forestry scheme was operationalised. The River Valley Programme (RVP) was launched by Govt. of India during the Third Five Year Plan. However, RVP was not implemented in Renuka Ji Forest Division (part of Rajgarh and Nahan Forest Division at that time). River Valley Project was in operation in the area during the year 1984-85 (end of sixth Five Year Plan) after Soil Conservation Division, Paonta Sahib was wound up. Large extends of areas in different microwatershed were treated under RVP during 1989-90 to 1999-2000.

5.1.2. The Social Forestry Programme funded by Central Government was launched in Renuka Ji Division at the end of seventh Five Year Plan in the year 1989-90. Thereafter the Programme extended into the Annual Plan Periods 1990-91 and 1991-92. A total of 1597 Ha of area was taken up for planting under the Social Forestry Programme. Extensive plantation activities were carried out covering forest land and the shamlats (village common lands). Fast growing species like Eucalyptus was introduced in few low lying areas like Renuka

Ji, Sataun and Janjli. However chir pine was planted extensively across the Division. Seventh and eighth Five Year Plan periods (1985-90 to 1992-97) saw massive afforestation with more than 1200 Ha of area being planted every year on an average. This covered Government lands and the shamlat (village common lands) also.

The major programmes / activities implemented during the previous three Five Year Plans are summarized below.

5.2. Ninth Five Year Plan (1997-2002)

Soil and moisture conservation and plantations under River Valley Project continued to be implemented in the Division during the ninth Five Year Plan. The ninth Five Year Plan period saw the implementation of Sanjhi Van Yojana (launched in HP during 1998) in the Division from 1999-2000 onwards. This scheme extended into the earlier stages of the tenth Five Year Plan also. Sanji Van Yojana was strengthened towards the end of 9th Five Year Plan by clubbing the Parisharam Hamara Van Hamara Scheme (2000) and the Apna Van, Apna Dhan Scheme (2001). Sanjhi Van Yojana 2001 focused on increased peoples' participation in protection and development of forest resources. The most needed H.P. Participatory Forest Management Rules 2001was framed by the State Government to define the usufruct sharing between the local people and the role of Forest department and village communities in managing such forests under the Sanjhi Van Yojana 2001 scheme. The village institutions were registered under section 3 of Societies Registration Act 1860 and were called as Village Forest Development Societies (VFDS). The scheme also intensified the principles of sustainable forest management and stakeholder partnership elaborately for the first time.

5.3. Tenth Five Year Plan (2002 -07)

National Afforestation Project (NAP) funded by National Afforestation and Eco-development Board (NAEB), GoI was implemented for the first time in Sri Renuka Ji Forest Division from the year 2002-03. Plantations and forest development activities were carried out by FDA Renuka Ji through 22 JFMCs. Plantation and afforestation works were done over an area of 1047 Ha till 2006-07. This was the first major initiative to consolidate public participation in development and management of forest resources.

The Himachal Pradesh Forestry Sector Reforms (HPFSR) Policy Project funded by DFID was implemented in Sri Renuka Ji Forest Division in the tenth Five Year Plan for the period 2003-04 to 2006-07. Two pilot villages viz. Redli and Rejaina were selected for implementing works on a pilot basis under the project. The HPFSR Project was not an enclave project but was a process project with the objectives to develop a policy and strategy for

the forest sector that is coherent with the policies of allied sectors like rural development, agriculture, animal husbandry etc. It was a unique project that aimed at ensuring sectoral co-operation for livelihoods to forest dependent rural poor especially the women, while optimizing the use of human, land, water, forests resources and financial resources.

5.4. Eleventh Five Year Plan (2007-12)

The eleventh Five Year Plan had a well set plan for the Forestry and Environment sector. The plan document enshrined increase in forest and tree cover by 5 percentage points and also increase energy efficiency by 20 percent. This period saw the winding up of RVP Scheme in Renuka Ji Forest Division as further proposals for covering more areas were not prepared and submitted to Govt. of India. However, Eleventh Five Year Plan saw drastic changes in the strategies adopted and schemes implemented for development and conservation of natural resources.

5.4.1. NMPB Funded Project

Major Project like "Strengthening of medicinal plants resources in Chamba and Sirmour Districts of Himachal Pradesh" funded by National Medicinal Plants Board, Dept. of AYUSH, GoI was launched in Renuka Ji Forest Division in the year 2010-11. The project was strengthened in the year 2011-12 and thrust was laid on planting of medicinal herbs and shrubs also. The implementation period extended from 2010-11 to 2014-15 for raising 34 Ha of medicinal trees, 60 Ha of medicinal shrubs and 46 Ha of medicinal herbs. This involved community participation through existing JFMCs / VFDSs in the Division. The project has been successfully implemented and all targets till 2012-13 has been achieved successfully in the Division. This is a landmark in the plantation history of Renuka Ji Forest Division as nursery raising and planting of herbs and shrubs at such a large scale was undertaken for the first time in the history of the Division.

5.4.2. National Afforestation Project (NAP):

The National Afforestation and Ecodevelopment Board (NAEB) sponsored National Afforestation Project (NAP) was revived during the eleventh Five Year Plan in 2010-11 through Sri Renuka Ji FDA. Thirteen JFMCs were selected for implementation of NAP through FDA. This was the second time that NAP was being implemented in Renuka Ji Division. A total of 115 Ha was afforested under NAP plantations by Renuka Ji FDA from 2010-11 to 2012-13. However, due to constraints in fund flow, much of soil and moisture conservation and entry point activities were not undertaken and major works were restricted only to plantations.

5.4.3. Jan-Jan Sanjivni Van Abhiyan:

In its objective to promote medicinal plants and herbs, the State Government launched the Jan-Jan Sanjivni Van Abhiyan in the year 2008-09. Under this scheme 26807 medicinal trees and herbs were distributed to the public free of cost. However, this scheme was restricted only to the year 2008-09.

5.4.4. Apna Van Apna Dhan Scheme:

In order to increase tee cover on private lands, Govt. of H.P. launched the Apna Van Apna Dhan Scheme in the year 2009-10. Under this scheme tree seedlings were distributed free of cost to private land owners. A total of 40000 tree seedlings were distributed to the public during eleventh Five Year Plan period.

5.4.5. National Bamboo Mission (NBM):

The National Bamboo Mission funded by Ministry of Agriculture, GoI was also operative during the eleventh Five Year Plan starting during 2008-09. Two categories of works were undertaken in Renuka Ji Division under NBM viz. Restocking bamboo on forest land and promotion of bamboo cultivation on private lands. About 80 Ha of forest area was planted with bamboo species and about 54 Ha (notional) of private land was brought under bamboo plantation. The basic objective was to improve the stocking of bamboo species and its utilization by the local communities. Some of the plantations raised under NBM have shown very good results.

5.4.6. CAMPA funded works:

CAMPA funded forestry works took a major leap by the end of eleventh Five Year Plan. This started with the realization of the need to eradicate the invasive alien species primarily Lantana from forest ecosystem. Eradication of Lantana was considered essential to maintain the native biodiversity and also improve the quality of grazing lands. Funds under Net Present Value component of CAMPA were utilized for eradication of Lantana in the Division. This was for the first time that concentrated and well planned efforts were put in to manage the issue of invasive alien species in forest ecosystem. Maintenance of Guard Huts, B.O. Quarters and field infrastructure was carried out intensively under NPV Funds. Natural spring rejuvenation work was started for the first time in the history Renuka Ji Forest Division. This was different from the general water conservation activities as its main objective was to revive and rejuvenate the natural spring discharge and works were concentrated within the identified recharge zone of the spring. It is also remarkable to note that the focus was being shifted from traditional forestry to newer concepts of holistic natural resource and biodiversity management during the tenth and eleventh Five Year Plan period. This is evident from the fact that a feasibility study for implementing “Payment for Environmental Services” scheme was initiated in Sri Renuka Ji Forest Division. A management plan for conservation of scared groves of Sri Renuka Ji Forest Division

was also prepared under Intensification of Forest Management Scheme (Centre-State Share). Participation of women in forest management and development was also promoted by formation of three All Women JFMCs during the eleventh Five Year Plan period thus complying with the State's and Centre's gender empowerment strategies.

5.4.7. MNREGS:

The enactment of Mahatma Gandhi National Rural Employment Guarantee Act during the eleventh Five Year Plan ushered in a large contribution of human labour in the construction of check-dams and soil conservation activities. Two Van sarovars were created under MNREGS during the eleventh Five Year Plan. It provided with opportunity to tap local labour mostly in soil and water conservation activities. However, due to multi-departmental implementation and long distance of forest land from villages, it has been difficult to get job card holders for forestry works. Job card holders / labour prefer working near their villages and hence forestry works under MNREGS could not be intensified up to expectations.

5.5. Twelfth Five Year Plan (2012-17)

The beginning of 12th and current Five Year Plan i.e. financial year saw the continuation of previous schemes like NMPB, Apna Van Apna Dhan, NBM and NAP. The Division has geared up for the implementation of the Green India Mission. Since the 12th Five Year Plan has just begun, it is too early to analyze the working during this period.

5.6. Summary of working during the Five Year Plans

5.6.1 It can be seen that the initial Five Year Plans concentrated more on plantation and afforestation activities. Building infrastructure was improved during the second and third Five Year Plan as post independence strengthening of department and provision of facilities for field staff was felt necessary. Plantations were being carried out to the tune of more than 1500 Ha every year during the period of seventh and eighth Five Year Plan. However, with the beginning of ninth Five Year Plan, trends in forest management shifted towards conservation and protection. By the beginning of tenth Five Year Plan reforms in forestry activities were thought of and tried also. Eleventh Five Year Plan period brought in drastic changes in the objectives of management. There was a paradigm shift in management of forests as aspects related to biodiversity conservation, spring rejuvenation, augmenting and conservation of medicinal plants and ecorestoration of invasive alien species infested areas began to be given more priority. People's and women participation in forests and natural resource management got increased impetus in the tenth and eleventh

Five Year Plans. The end of eleventh Five Year Plan and beginning of twelfth Five Year Plan saw the use of GIS and remote sensing based techniques for resource mapping and monitoring in Renuka Ji Division. Handheld GPS was started to be used intensively for geo-locations and mappings during the end of eleventh Five Year Plan and beginning of twelfth Five Year Plan. Every Forest Block has atleast one handheld GPS system and the field staff has been trained to use them effectively. Complete digitization and value addition with useful layers were done at compartment level for the first time in Himachal Pradesh in Renuka Ji Division only. Thus there has been a good amount of technological interventions also. This shift in management strategy goes hand in hand with the global scenario of forest and natural resource management. Renuka Ji Forest Division has adapted to changes in forestry and natural resource management strategies whenever these changes took place globally.

5.6.2. In the coming times, the focus shall rely on holistic management of forests and natural resources vis-à-vis biodiversity management, community / stakeholder partnership, and climate change. Technology interventions in decision making, intensifying stakeholder partnership, human resource development and infrastructure development are the need of the hour to cope up with modern challenges The working plan being a document for ensuring continuity in sustainable management of forests, should have ample space for accommodating the global and modern trends of resource management so that the community can get optimum benefits from the sustainable management of forests and at the same time ecological services can also be optimized.

CHAPTER VI
HUMAN RESOURCE MANAGEMENT

6.1. Staff position

The position of staff posted in Sri Renuka Ji Forest Division as on 20.09.2015 is given below.

Staffing pattern of Sri Renuka Ji Forest Division

Sr. No.	Name of categories.	Sanctioned strength	Existing strength.	Difference	Remarks
1	DFO	0	1	0	
2	ACF	1	1	0	
3	Supdt Gr. II	1	1	0	
4	Sr. Asstt.	2	1	(-1)	
5	Clerks/Sr.Clerk/ Jr. Asstt/	7	4	(-)3	Regular 2No. & Contract basis 2No. (2+2=4)
6	Forest Ranger	6	6	0	
7	Dy. Ranger	18	10	(-)8	
8	Forest Guards	48	48		Regular 29 No. & Contract basis 19No. (29+19=48)
9	Driver	0	1	(+)1	
10	Peon/Khalasi	12	12	0	
11	Chowkidar	15	17	(+)2	
12	Mali	12	12	0	
13	Sweeper	1	1	0	
14	Forest Worker	48	58	(+)10	
15	Syce	0	1	(+)1	
16	Dak Runner	1	0	(-)1	
	Total	**172**	**174**		

6.2 Executive Charges :

The division at present has five ranges,fourteen blocks & forty three beats.

6.3 Labour:

6.3.1 The overlapping of forest activities with those of local agriculture make the labour short. Implementation of MNREGA also increases the labour shortage.

6.3.2 The labour rates of unskilled labour is Rs. 180 per day as on 01.09.2015 (As per schedule rates revised by the government time to time.)

CHAPTER VII
PAST SYSTEM OF MANAGEMENT

7.1 GeneralHistory: As explained earlier the Tract of Sri Renuka Ji Forest Division was being managed earlier by three different working plans namely Rajgarh Working Plan by Shri O.P Sharma, Nahan Working Plan by shri B.S. Chauhan and Renuka Working Plan by Shri Praveen Thapliyal. O.P. Sharma's Working Plan was from 1976-77 to 1990-91, Chauhan's Working Plan was from 1982-83 to 1991-92 and Thapliyal's Plan from 1999-2000 to 2013-14.

The abstract of the areas in different working circle in those plans is tabulated as under: ---

OP SHARMA'S RAJGARH WORKING PLAN

Table No. 7.1.: (Area in Hactare)

Working Circle	Total Area	Area in Renuka Division
Chil	10053.72	1341.74
Deodar/Kail	3928.27	239.00
Fir/Spruce	5690.47	792.28
Rehabilitation	2859.33	234.98
Coppice	14388.51	10005.96
Afforestation	15006.96	8723.86
Total		21337.82

B. S. CHAUHAN'S NAHAN WORKING PLAN

Table No. 7.2: (Area in hectare)

Working Circle	Total Area	Area in Renuka Division
Sal Conversion	18298.89	112.87
Protection cum Afforestation	40925.17	5724.58
Chil	1027.62	190.48
Eucalyptus overlapping Circle	727.62	10.62
Total		6027.93

PRAVEEN THAPLIYAL'S WORKING PLAN

Table No. 7.3: (Area in hectare)

Working Circle		Total Area
The Chil working Circle		1792.05
The Coppice working Circle		10404.92
The Rehabilitation Working Circle		10828.80
The Protection Working Circle		4339.98
The Grazing (OL) Working Circle		
Total		27365.75

7.1.1 Early History of the Forest

No authentic record regarding the type of vegetation and forest management in the tract delt with is available. Like other parts of the country, forests of Sirmour District richness, vastness and coveted places for wildlife hunting. Mr. John Northen says in his book, 'Guide to Masuri 1984, " Nearly the Whole of the dominions of Raja of Sirmour is one vast forest, the open valleys, a dense jungle of high grass and the consequence is that instead of thousands upon thousands of happily and contended villagers, the land is given upto the beasts of the field and birds of the air. It is useless to dwell on the shortsightedness of the policy so manifestly opposed to every principle of political economy. Timber might pay a contractor; it never paid a nation. If population is the wealth of a country, it is useless to ask it to feed on timber. The earnings of prolific population pay the most of the state in a hundred ways." By the description, it is clear that the tract was occupied by dense forests inhabited by wild animals like elephants, tiger, panther, sambar, chital, barking deer etc.

7.1.2 with the passage of time, it seems that the policy of the Govt. changed and clearance of woods to bring more land under agriculture continued unabated. Land revenue being the main source of revenue to the state, agriculturists like bahaties and sainies were brought from Hoshiarpur areas of Punjab to clear the forests of Dun valley. During the Regime of Raja Shamsher Prakash, at one stage it was felt that there has been extreme destruction of forests leading to high floods.

7.2 Jiva Ram's Working Plan:

A working plan for the management of forests of Pachhad Tehsil was prepared by Babu Jiva Ram the then Divisional Forest Officer Under the guidance of Mr. G GMinnikin, Deputy Conservator of Forest and was subsequently revised by officiating Deputy Conservator of Forests Nahan.This working plan dealt with the areas of Pachhad Tehsil. However, prescriptions for oak forest falling in Renuka Tehsil were given.

7.2.1 Oak Forests

Babu Jiva Ram prescribed that trees of 1.2 m and above in girth (an average of 25 stems per ha.) should be felled. No definite marking rules were prescribed except for the broad principles that only hollow, decayed and overmature trees should be selected foe felling and that no growing trees below 1.20m girth should be touched. Lopped trees near villages and trees occurring on top of cliffs, spurs were to be protected. Pandit BishambharDass, however, revised the prescribed yield and proposed that only 12 trees would be felled in place of 25 trees per ha. Prescribed by babu Jiva Ram.

7.2.1.1 Results

Due to remoteness, the Oak forests remain untouched except for meeting the demand of local Jamindars. The oak forest near villages were heavily lopped by villagers for fodder and were reduced to very poor crops of malformrd trees. The period of Jiva Ram's Plan Expired in the year 1980 V (1923 AD).

Fellingswere continued by selection of annual coups by Divisional Forest Officers till Sewal's provisional scheme came into force in 1933 AD.

7.3 Sewal's Provisional Scheme (1933-34 to 1942-43)

7.3.1 It dealt with all Govt. owned Forests of Pachhad and Renuka Tehsils. Separate sets of proposals were made on the bases of crop for each tehsil. Deodar-Kail and Chil forests of Pachhad Tehsil were grouped into the Deodar Working Circle and the Chil Working Circle for commercial exploitation on scientific lines. However, Renuka Tehsil forests (Churdhar and Haripurdhar Ranges) are mostly blank. Fir Spruce and Oak were confined to a limited area at higher elevation. Chil and Deodar were found in small patches here and there. Sewal's scheme prescribed that these forests were to be protected and felling were to be done only to meet the legitimate requirements of the local population. Blanks were to be fenced and artificially regenerated.

7.3.2 Results

The patches of forests in these ranges that is Chandpur and Haripur remained protected except for meeting the heavy demand of the villagers. The gaps in these areas were not planted to any appreciable extent. Continuous grazing had left most of these forests very deficient in regeneration.

7.4 Period from 1942 to 1961:

Though Sewal's Scheme expired in 1942-43, yet the main provisions of this scheme continued to be followed till 1961, when Mukharji's Plan came into force. Earlier, felling had been done in accordance with annual felling programme approved by Chief Conservator of Forest, H.P.

7.4.1 Deodar Forest:

Desired results were not obtained in getting regeneration of Deodar for want of closure. However, due to persistent efforts, plantation were raised in Shri Kyari, Pab and Milla in Chandpur Range and Thian in Haripur Ranges.

7.4.2 Fir and Spruce Forest :

Selection felling in fir and spruce forests were prescribed by Sewal in his scheme, whenever a demand for timber of these species arose. Demand of fir and spruce increased considerably during the second world war and in 1943 a beginning was made towards systematic exploitation. Since then selection felling had been done in coupes proposed by the Divisional Forest Officer. The openings caused by these fellings created favourable conditions for natural regeneration which has come up in adequate quantity over most of the area in the forest.

7.5 Mukharji's Working Plan (1961-62 to 1975-76):

The two economically important species viz. deodar and Chil were brought under shelterwood Management during Mukharji's Plan which came into operation in the year 1961. The following working circles were created:-

1. The Deodar Working Circle

2. The Chil Working Circle
3. The Selection Working Circle
4. The Protection Working Circle

7.5.1 The Deodar Working Circle :

Deodar and Kail dominated forests were generally allotted to this working circle. As a result of heavy opening given under selection Working Circle earlier good amount of natural regeneration was observed in these forests and it was felt that Deodar and Kail will respond well to Shelterwood System which permits the breaking up of canopy in localized area followed by concentrated efforts for establishing natural regeneration. The plan laid special objects of management as under for this Working Circle :-

A. To improve and tend to depleted and immature growing stock.
B. To help natural regeneration by artificial sowing and planning in problematic areas.
C. To stock the blanks in conifer forests and to extend the area of deodar on suitable grounds as far as possible
D. Consistent and the above objectives to harvest the sustained yield of timber for sale in the market after meeting the local demand.

The plan took note of the heavy demand of right holders and the potential of some of the ban areas for raising deodar plantations also and consequently the areas of the working circle were divided into three parts that is to say A, B & C. in type A areas those better stocked forests were included which could be exploited commercially after adequately meeting the local demand. In type B areas those forests were included which were situated far away from the main Deodar bearing tract of the Division and consequently were to cater to the local demand of timber and were not to be subjected to commercial fellings. Some Ban Oak forests which were considered suitable for raising Deodar Plantation were grouped into type C areas.

Following table gives an abstract of the areas allotted A, B & C.

Table No. 7.4: Abstract of areas.

Present Range	Name of Forest	A type PB-I	PBU	B type	C type	Total Area
Shillai	Khalandon	-	-	65	-	65
Sangrah	TatwaBeong	-	-	-	15	220
Shillai	Bali Koti	-	-	17	-	17
	Bhatnol	-	-	171	10	181
	Jhakandon	-	-	143	-	143
	Kota Pab	-	-	49	10	59
	Shri Kyari	-	-	221	30	251
	Tatiana C 4	-	-	21	-	21
	Tatiana C 5	-	-	63	10	73
	Milla C 4	-	-	53	-	53
Sangrah	Ghaton C 2	-	-	-	125	1089
	Milla C 4	-	-	-	40	583
Nohra	Thian C 1	-	-	-	60	731
	Thian C 2	-	-	-	60	862

	LajwaJablog	-	-	-	60	461
	Telangana	-	-	-	50	392
	Ghanduri Dada	-	-	-	10	30

Complete enumeration of Deodar and Kail in 10 cm. diameter class down to 30 cm. dbh were done in all A type Forests and some of B type Forests. The quality assessed was found to be 2nd quality. The density was found varying from 0.6 to 0.8 with an average o0f 0.7. The natural regeneration was found adequate in areas where sufficient openings were there and grazing controlled. The silvicultural System in type A area i.e. the area which were to be worked for commercial exploitation after meeting all local demands was Irregular Shelterwood System with floating PBs. The chief aim of such a working was to take full advantage of all existing crop of advanced growth and patches of established regeneration. This was to prevent induced sacrifice of immature crop while working in shelterwood system because uniformity of the crop was not the aim. Openings were to be created in PBI areas in order to induce fresh regeneration over the rest of the area. Tending and thinning was to be done with a view to prepare the forest for future working under Irregular Shelter wood System. The Group Shelter wood System was also preferred because the closure problem over a large area.

The B type areas were to be managed solely for meeting legitimate demand of the local people. The annual demand of timber was to be made by carrying out improvement felling and light thinning.

The area of 60 and 50b acres were to be prescribed for planting annually with Deodar in Chandpur and Haripur Range respectively. The programme was also laid down for planting of type C areas.

A type areas were to be divided into PBs i.e. PB-I and PB-V. A rotation of 150 years was prescribed keeping in view the diameter of 60 cm. at breast height. The regeneration period was 30 years.

The objective of the plan was to extend area under Deodar on suitable ground as far as possible. Plantations have been made with success so far as renuka division is concerned. It is however, added that in balikoti forest the efforts did not bring desired results because the adverse natural factors like southern aspect and shallow soil. However, the plants surviving are doing well.

None of the areas of Sri Renuka Ji Forest Division falls in A type. The area falls in B type and C types only. No yield was prescribed from PB U and B type or C typeareas. The yield prescribed for PB I is irrelevant here as areas are not in Sri Renuka Ji Forest Division.

7.5.2 Chil Working Circle:

The area of this working circle in Mukharji's plan was 25063 acres. Out of which 2999 acres is in the tract of Sri Renuka Forest Division. Earlier Chil was Managed under Selection System but the natural regeneration could not be obtained due to excessive grazing, lack of closure, frequent fires and

andinsufficientopenings. However, in some areas where felligs were heavy and grazing restricted, good amount of regeneration came up. It indicated that uniform system will admirably suit the chil forests of the division. Definite allotment was made to PB I and PB II and the rest of the forest was grouped as PB Un-alloted. A rotation period of 120years corresponding to a diameter of 23.1" was fixed and regeneration perid was fixed as 30 years. The PB I areas were divided into two types i.e. A type and B type. In A type those areas were allotted which were better stocked and supported pre-dominantly middle aged and mature crop and the aim was to carry out seeding felling in these areas. It type B areas those were included which supported open scattered middle aged to mature crop with practically no regeneration and small pockets of blanks. The aim was to provide closure and do artificial regeneration in these areas. Following table shows the position of various areas of Renuka Forest Division with respect to Mukharji's Plan.

Table No. 7.5: Forest Areas as per Mukherji's Plan

Range	Forest/Compartment	Area (Acres)			
		PB I		PB II	PB UA
		A type	B type		
Kaffota	Khajuri 2	146	-	-	-
Shillai	Tatiyana 6	-	-	-	-
	Koti Bounch 1	-	-	-	-
	Tatiyana 1	-	-	90	-
	Kota Pab 2	-	-	23	-
Kaffota	Kajuri 1	-	-	-	876
Shillai	Tatiyana 2	-	-	-	100
Kaffota	Jamna Pabar 1, 2 & 3	-	-	-	191
Shillai	Kharkhan 2	-	-	-	83
	Luja 1	-	-	211	-
	Koti bounch 3	-	-	190	-
	Khalando 2	-	-	177	-

7.5.3 Selection Working Circle:

This working circle included all ban oak forests of Sri Renuka Ji area. Out of total area of 17,877 acres, 9740 acres fall in Sri Renuka Ji Forest Division.

7.5.4 Protection Working Circle:

The forest areas which have not been included in any other working circle are allotted to this working circle. This includes the poor quality Broad Leaved scrubs and grassy blanks with few scattered trees. Out of total 53,338 acres, 38,279 acres pertains to Renuka Ji Forest Division.

7.6 O.P. Sharma's Plan(1976-77 to 1990-91):

There was much difference between the general objectives of management in Mukerjee's Plan and the Sharma's Plan .The general objectives of management in these two plans are mentioned as follows:

1. **Mukerjee's Plan:**

- To preserve and improve forest cover so as to prevent denudation and erosion in hill slopes and ensure even flow of water in streams.
- To provide for the bonafide domestic and agricultural requirement of the local populace for grass, grazing, timber, fuelwood and minor forest produce.
- To bring about a normal distribution of age classes and establish normal regeneration.
- To extend the area under important timber yielding species on suitable lands.
- Consistent with above to obtain the highest possible sustainable yield of timber and other forest produce in perpetuity.

The general objects of managements in case of O.P.Sharma's Plan were as under:-

- To conserve and improve the existing forest cover so as to prevent denudation and soil erosion and thus help sustain and even improve the environment.
- To provide for bonafide domestic and agricultural requirements of the local population for grass, grazing, timber, firewood and minor forest produce.
- To provide timber for fruit packing cases to the orchardists and right holders.
- To bring the growing stock of important economic species to a condition as near to that of a normal forest as possible.
- To restock the degraded forests, particularly the Mushterqua forest with valuable species.
- To regulate and control both local migratory grazing as far as possible.
- Consistent with the above, to obtain the highest possible sustained yield of timber, pulp wood, resin and other forest produce.

In Mukerjee's Working Plan only 4 working Circles namely Deodar,Chil,Selection and Protection were constituted. Since these were not sufficient to meet the desired objectives of management and the requirement of the land and the people, therefore, in O.P.Sharma's Plan 7 working Circles were constituted. These were s follows: Table No. 7.6.: Forest Areas as per O.P. Sharma's Plan

Name of the working Circle	**Area in Renuka Ji Division(Ha.)**
I)Chil Working Circle	1341.74
ii) Deodar-Kail Working Circle	239.00
iii) Fir-Spruce Working Circle	792.28
iv) Rehabilitation Working Circle	234.98
v)Coppice Working Circle	10005.96
vi)Afforestation Working Circle	8723.86
vii)Grazing Working Circle(O.L)	--
Total	21337.82

In O.P.Sharma's Plan, a few changes were made in the boundaries of forests and compartments as a result of fresh demarcation. In addition, many big blocks were also divided into compartments and compartment in sub-compartments in order to intensify the forest management. The Plan also took note of the recommendations of National Commission on agriculture which recommended Functional Classification of all forest lands a under:-

1. Protection forests
2. Production forests
3. Social forests

The plan was for a period of 15 years.

7.6.1 The Chil Working Circle:

Here the constitution of Working Circle with respect to Mukerjee's Plan was changed and an area of 1099.72 ha. Of degraded and poorly stocked Chil forest with a density less that 0.3 was allotted to the Rehabilitation working Circle. An area of 832.20 ha. Moderately stocked Mushterqua Forest was added. This was not covered by any Working Circle in Mukerjee's Plan and an area of 676.90 ha. Of Chil areas allotted to other Working Circles in Mukerjee's Plan was allotted to thei Working Circle.

The plan improved the special objects of management and added new objects of management, that is, to say meeting the requirement of local people for timber, fuel etc. And restocking either naturally or artificially the areas with deficient regeneration. The other objects of management remain practically the same. The Mukerjee's Plan relied on the enumeration which was done in 1953-54 whereas in O.P.Sharma's Plan total enumeration of all areas of PBI doen to 10cm. d.b.h. were carried in 10 cm diameter classes. Stratified partial random counting over about 10% area of other forests was done forests were stock mapped, site quality was assessed occularly and density was determined by basal area method and compared with 2nd and 3rd quality. The density was found varying from 0.3 to 0.6 .The average being 0.35. The density in case of Mukerjee's Plan was estimated as 0.6 to 0.7.

The regeneration assessment survey in respect of all felled PBI area was carried out and found entirely un-satisfactory due to precarious fire and heavy grazing. It was also noted that natural regeneration was plentiful in most of the forests/compartments even where no regeneration fellings have been carried. The details of regeneration assessment survey were s under (in ha.):

Table No. 7.7: Regeneration assessment survey

i)	Area under regeneration	608.49
ii)	Fully stocked ,crop density 75% and above	52.9
iii)	Moderately,stocked,crop density 50 to 70%	62.08
iv)	Poorly stocked, density less than 50%	56.74
v)	Blanks	
	a) Culturable	273.05
	b) Unculturable	28.26
vi)	Scrubs	
	a) Culturable	7.65
	b) Un culturable	28.75
vii)	Advance growth	99.06

The Plan prescribed Irregular Shelterwood system as against the Punjab Shelter wood system in case of Mukerjee's Plan. Regenaration period was kept same as 30 years and similarly the rotation was fixed as 120 years, that is ,the age at which these forests are likely to develop into crops of about 55cm.d.b.h which are suited to the market because of proportionately larger outturn percentage.

The Plan made 4 specific PBs i.e ,PB I,PB II,PB III and PB IV as against PB I, PB II and PB unallotted in case of Mukerjee's Plan.

The plan calculated yield only form PBI areas because forests were found under-stocked. It is ,however, added that hygienic removal were suggested in PB II,PB III and PB IV areas. However in case of PB IV ,trees interfering with established regeneration were suggested to be marked to the right-holders. The 3 years programme for control burning was made for the entire chil area. The Mukerjee's Plan was silent about the prescriptions regarding resin tapping whereas the O,P Sharma's Plan observed that defective resin tapping in the past combined with frequent fires have resulted in large scale drying of trees in the past. The Plan prescribed that to avoid this damage to the tree crop the tapping would be done strictly in accordance with the rules given in the Forest Leaflet No. 13. It was also observed that a good number of trees were almost girdled due to defective resin tapping. Rotational rest for five seasons for about 10 % of blazes under tapping was considered essential and a list of forests proposed for rotational rest was also given. The Plan prescribed that following type of areas will not be taken for resin tapping.

i) All PB I areas of Chil Working Circle and the Rehabilitation Working Circle, where seeding felling have been done.
ii) All areas allotted to PB IV of Chil Working Circle where the average crop diameter is less that 40 cm d.b.h.
iii) All such chil forest of Chil working Circle which are isolated, infested with leeches and presently tapping is not economical.

This circle covered an area of 1341.74 ha. With moderately stocked chil forests. The vegetation consisted of almost pure uniform chil crop in few forests only and a heterogeneous mixture of all age classes in other areas with middle aged trees predominating. The forests were under stocked.

7.6.1.1 Critical Appraisal:

The plan although laid down the meeting of requirement of local people for timber,fuel ,etc.as one of the special objects of management but did not prescribe any elaborate provisions for it. It however said that a seed bearer, with established regeneration in cases of PB IV be marked to right-holders. It also laid down the re-stocking either naturally or artificially of the areas with deficient regeneration, but did not prescribe any specific areas and programmes for this re-stocking.

It is to be pointed out here that only 1341.74 ha. Out of an area of 10053.72 ha.OfO.P.Sharma's Plan fall within the tract of Renuka Forest Division. This area is not even 15% and therefore, there is no use of going

into further details of appraisal of Chil Working Circle of O.P.Sharma's Plan. It is however added that following areas of the tract of Renuka forest Division were prescribed in PB I of O.P.Sharma's Plan .

Table No. 7.8: Area under Chil Working Circle in O.P. Sharma's Plan.

Year	Compartment	Area	Area under Chil	Nature of Felling
76-77	Pt(R) Khajuri C-1c	41.75	31.55	Seedling Felling
79-80	Pt(P) Jamna Pabar C4	20.7	18.93	-do-
82-83	Pt(R-1) Khajuri C-2B	28.92	20.82	-do-
83-84	Pt(R) Tatiana C-5B	24.7	22.1	-do-

No seeding felling was carried out in these areas. However, spot inspections of the areas indicate that trees were removed. This may be due to salvage removal or the removal to the right-holders. The position of regeneration in these areas is as under (in ha.):-

Table No. 7.9.: Position of regeneration.

I)	Area under regeneration	115.64
ii)	Fairly stocked ,crop density 75% and above	52.37
iii)	Moderately, stocked,crop density 50 to 70%	18.93
iv)	Poorly stocked, density less than 50%	22.1
	Blanks:	
	c) Culturable	21.24
	d) Unculturable	--

No seeding fellings were carried out though were prescribed in PB-I area. From 1979-1991 resin season, 1,23,435 resin blazes were tapped. Control burnings though prescribed were not carried out.

Table No. 7.10: Distribution of the age classes in the areas of Chil working Circle of current Plan as compared to O.P.Sharma's Plan is as under:-

Dia Class	As per O.P.Sharma's Plan Trees/ha	% age	As per present plan Trees/ha	%age	As per yield Table Trees/ha	%age
10-20	21.64	34.35	170.88	77.31	960	43.04
20-30	10.1	15.87	29.12	13.17	410	18.38
30-40	14.47	22.97	10.53	4.76	240	10.76
40-50	10.18	16.16	5.47	2.47	150	6.72
50-60	4.88	7.74	2.77	1.25	105	4.70
60-70	1.41	2.23	1.39	0.62	95	4.26
70-80	0.26	0.41	0.54	0.24	90	4.00
80-90	0.04	0.06	0.21	0.09	90	4.00
90 & above	0.01	0.01	0.10	0.04	90	4.00

The comparison of the stocking of Chil in O.P.Sharma's Plan and current plan has been done vis-à-vis as per yield table. The percentages of dia classes reveal that the current plan has relatively high percentage of lower diameter classes. The reason for this is the inclusion of Chil plantations in Chil working Circle ; no seeding and final fellings have been done from the PB IV areas and natural regeneration of Chil has come up where openings were created due to salvage marking.

The position of resin tapping in the tract is discussed in Chapter-III,Para 3.3.2 shows that there is a decrease in the number of blazes upto the year 1982-83 and afterwards there is an increase upto the year 1985-86 and than there is a sudden increase in the year 1992-93. The reason is that form 1983-84 we switched over to Rill Method of tapping from the traditional French Cup and Lip method .Moreover, the tappable diameter by Rill Method kept on changing.

The control burning as prescribed were not carried out during the currency of the plan.

7.6.2 Deodar-Kail Working Circle:

An area of 239.ha.out of total area of 3928.27 ha. Of O.P Sharma's Plan falls within the present tract of Renuka Forest division.This nominal area of 239ha.has now been transferred to the Rehabilitation working Circle and therefore it is neither possible nor appropriate to discuss the results of Deodar-Kail working Circle. It is also added here that there is no Deodar-Kail working Circle in present Plan of Renuka Ji Forest Division.

It is however added that the position of this 239 ha. in O.P Sharma's Plan was as under:

Name and No. of Forest	Comptt.	Area(ha.)	Allotment
(R) R- 51 Khalando	C1	21.45	PBIII
(R) R- 59 Jhakando	C1a	56.6	PBII
(R) R- 64 Bhatnol	C3	53.3	PBIV
(R) R- 65 Shree Kiari	C3	4.30	PBIII
(R) R- 67 Chyali	C2a	7.80	PBIV
(R) R- 68 Bali Koti	C4b	10.4	PBIII
(R) R- 70 Kota Pab	C2	27.30	PBIII
(Pt) R-2 Tatiana	C4	4.55	PBII
(Pt) R-2 Tatiana	C5	53.30	PBIII

Table No. 7.11: Deo-Kail Working Circle in O.P. Sharma's Plan.

7.6.2.1 Enumeration,stock,maps, silvicultural system:

Total enumerations were carried out for PB-I areas upto 10cm.d.b.h. in 10 cm. dia classes and randomized partial enumeration were carried out for PB-II and PB-II and PB-III and PB-IV. Stock maps were prepared. Average quality was assessed for deodar and kail as II. The yield prescribed was removal of 1700 cum (all over the then Rajgarh Forest Division).The rotation was fixed at 120 years. Yield from PB-I only was prescribed .Guidelines for executing felling in B-I areas as well as for treatment of felled PB-I areas were given.

7.6.2.2 Subsidiary Silvicultural Operations in PB-I:

The operation suggested were disposal of refuse to obtain a clear bed, removal of dead damaged and unfelled marked trees, removal of trees lf less valuable species interfering with the regenerations of Deodar

and kail and shrub cutting in the areas where it was dense. Further guidelines to restock PB-I areas were suggested.

7.6.2.3 PB II,III& IV:

No removals from PB-II,III and IV were recommended except for salvage removals. However, thiningprogramme was chalked out for dense patches in PB-III & IV areas. Removals from PB-I were to depend on the progress of regeneration. Removals were to be curtailed if regeneration was not keeping pace. Regeneration survey was to be carried out every five years.

7.6.2.4 Results:

Record for removals was not maintained compartment-wise/sub –compartment–wise.However roughly calculated total removals from 1978-79 to 1991, were 975.092 cum & 708.215 cum for T.D(1985-92) and salvage removals (1978-91) respectively. Thinnings prescribed in PB-III & IV were not carried out. No. PB-I area falls in Renuka Forest Division.Only PB-II ,61.15 ha.and PB-III ,60.25 ha. and PB-IV ,61.00 ha are with present Renuka Forest Division.

7.6.3 Fir-Spruce Working Circle:

This included all Fir-Spruce Forest falling under the then Rajgarh Forest Division . Presently the FIR-Spruce forests fall in Nohra, Sangrah and Shillai ranges of this division covering 881.25 ha. area.

7.6.3.1 Objects of Management:

The special objects of management were to convert the irregular crops into normal even aged crops and to obtain maximum possible yield.

7.6.3.2 Enumeration,density,regeneration, quality and rotation:

Total enumeration in PB-I area down to 10 cm.)and randomized sample/enumeration were carried out in other PBs. Density was assessed occularly and assessed to 0.4to 0.6,average being 0.65. No assessment of quality was made. No regeneration survey was carried out nor were regeneration operations for these forests prescribed. Rotaiton period of 120 years was adopted with a regenerations period of 30 years.

7.6.3.3 Silvicultural System:

The Irregular Shelterwood system was to be followed.

7.6.3.4 Yield:

Annual yield prescribed was 2800 cum (Out of the then Rajgarh Forest Division),which on proportionate areas basis comes to be 435 cum for the present Renuka Division. The yield was to come from PBI fellings and salvage removals from other PBs.Though methods of executing fellings in PBI were suggested

and guidelines regarding subsidiary silvicultural operations in PBI were suggested alongwith mode of raising Fir plantations but no such fellings were carried out, nor any fir-Spruce plantations were raised.

7.6.3.5 Regeneration Survey:

The regeneration survey of PB I areas was to be carried out every year to assess the progress of regeneration.

7.6.3.6 Results:

Out of a total area of 3110.68 ha falling in Renuka Ji Forest Division, 2318.40 ha is transferred to Wild Life Sanctuaries and remaining 792.28 ha area falls in current plan. The areas in PB I ,PB II and PB III are 87.10 ha, 189.80 ha. and 515.38 ha. Respectively. No PB I fellings were carried out, though a periodic programme was prescribed. No record of removals compartment /sub compartment wise was maintained hence deviations cannot be calculated if any. However, In total from the year 1979 to 1991 the total removals which included T.D .and salvage markings were 381.566 cum. The T.D. fellings included removals form 1985-1991. Regeneration surveys were to be carried out in felled PB I areas every year but were not undertaken.

7.6.4 Rehabilitation Working Circle:

This Working Circle included all such forests of the chil, deodar and the Selection Working Circle of Mukerjee's Plan where density of the crop was below 0.3 and regeneration deficient. Mushterqua forests of Pajhota tehsil supporting coniferous crop of desity below 0.3 were also included in this working circle. The area of the Working Circle was 2859.33 ha. for the entire plan.

7.6.4.1 Objects of Management:

The special objects of management were to restock the degraded coniferous forests with suitable coniferous species and to meet the requirements of the timber for packing cases of orchardists and also to provide timber and other products for the bonafide domestic and agricultural requirements of the local people. Stock maps were prepared, quality class was assessed. Density was also calculated /assessed by partial random enumeration of chil areas. Irregular Shelterwood system was adopted and a regeneration period of 30 years and a rotation of 120 years was prescribed. Chil, deodar ,Kail, fir and spruce were to be introduced as indicated by locality factors. In the depression /other moist locations broad leaved species were to be planted. An yield of 300 cum was prescribed. Practically this Working Circle contained the provisions as for PV-I areas where Irregular Shelterwood System was to be followed. However, the felling programme was made only in respect of 1039.50 ha which was set aside to meet the requirement of packing cases and where fellings were

otherwise absolutely essential. It was also laid down that there will be no commercial fellings in these areas. The remaining 1829.83 ha.was not prescribed for felling as the fellings were considered undesirable silviculturally. Only one forest i.e (R) R. 62 C.6 Nao Panjore with an area of 31.60 ha. was proposed for felling in the year 1977-78.This area too was not felled as per the felling programme.

7.6.4.2 Quality,density,enumeration, regeneration period and rotation:

The average quality assessed was II/III for Chil and II for Deodar and Kail. Average density assessed was 0.25. Enumeration in a randomized manner were done in Chil areas down upto 10cm d.b.h. The forests were to be worked under Irregular Shelterwood System. Regeneration period of 30 years was adopted. Rotation was fixed at 120 years.

Methods of executing felling In seeding felling and final fellings were suggested. The planting programme was also suggested.

7.6.4.3 Results:

Annual yield of 300 cum was prescribed. The aim was not sustained yield but to restock the degraded and under stocked coniferous forests at the earliest. Sequence of fellings was suggested and also planting programme was chalked out. Plantation programme prescribed was as under:

Table No. 7.12: Plantation Programme.

No. and Name of forest	Compartment	Area (ha.)	Year of felling	Year of planting
R-62 Nao Panjore	C6	31.6	1977-78	1978-79
R-1 Khajuri	C2a	28.65	--	1979-80
R-68 Bali Koti	C4a	19.41	--	1981-82
R-25 Deori Kharan	C4	59.80	--	1983-84
R-1 Khajuri	C1f	32.52	--	1988-89
R-61 Joja	C1	40.90	--	1990-91

The record of areas planted was not maintained compartment and sub compartment wise. The removals have not been recorded compartment/sub compartment wise hence these could not be ascribed authentically.

7.6.5 Coppice Working Circle:

This Working Circle included the Oak Forest of Protection Working Circle of Mukerjee's Plan,Mushterqua Forest supporting pure ban crop were also included. Total area of the Working Circle was 14388.51 ha. of Rajgarh forest Division as per O.P.Sharma'sPlan.Major portion was covered with Ban Oak and some Kharsu in the upper region Moru pure or mixed with Ban was also found in some forests.

7.6.5.1 Special Objects of Management:

The special objects of the management were to meet the demand for fuel fodder grazing and wood for agricultural implements of the local people if any and to improve the stocking of these forests.

The area of the Working Circle was divided into two type of areas viz. exploitable and un-exploitable. The exploitable areas were those which have been opened up by roads and their commercial exploitation was economically possible. The areas other than exploitable were grouped as un-exploitable areas.

Partial random enumeration covered 1.50 percent of the area and results were as under:

Mean	63.08 cum
Standard Deviation	70.53 cum
Standard error	25.01 cum

Regeneration was found inadequate in all the forests allotted to this Working Circle.

The forests were to be managed under the Coppice with Standard system and a rotation of 45 years for coppice and 90 years for standards was prescribed. This was based on the criteria that it should take 45 years for the trees to attain a diameter of 20 cm. which was considered good enough for fuelwood purposes.

The yield was calculated by area and an yield of 80.37 or to say 80 ha. was fixed giving 2800 cum of fuelwood. The control of yield was however by area.

No working was done in areas falling in Renuka ji Forest division. The details or areas are as under:

Year	**No. and Name of Forest**	**Compartment**	**Total Area (ha)**	**Area under Oaks (ha)**	**Results of Working**
1978-79	R-24 Sail	C2	66.3	65.0	No felling done
1979-80	R-10 Chokar	C1	59.6	50.7	-do-
1981-82	R-39 UnchaTikkar	C1	58.5	48.1	-do-
1982-83	R-37 Art	C2	62.4	55.25	-do-
1983-84	R-4 Thian	C1b	93.6	66.3	-do-
1984-85	R-13 Manal	C3	88.4	88.95	-do-
1986-87	R-36 LajwaJablog	C1	35.4	35.4	-do-
1987-88	R-4 Thian	C1b	83.2	76.7	-do-
1988-89	R-14 Pipli	C1b	46.8	46.8	-do-
1989-90	R-23 Chunvi	C5	85.8	81.9	-do-
1990-91	R-9 Bhangari	C2	72.8	31.2	-do-

Table No. 7.13: Forest Areas in which no working was done.

Silvicultural system to be followed was Coppice with standards. The retention of standards being essential to serve as mother trees and also for the production of charcoal.

Subsidiary silvicultural operations for felled areas were indicated which included planting of nursery raised seedling, weeding, cleanings and thinning.

7.6.5.2 Critical Appraisal:

The total yield in the form of T.D. markings (1985-91) and salvage removals (1978-91) was 30.507 & 11945.938 cum. Respectively and because of the ban of green fellings and felling of ban trees ,the silvicultural system prescribed could not be followed, though sequence of fellings was prescribed.

7.6.6 Afforestation Working Circle:

The circle included dry mixed deciduous forest;blank areas of other forest and all plantations of various species raised upto 31.3.1976.Besides there were a few culturalable blanks with patches of species like chil,deodar,kail,oak& other broad leaved species. The plantation areas included in this Working Circle supported regeneration in the form of seedling, sapling and pole.

7.6.6.1 Special Objects of Management :

i) To restock the blanks and to replace the useless scrub growth with commercially valuable tree species.

ii) To meet the local demands for fuel,fodder,grazing and wood for agricultural implements.

7.6.6.2 Felling series, enumerations, density and silvicultural system:

No felling series was constituted. Instead,the scrub areas were categorized as exploitable & un-exploitable areas. Randomised partial enumeraton covering 3.26% of the area under scrub of this Working Circle was carried out. Density was estimated occularly and recorded in the Compartment History Files,Regenerations was almost absent. Clear felling system was prescribed with 'Reserves' having diameter upto 15 cm preferably of seedling origin of valuable species like khair ,sain ,shisham, tun,simbal, bamboo,etc.

Rotation for fuelwood species was fixed corresponding to a diameter of 20 cm. A diameter of 35 cm was fixed for production of Charcoal,A rotation of 45 years of coppice and 90 years for reserves was fixed. The yield was to be regulated by area. The annual coupe was worked out as 65 ha.

The following general rules were prescribed for carrying out markings:

i) The forests shall be clear felled except for 'Reserves' which will be 40-50 per ha.

ii) The 'Reserves' shall comprise of species like chil, khair, shisham, sain,tun, simbal ,etc. and will be 30 cm. d.b.h.or higher.

iii) More 'Reserves' shall be retained on refractory eroded and precipitous areas only dead, dry and uprooted trees may be marked in each area.

iv) Khair trees below 20 cm.d.b.h will not be marked for removals.

Subsidiary silvicultural operations like preparations of treatment maps,clearance of areas, earthwork and raising of temporary nurseries was suggested. Regeneration survey was suggested to be carried out every year.

7.6.6.3 Critical appraisal:

Though various suggestions were given to restock the forests but the variations occurred based on various factors.The starting of 'Social foestry Umbrella Project'led to planting in shamlats areas and areas in the Flood Prone River Scheme (from 1984-85 onwards) were specific in the various micro watersheds delineated in the scheme .Thus the blank areas though not prescribed under this working circle were planted with various suitable species. Success to a considerable extent has been achieved.

7.6.6.4 Results:

The main species undertaken for planting was chil,khair,deodar,robinia, popular etc.The success of chil has been satisfactory and the success percent is 50. Deodar sowing have been succesfull in the areas which are north facing (RF Ghataun, RF Tatiyana,RFLajwahJablog,PF Thian etc.).However, in some of the south facing slopes ,deodar had wrongly been planted and has failed or if established, show unhealthy growth (RF Lani Borar,RFUncha Tikker etc.).Robinia and poplar have not been tried extensively . However in a few forests in Nohra Range, robinia and poplar were tried but he growth is not healthy .The areas taken up for khair are generally refractory and have poor soil. The success is satisfactory only where the soil is good.

7.6.7 Grazing Overlapping Working Circle:

This Working Circle covered the then entire Rajgarh Forest Division meaning thereby, it covered the entire present Renuka Ji Forest Division as well.

7.6.7.1 Special Objects of Management:

These were:

I) To meet the requirement of the right-holders and concessionists as laid down in Faisla-e-janglat and other orders of Govt. of H.P. regarding grazing.

II) To improve the productivity of the area so as to ensure the continuous supply of different items of forest produce to the concessionists.

The recommendations of Grazing Advisory Committee were as follows:

i) There was a need to reduce the number of cattle by 75 to 80% after determining the carring capacity of various areas. The number of animals allowed grazing were to be frozen as per 1972 grazing season.

ii) The grazing permits,on payment were to be issued to local graziers and grazers who have long tradions of use of parao.

iii) The paraos have been over grazed .it was thought very essential to demarcate each parao on ground,its physical and productivity condition to be studied and carrying capacity fixed.

iv) The checking of illicit grazing in Government forests adjoining shamlat area to be done effectively.

v) To study the availability of grass forage from different areas.

7.6.7.2 Critical Appraisal:

Though the recommendations made were good but unfortunately the 'Paraos' with the shamlats and Govt. forests are being grazed without any check.So it was not possible to improve their productivity.

7.6.8 Miscellaneous Regulations:

Miscellaneous regulations like petty fellings,deviations,nautors,roads and paths,buildings,survey and demarcation,boundary pillars, maintenance and construction of boundary and boundary pillars, maps etc. were suggested.

7.6.8.1 Results:

i) **Petty Fellings**: These are being granted to R/H as per 'Faisla-e-janglat'.

ii) **Deviation:** Control forms were prepared by sending the requisite information to the Nodal Officer i.e. DFO Rajgarh.

iii) **Nautors:** No nautors are being recommended/given after 1980 as it attracts provisions of the Forest Conservation Act, 1980.

iv) **Roads and Paths:** The proposed roads and paths have not been constructed during the currency of working plan. Due to financial constraints and subsequent reorganizations of Renukaji Forest Division.

v) **Buildings:** Though following buildings were constructed during the Working Plan period but are inadequate due to creation of Renuka Forest Division in 1978. The list is as follows:

Table No. 7.14: List of Buildings in Renuka Ji Forest Division

Year	Name of Building	Place	No.
1978-79	Type-II	Sri Renuka Ji	04
1979-80	DFO Office	Sri Renuka Ji	01
	DFO Residence	Sri Renuka Ji	01
1980-81	RO Residence	Shillai	01
1981-82	Type-II	Sri Renuka Ji	02
1987-88	Fgd. Hut	Chandni	01
	Type-III	Sri Renuka Ji	01
1988-89	Fgd. Hut	Mandoli	01
	Fgd. Hut	Ganog	01
	Type-II	Sri Renuka Ji	01
1991-92	Fgd. Hut	Deva Manal	01
	Fgd. Hut	Nehar Swar	01
	BO Quarter	Sataun	01

vi) **Survey,Demarcation and Boundary Pillars:** The forest requires redemarcation and the shamlats require demarcation. Boundary pillars are not generally existing. No checking for their correctness or their number in a quinquincialprogramme as was suggested, was carried out.

vii) **Compartment Boundaries:** Sign boards were to be put in the field indicating the names of the compartment/sub-compartments. Nothing has been done in this regard.

viii) **Maps:** As was suggested to collect the maps of scale 1:15000; they have been collected.

ix) **Fires:** The details of various fires occurred during the currency of the working Plan are as under:

Table No. 7.15: No. of Fire incidences yearwise

Year	No. of Incidennces	Area burnt in ha.
2000-01	4	52
2001-02	0	0
2002-03	0	0
2003-04	5	491.78
2004-05	7	141
2005-06	8	338.42
2006-07	2	40
2007-08	11	240
2008-09	6	121.5
2009-10	24	521
2010-11	15	75.5
2011-12	2	23
2012-13	23	268
2013-14	0	0
2014-15	10	46
2015-16	8	129
2016-17	23	210
2017-18	0	0
2018-19	9	30.5
2019-20	38	96.5
2020-21	4	32.75

x) **Roads and Paths:** Khala Kiar-Rithet Bridle path (17km)was constructed in 1989-90.

7.7 Nahan Part:A part of area has been inherited form Nahan Forest Division which was covered and managed under the following plans.

i) Chintamani Joshi,s. Bhatacharia and Ram Chandaran Plan (1895-1915)

ii) Sewals Plan (1933-34 to 1952-53)

iii) Sharma E.Tikk's plan (1953-54 to 1962-63)

iv) S.R. Arya's Plan (1968-78)

v) B.S.Chauhan's Working Plan(1982-83 to 1991-92)

7.8 B.S.Chauhan's Working Plan (1982-83 to 1991-92):

In the 6027.93 ha. forests inherited form Nahan forest Division,the following working circles were operative:

i) Sal Conversion Working Circle

ii) Protection-cum-Afforestation Working Circle

iii) Chil Working Circle

iv) Eucalyptus (Over-lapping Working Circle)

7.8.1 Sal Conversion Working Circle:

This Working Circle covered an area of 112.87 ha. comprising almost pure sal crops on sloping hills & gentle slopes. No enumerations were carried out. Average quality of class was determined to be of III quality. The Sal forest areas inherited by Renuka Forest Division form Nahan Forest Division mainly fall in the trans Giri area which is hilly. The Sal crop supported in the hilly slopes is not healthy as compared to the Sal crop in the Paonta –Doon. The sal trees here are short, stunted and poor in growth.

Uniform system with fixed PBS was adopted for the crop. Rotationof 125 years was adopted.

The forests of Sal Felling in this Division were covered under PB un-allotted which bear middle aged crop with varying density from 0.2 to 0.3. No felling were prescribed from these forests. Only trees were to be felled to meet the requirement of local right holders, departmental use and other petty sales for local use and the fellings were to be counted towards yield. Small blanks wherever available, were to be closed for planting with fast growing species subject to the availability of funds.

7.8.2 Protection-cum –Afforestation Working Circle:

All areas excluding areas allotted to Sal Conversion Working Circle, Chil Working Circle and Pockets of Eucalyptus plantations were allotted to this Working Circle. All Miscellaneous Scrub forests were allotted to this Working Circle.

7.8.2.1 Special Objects of Management:

i) To improve the vegetative cover by providing protection to the existing growth.

ii) To maintain existing forest cover for aesthetic reasons.

iii) To preserve the existing vegetative cover for protection, development and scientific studies of wild life in the tract in general and game sanctuary area in particular.

iv) To carry out planting of important timber, fodder and fuel species to improve the vegetative cover in open areas and also to improve the utility of forests to local population.

v) To carry out planting of ornamental plants along the highways and other areas around towns and industrial areas.

vi) To protect and introduce Bhabar grass.

vii) To conserve soil and water by carrying out soil and water conservation measures.

viii) To meet the demand of local people for timber, fodder and fuel.

ix)

7.8.2.2 Treatment of Closed Areas:

The treatment of closed areas taken up for planting, were to be:

I) Closure by barbed wire or bush fencing.

II) Bush cutting be done during winter. The bushes should be cut from about 30 cm. height form ground level.

III) Digging of pits at a distance of 3×3 metres should be done. On steep areas with exposed clay soil planting of bhabbar should be done. Bhabbar may be planted in patches at a spacing of 1×1 metre.

IV) Planting of important broad leaved species like, khair ,sain, lucenea,bhera,siris ,kikar to be done depending upon suitability of site.

V) Bamboos to be planted in nallahs and shady patches with good moisture and deep soil.

VI) Beating up to be done for 2 years after planting.

VII) Bush cutting to be done for 5 years till the plants have attained a height of 2 meters.

VIII) Grass cutting should be allowed to the local villagers and if there is no demand departmental cutting subject to availability of funds should be done. This is needed to minimize the danger of accidental fires.

IX) Areas to remain closed to grazing, lopping for a period of 10 years.

X) No grant of trees to right-holders be allowed from closed areas.

XI) Soil Conservation Operations like check damming and gully plugging to be done where-ever required.

XII) In areas along highways and near industrial area planting of ornamental trees be done.

7.8.2.3 Plantation Programme:

The plantation of Khair and Shisham which have been undertaken in the past along the Giri river especially in RF Gabar and Kahter have shown excellent results. The planting in RF Nigali has been undertaken since 1962.this area has been planted with Deodar and has been converted into a good Deodar forest. The plantations of other miscellaneous B/L species has not been carried out.

7.8.3 Chil Working Circle:

The area covered by this Working Circle was 190.48 ha.The forests included were of chil intermixed with other B/L species. The special objects of management were to improve the stocking of the existing forest, resin tapping,planting of blank areas to improve the stocking of chil and planting other B/L species and to meet bonafide requirements of local people for fodder, fuel wood and timber. Only R-14 Janjli C7 of the then Bhagani Range comprising 190.48 ha.(now Kaffota Range) was covered by this working Circle. The area was not to be worked for commercial exploitation. No enumerations were carried out. No regular principles for chil management were prescribed. The open areas were prescribed for planting. Out of 190.48 ha.allotted to this Working Circle an area of 60 ha. was to be planted in the year 1984-85 as per planting programme prescribed. Salvage marking were to be carried out. Green standing trees were to be marked as per requirement of local right holders. Miscellaneous regulation including lopping and fire protection were prescribed. Areas were to be control burnt in 1983-84 with a repetition at a cycle of 3 years. Resin tapping to be carried out as per principles laid down in 'punjab Leaflet No.13'planting operations & methods were prescribed.

7.8.4 Eucalyptus Working Circle (Over-Lapping):

This Working Circle included all the Eucalyptus plantation patches raised from 1964-65 to 1977-78 and covered only 10.62 ha. of present Sri Renuka Ji Forest Division. Special objects of management of this working Circle was to fell the stagnating eucalyptus plantations; to regenerate the area with coppice crop of eucalyptus & to supplement with planting important fodder species; felling Eucalyptus to meet the local requirement of fuel wood and small timber; to replace the eucalyptus if it is not growing satisfactorily by other important species of timber, fodder and fuel. No enumerations were done. The entire area was to be felled in a period of 10 years and the felled areas were to be taken up for planting .As per Working Plan felling programme the 10.62 ha falling in this Forest Division was to be felled during 1986-87.Subsidiary silvicultural operations in felled areas were suggested and miscellaneous regulations like grazing and lopping were enlisted. The areas were to be reviewed after 10 years if the coppice crop was not responding and the areas were to be planted with other useful B/L species.

7.8.4.1 Critical analysis:

The Eucalyptus plantations have established well and now need working .it is added that the trees are not putting on desired growth due to poor site conditions.

7.9 Praveen Thaplyal working plan (1999-00 to 2013-14)

7.9.1General object of management:

Keeping in view the biotic factors, local customs and policy of the Government general objects of management was as under:-

I) To give the treatment to the forest as required by it.

II) To preserve,protect and conserve the ecological integrity of the fragile ecosystem.

III) To provide for the bonafide domestic and agricultural requirement of local population of timber, fuelwood, fodder and minor forest produce.

IV) To regulate and rationalize the local and migratory grazing by improving the productivity of the pastures grasslands.

V) To obtain optimal sustained yield of timber, fuelwood, pulpwood, resin and other forest produce.

7.9.2 Constitution of working circles:-

7.9.2.1. Following working circles were constituted:

Table No. 7.16: Working Circle as per Praveen Thaplial's Plan

1	The Chil Working Circle	1792.05 hac.
2	The Coppice Working Circle	10404.92 hac.
3	The Rehabilitation Working Circle	10828.80 hac.
4	The Protection Working Circle	4339.98 hac.
	Total	27365.98 hac.
	The Grazing (OL) Working circle	27365.98 hac.

7.9.3The Chil Working Circle:

Out of the total area of 1792.05 hac, 1267.55 hac. Area was under chil. Stock maps were prepared and pasted in the respective compartment history files. Site quality was determined by the ocular estimation and average quality of chil is II/III. Density was determined by the basal area method and varies from 0.3 to 0.6 with an average of 0.37. Natural regeneration is satisfactory. 115.64 hac area was allotted for natural regeneration.

7.9.3.1 Silviculture System:

Selection system was prescribed for chil working circle. The exploitable diameter was fixed 60 cmsdbh and the felling cycle was fixed 15 years.

7.9.3.2 Fire Protection :

1. Clearing of Fire lines : The roads and village paths in/near chil area have become natural fire lines and clearing of pine needles upto 5mt and 3 mt respectively were carried out continuously during fire season.

Creation of new fire lines : The resrve forest Khajoori needs effective fire protection measures. 5 mt wide fire line was suggested all along its compartments.

2. Construction of Gang huts: Gang huts are needed for the forest workers and staff during fire season to ensure availability of the staff in the close proximity of the forests. It was suggested to construct gang huts at following places:

   Khajoori, Tatiyana, Ghaton, Khalandon and Koti Bonch.

3. Modern Fire fightingequipments were suggested to be purchased and contol burning and other activities such as awareness programmes, meetings with peoples were suggested to be carried out.

7.9.3.3 Resin Tapping: Rill method was used all over the area. The tappable dbh was fixed 30cms and yield was fixed 3.211 kg/ tree/season.

7.9.3.4 Critical analysis: Annual yield was fixed 1000 cum asper the prescription of the working plan. But felling can not be carried out as prescribed due to ban on the green felling in the state. Only dead, dying, dry, uprooted trees were extracted through HPSFDC ltd. Resin tapping was carried out as per the prescription. Gang huts as prescribed in the working plan are not constructed.

7.9.4 The Coppice Working Circle :

This working circle includes two areas

1. Ban oak area (Coppice A type) = 8104.62 hac
2. Broad leaved area (Coppice B type) = 2300.30 hac.

The major portion of Coppice A type is covered with oaks. Some conifers also met with here and there. Whereas broadleavedtreesare more common in coppice B type. Main species are Chhal, Khair, Shisham, Sain, Eucalyptus etc.

7.9.4.1 Area statement : Rangewise area is as under :

Coppice A			
Name of Range	**Reserve Forest (hac.)**	**Protected Forest (hac.)**	**Total (hac.)**
Nohra	1833.9	--	1833.9
Shillai	2888.2	41.6	2929.8
Sangrah	1389.8	543.6	1933.4
Kaffota	443.22	--	443.22
Renuka	645.5	318.8	964.3
Total	7200.62	904.0	8104.62

Coppice B			
Name of Range	**Reserve Forest (hac.)**	**Protected Forest (hac.)**	**Total (hac.)**
Nohra	360.1	--	360.1
Kaffota	1790.3	--	1790.3
Renuka	149.9	--	149.9
Total	2300.3	--	2300.3

7.9.4.2 Felling Series : Two felling series namely oak and miscellaneous felling series were constituted. In both the felling series coppice with reserve system was followed.

7.9.4.3 Critical Analysis : Annual yield was regulated by area of the coupe. Sequence of felling was prescribed but felling can not be carried out as there was ban on the green felling in the state. Only dead, dying, dry, uprooted trees were extracted through HPSFDC ltd.

7.9.5The Rehabilitation Working Circle :

The area under this working circle is 10828.80 hac. This working circle includes all those areas which were prescribed earlier but could not be taken up for planting.

7.9.5.1 Rehabilitation Strategy:

1. Effective closure for about 10-15 years. Indigenous species should be preferred over exotics. A list of species with altitude zone is as below:
2. Choice of species wrt altitude is as follow:

Altitudinal Zone(mtr)	**Species Recommended**
Upto 750 mtr	Khair,Shisham,Kachnar,Semal, Shahtoot, Sain, Harar, Amla, Behra, Toon, Ritha, Neem,Daru, Darek, Jamun, Amaltas, Beul.
750-1600 mtr	Chil, Ohi, Beul, Amla, Drek.
1600-2500 mtr	Deodar, Kail, Walnut, Nirgal.

3. **Planting Programme :** The planting programmeis tabulated as below :

Table No. 7.17: Planting Programme.

Year	**Range**	**Name of forest**	**Compt. No.**	**Gross Area (hac.)**	**Approx. area to be planted(hac.)**
2001-02	Nohra	R-9 Bhangari	C1	42.90	10
	Sangrah	R-30 Dahar	C2	53.30	10
	Sri Renuka Ji	R-45 Ghaton	C22	58.50	5
		P-9 Cherag	C1	96.20	10
	Shillai	R-9 Jakandon	C4	58.50	20
		R-9 Jakandon	C6	76.70	25
		R-13 Bhatnol	C2	89.70	30
		R-16 Chyali	C1	30.20	10
		R-17 Balikoti	C6	37.70	15
	Kaffota	R-2 Tatiyana	C6	76.70	20
		R-3 Dhabpipli	C4	78	20
		R-3 DhabPipli	C6	46.80	10
		R-6 Janjhli	C6	197.95	25
		R-9 Sehbara	C1	77.47	20
		R-12 Gabar	C3	135.62	30
		R-14 Kather	C1	101.36	25
		P-1 Sherli Manpur	C1	61.10	25
				Total	**310.00**
2002-03	Nohra	R-9 Bhangari	C1	42.90	10.00
	Sangrah	R-30 Dahar	C3	48.10	20.00
	Sri Renuka Ji	R-45 Ghataun	C23	106.6	20.00
		P-9 Cherag	C1	96.20	10.00
	Shillai	R-6 Jakando	C3	67.60	20.00

		R-6 Jakando	C6	76.70	20.00
		R-13 Bhatnaul	C2	89.70	30.00
	Kaffota	R-16 Chyali	C3	36.40	30.00
		R-17 Balikoti	C8	63.70	20.00
		R-2 Tatiyana	C7	22.00	20.00
		R-4 Nigali	C4	118.47	20.00
		R-6 Janjli	C6	197.95	20.00
		R-9 Sehbara	C1	77.47	20.00
		R-12 Gabar	C3	135.62	25.00
		P-1 Sherli Manpur	C1	61.10	15.00
				Total:	**300.00**
2003-04	Nohra	R-9 Bhangari	C3	35.10	10.00
	Sangrah	R-30 Dahar	C4	36.40	15.00
	Sri Renuka Ji	R-45 Ghataun	C23	106.60	15.00
		P-9 Cherag	C2	57.20	5.00
	Shillai	R-9 Jhakando	C2	78.60	20.00
		R-9 Jhakando	C6	76.70	15.00
		R-3 Bhatnaul	C2	89.70	25.00
		R-5 Milla	C3	75.40	40.00
		R-17 Balikoti	C7	37.70	35.00
	Kaffota	R-2 Tatiyana	C6	76.70	25.00
		R-5 Nigali	C4	118.47	40.00
		R-5 Janjli	C6	197.95	30.00
		R-12 Gabar	C5	81.40	30.00
		R-14 Kather	C1	104.36	25.00
		P-1 Sherli Manpur	C2	65.00	20.00
		P-1 Jamna Pabar	C10	35.10	10.00
				total	**360.00**
2004-05	Nohra	R-9 Bhangari	C3	35.10	10.00
	Sangrah	R-37 Gehal	C3	81.90	25.00
	Sri Renuka Ji	R-47 Charighati	C1	52.00	25.00
		P-9 Cherag	C2	57.20	5.00
	Shillai	R-9 Jhakando	C2	78.60	25.00
		R-16 Loja	C1	66.50	29.00
		R-13 Bhatnaul	C3	44.51	21.00
		R-16 Chayali	C1	30.20	20.00
		R-17 Balikoti	C12	19.50	5.00
	Kaffota	R-2 Tatiyana	C10	48.40	30.00
		R-5 Nigali	C4	118.47	20.00
		R-6 Janjli	C6	197.95	20.00
		R-9 Sehbara	C2	76.77	20.00
		R-12 Gabar	C5	81.40	20.00
		R-14 Kather	C3	89.04	25.00
		P-1 Sherli Manpur	C2	65.00	15.00
				Total	**315.00**
2005-06	Nohra	R-11 Garari	C5	11.70	5.00

		R-11 Garari	C6	48.10	10.00
	Sangrah	R-37 Gehal	C3	81.90	25.00
	Sri Renuka Ji	R-47 Charighati	C1	52.00	15.00
	Shillai	R-8 Kharkan	C11	42.20	20.00
		R-10 Loja	C2	29.30	10.00
		R-13 Bhatnaul	C4	55.90	25.00
		R-16 Chyali	C2	55.60	30.00
		R-17 Balikoti	C13	46.80	20.00
	Kaffota	R-2 Tatiyana	C10	49.40	20.00
		R-5 Nigali	C4	118.47	20.00
		R-6 Janjli	C6	197.95	20.00
		R-9 Sehbara	C3	38.60	30.00
		R-12 Gabar	C5	81.40	20.00
		R-14 Kather	C3	89.04	25.00
		P-1 Sherli Manpur	C2	65.00	10.00
				Total	**325.00**
2006-07	Nohra	R-11 Garari	C6	48.10	20.00
		R-11 Garari	C7	23.40	2.00
	Sangrah	R-37 Gehal	C4	139.10	25.00
	Sri Renuka Ji	R-47 Charighati	C2	35.10	13.00
		P-9 Cherag	C4	85.80	20.00
	Shillai	R-8 Kharkan	C9	106.60	25.00
		R-10 Loja	C4	30.10	20.00
		R-13 Bhatnaul	C4	55.90	30.00
		R-16 Chyali	C3	36.40	15.00
		R-17 Balikoti	C14	59.40	10.00
		R-17 Balikoti	C15	27.30	10.00
	Kaffota	R-2 Tatiyana	C15	48.10	15.00
		R-5 Nigali	C5	65.40	20.00
		R-6 Janjli	C6	197.95	20.00
		R-9 Sehbara	C2	76.70	25.00
		R-9 Sehbara	C4	58.88	25.00
		R-13 Sakhauli	C1	236.43	15.00
		P-1 Sherli -Manpur	C3	48.00	10.00
				Total	**320.00**
2007-08	Nohra	R-11 Garari	C6	48.10	10.00
		R-11 Garari	C7	23.40	10.00
	Sangrah	R-37 Gehal	C4	139.10	25.00
		R-5 Arawali	C3	48.10	20.00
		R-10 Loja	C10	53.30	15.00
		R-13 Bhatnaul	C6	17.60	5.00
		R-16 Chyali	C4	62.40	20.00
		R-17 Balikoti	C16	46.80	20.00
	Kaffota	R-2 Tatiyana	C16	45.60	20.00

		R-5 Nigali	C5	65.40	20.00
		R-5 Janjli	C7	190.48	30.00
		R-9 Sehbara	C4	58.88	20.00
		R-13 Sakhauli	C1	236.43	30.00
		P-1 Sherli -Manpur	C3	48.00	30.00
		R-14 Kather	C4	178.78	20.00
	Sri Renuka Ji	P-9 Cherag	C4	85.40	20.00
				Total	**315.00**
2008-09	Nohra	R-12 Punnar		53.7	10.00
	Sangrah	R-37 Gehal	C4	139.10	25.00
	Shillai	R-8 Kharkan	C1	84.50	25.00
		R-12 Nao Panjore	C1	32.20	16.00
		R-14 Siri kiyari	C1	67.60	20.00
		R-16 Chyali	C5	53.30	20.00
		R-17 Bali Koti	C17	75.40	25.00
	Kaffota	R-2 Tatiyana	C17	19.50	10.00
		R-2 Tatiyana	C19	49.50	10.00
		R-5 Nigali	C6	64.90	30.00
		R-6 Janjli	C6	197.95	15.00
		R-6 Janjli	C7	190.48	20.00
		R-11 Manal	C1	67.67	25.00
		R-13 Sakhauli	C1	236.43	20.00
		R-15 Chandni	C1	166.00	20.00
	Sri Renuka Ji	P-9 Cherag	C4	85.80	10.00
				Total	**301.00**
2009-10	Nohra	R-16 Gatlog	C6	45.50	25.00
	Sangrah	R-37 Gehal	C4	139.10	25.00
	Shillai	R-8 Kharkan	C1	84.50	25.00
		R-1 Loja	C10	53.30	10.00
		R-14 Siri Kiyari	C1	67.60	20.00
		R-16 Chiyali	C6	45.50	15.00
		R-17 Balikoti	C17	75.40	15.00
	Kaffota	R-2 Tatiyana	C20	33.80	15.00
		R-5 Nigali	C6	64.90	20.00
		R-7 Salag	C4	230.80	30.00
		R-10 Manal	C1	67.67	30.00
		R-13 Sakhauli	C1	236.43	20.00
		R-15 Chandni	C1	166.00	30.00
		P-1 Sherli –Manpur	C5	35.00	20.00
	Sri Renuka Ji	P-9 Cherag	C6	21.55	5.00
		P-10 Chow -Bhogar	C7	67.60	15.00
				Total	**320.00**
2010-11	Nohra	R-16 Gatlog	C6	45.50	15.00
	Sangrah	R-37 Gehal	C4	139.10	25.00
	Shillai	R-8 Kharkan	C1	84.50	15.00
		R-12 Nao Panjore	C7	26.00	10.00
		R-14 Shiri kiyari	C2	89.70	20.00

		R-16 Chayali	C7	53.30	20.00
	Kaffota	R-2 Tatiyana	C4	45.50	25.00
		R-6 Shiva	C1	66.81	20.00
		R-7 Salag	C4	230.80	30.00
		R-11 Manal	C2	76.46	25.00
		R-13Sakhauli	C1	236.43	20.00
		R-15 Chandni	C2	148.40	30.00
		P-1 Sherli Manpur	C5	35.10	15.00
	Sri Renuka Ji	P-10 Chow Bhogar	C6	63.70	10.00
				Total	**280.00**
2011-12	Nohra	R-17 Kuffar-Kaira	C3	57.20	5.00
	Sangrah	R-37 Gehal	C4	139.10	25.00
	Shillai	R-8 Kharkan	C2	87.10	25.00
		R-14 Shiri Kiyari	C3	70.30	20.00
		R-16 Chyali	C3	44.20	20.00
	Kaffota	R-2 Tatiyana	C6	76.70	30.00
		R-5 Shiva	C1	66.81	30.00
		R-7 Salag	C4	230.80	50.00
		R-11 Manal	C2	76.46	25.00
		R-13 Sakhauli	C2	159.61	30.00
		P-2 Jamna-Pabar	C7	55.90	20.00
	Sri Renuka Ji	P-10 Chho-Bhogar	C6	63.70	20.00
				Total	**300.00**
2012-13	Nohra	R-18 Gawahi	C2	61.10	15.00
		R-18 Gawahi	C4	23.40	10.00
		P-2 Deva Manal	C3	44.20	5.00
	Sangrah	R-37 Gehal	C5	46.80	20.00
	Shillai	R-8 Kharkan	C2	87.10	20.00
		R-13 Bhatnaul	C1	165.10	30.00
		R-14 Shri Kiyari	C5	39.00	25.00
		R-16 Chyali	C9	19.20	5.00
		R-17 Bali -Koti	C15	27.30	10.00
	Kaffota	R-3 DhabPipli	C3	62.30	10.00
		R-5 Shiva	C2	52.82	10.00
		R-7 Salag	C4	230.80	25.00
		R-11 Manal	C2	76.46	25.00
		R-13 Sakhauli	C2	159.61	20.00
		R-15 Chandni	C2	148.40	20.00
	Sri Renuka Ji	P-10 Chow Bhogar	C6	63.70	20.00
				Total	**270.00**
2013-14	Nohra	R-19 Jamal Nihog	C2	49.40	10.00
		R-23 Chunvi	C5	85.80	15.00
	Shillai	R-8 Kharkan	C6	67.60	20.00
		R-13 Bhatnaul	C1	165.10	30.00
		R-14 Shri -Kiyari	C5	39.00	20.00
		R-17 Bali-Koti	C2	32.50	20.00

	Kaffota	R-Tatiyana	C6	76.70	20.00
		R-3 DhabPipli	C2	62.30	25.00
		R-5 Shiva	C2	52.82	20.00
		R-7 Salag	C5	146.82	30.00
		R-11 Manal	C4	26.75	10.00
		R-13 Sakhauli	C3	149.40	30.00
		R-15 Chandni	C2	148.40	20.00
		P-2 Jamna Pabar	C8	97.50	25.00
	Sri Renuka Ji	P-10 Chow Boghar	C8	55.90	10.00
				Total	**305.00**

Plantation done during the the working plan period is as under:

Table No. 7.18: Plantation done during the period of working Plan.

Year	Name of Scheme	Nos. of Plants Planted	Name of Range	Name of Forest	Area in ha.
2001-02	102(01) Pasture Of grazing improvement scheme	3510	Kaffota	R.F. Tatiyana	5
	102(04)Aff. Scheme (ii) New Planting (SCP)	5500	Kaffota	Gabbar	5
	102(06)(CSS) M.P.	6600	Kaffota	Dhang Rohana	6
	102(06)SCP M.P.	4400	Kaffota	RF Janjli	4
	16(C)90 FPR Y.F.J. Aff.	16000	Kaffota	Khatwar	20
	16(C)90 FPR Y.F.J. Aff.	16000	Kaffota	P.F Pamta	20
	16(C)90 FPR Y.F.J. Aff.	2000	Kaffota	Khatwar	10
	16(C)90 FPR Y.F.J. Aff.	16000	Kaffota	PF Jamuna	20
	16(C)90 FPR Y.F.J. Aff.	8000	Kaffota	PF Jamuna C-7	10
	16(C)90 FPR Y.F.J. Aff.	12000	Kaffota	P.F. Jamuna	15
	16(C)90 FPR Y.F.J. Aff.	7100	Kaffota	Jamuna C-6	5
	BASP	9000	Kaffota	Kanti Shamlat	6
	102(01) Pature Of grazing improvement schame	2000	Nohra	Begra	5
	102(04)Aff. Scheme (ii) New Planting (SCP)	5500	Nohra	Jamal Nihog	5
	102(06)(CSS) M.P.	6050	Nohra	Gatlog	5.5
	102(06)(CSS) M.P.	6050	Nohra	RF Charna	5.5
	102(06)State M.P	7150	Nohra	RF Charna	6.5
	102(06)State M.P	7150	Nohra	Kufer Kaira	6.5
	102(06)SCP M.P.	5720	Nohra	RF Choras	5.2
	2402-102- SCP	2200	Nohra	R.F. Manal	2
	BASP	19620	Nohra	Kheri Bandal	13

	102(01)Pasture Grazing improvement	5000	Renuka ji	parara	5
	102(04)Aff. Scheme (i) Camp of Adv. Work	5500	Renuka ji	Nakhalna	5
	102(04)Aff. Scheme (i) Camp of Adv. Work	5500	Renuka ji	Bandal	5
	102(04)Aff. Scheme (i) Camp of Adv. Work	5500	Renuka ji	Charog	5
	102(04)Aff. Scheme (i) Camp of Adv. Work	2200	Renuka ji	Parara	2
	102-(06)(CSS) Natural Regeneration	2000	Renuka ji	R.F. Cherghat	8
	102-(06)(CSS) Natural Regeneration	625	Renuka ji	R.F. Cherghat	2.5
	102(06)(CSS) M.P.	3215	Renuka ji	Swar	3
	102(06)SCP M.P.	5720	Renuka ji	Khala Kiar	5.2
	2402-102- SCP	2750	Renuka ji	Kandon	2.5
	BASP	18000	Renuka ji	DrabalShamlat	12
	BASP	4500	Renuka ji	KotiyanShamlat	3
	102(04)Aff. Scheme (i) Camp of Adv. Work	7700	Sangrah	Jabrog	7
	102(01) Enrechment Planting	4400	Sangrah	Dada Khilar	4
	102(01) Enrechment Planting	1100	Sangrah	Begrath	1
	102-(06)(CSS) Natural Regeneration	1000	Sangrah	Lazwa	5
	102(06)(CSS) M.P.	6600	Sangrah	Mandoli	6
	102(06)(CSS) M.P.	2200	Sangrah	khalor	2
	102(06)CSS Pasture Dev.	2400	Sangrah	Panjah	6
	102(06)CSS Pasture Dev.	2200	Sangrah	Khilor	2
	102(06)SCP M.P.	3300	Sangrah	Raicha	3
	102(06)SCP M.P.	2200	Sangrah	Begrath	2.2
	2402-102- SCP	3300	Sangrah	Jabrog ii	3
	2402-102- SCP	1100	Sangrah	Degrath	1
	BASP	11250	Sangrah	Bhallar	7.5
	BASP	5250	Sangrah	Gajwa	3.5
	102(01)Pasture Grazing improvement	2500	Shillai	Baralari	5
	102(01) Enrechment Planting	2100	Shillai	Chiyali	3

	102-(06)(CSS) Natural Regeneration	1600	Shillai	Bhatnol	8
	102-(06)(CSS) Natural Regeneration	850	Shillai	Bhatnol	2.5
	102(06)CSS Pasture Dev.	1600	Shillai	Bhatnol	4
	102(06)CSS Pasture Dev.	7500	Shillai	Hallan	7.2
	102(06)State M.P	5500	Shillai	Bindla	5
	102(06)SCP M.P.	4400	Shillai	BindlaShamlat	4
	2402-102- SCP	3300	Shillai	R.F. Bhatnol C-1	3
	BASP	4500	Shillai	RF JarwaJunali	3
	BASP	12000	Shillai	R.F. Dehar	8
	BASP	1000	Shillai	R.F. Dehar	2.5
		328910		**G. Total**	**346.80**
2002-03	102-(01)Scheme Dev. of Pasture	1000	Kaffota	R.F. Tatiyana	2
	102-(04) Improvement of Tree Cover Inrechemtn Planting (N) (SCP)	2200	Kaffota	RF Janjli C-4	2
	102-(04) Improvement of Tree Cover Inrechemtn Planting (N) (SCP)	4400	Kaffota	RF Gabbar	4
	102-(04) Improvement of Tree Cover Inrechemtn Planting (N) (SCP)	4400	Kaffota	RF Tatiyana	4
	102-(04) Improvement of Tree Cover Inrechemtn Planting (N) (SCP)	2200	Kaffota	RF Janjli-C1	2
	800(06)SVY (N)	6600	Kaffota	RF Sataun	6
	16(C)19 MMP (FPR)	4000	Kaffota	PF Pamta	10
	16(C)19 MMP (FPR)	7000	Kaffota	Katwar	10
	16(C)19 MMP (FPR)	6800	Kaffota	PF Jamna	10
	16(C)19 MMP (FPR)	8000	Kaffota	Pabor Shamlat	10
	102-(04) Improvement of Tree Cover, Aff New (NS)	1750	Kaffota	Bag	1.5
	800(06)SVY (N)	5950	Kaffota	RF Kather	3.5
	102-(01)Scheme Dev. of Pasture	2600	Nohra	RF Choras	4
	102-(04) Improvement of Tree Cover, Aff New (NS)	13000	Nohra	Begra	10
	2402-102(12)Soil (SC)	4400	Nohra	PunnerShamlat	4
	800(06)SVY (N)	16500	Nohra	ChunviShamlat	11

	102-(04) Improvement of Tree Cover, Aff New (NS)	5500	Renuka ji	Chhowbogar C-2	5
	102-(04) Improvement of Tree Cover, Aff New (NS)	5500	Renuka ji	Chhowbogar C-2	5
	102-(04) Improvement of Tree Cover Inrechemtn Planting (N) (SCP)	8000	Renuka ji	Thana-Khegna	10
	102-(04) Improvement of Tree Cover Inrechemtn Planting (N) (SCP)	1600	Renuka ji	RF Chhowbogar	2
	2402-102(12)Soil (SC)	4400	Renuka ji	Thana-Khegna	4
	800(06)SVY (N) (SC)	12000	Renuka ji	GhatonShamlat	8
	102-(01)Scheme Dev. of Pasture	2000	Sangrah	P.F. Punrow	4
	102-(04) Improvement of Tree Cover, Aff New (NS)	5500	Sangrah	PF Dada	5
	102-(04) Improvement of Tree Cover, Aff New (NS)	5500	Sangrah	Mandoli	5
	2402-102(12)Soil (SC)	3300	Sangrah	Uncha Tikker	3
	800(06)SVY (N)	7500	Sangrah	Tehri Shamlat	5
	102-(01)Scheme Dev. of Pasture	2500	Shillai	Siri Kiari	5
	102-(01)Scheme Dev. of Pasture	2500	Shillai	Loza Shamlat	5
	102-(04) Improvement of Tree Cover Inrechemtn Planting (N)	4400	Shillai	Bhatnol	4
	2402-102(12)Soil (SC)	2400	Shillai	RF Shri-Kari-C4	3
	800(06)SVY (N)	12000	Shillai	BhatnolShamlat	8
		175400		**G.Total**	**175**
2003-04	102-01-DEV &Parsture Grazing	2000	Kaffota	R.F. Khajuri C-13	5
	102(04) Improvement of Tree cover and Planting Aff. (N)	5500	Kaffota	R.F Salog C-3	5
	102(04) Improvement of Tree cover and Planting Aff. (N)	5500	Kaffota	R.F. Kathor C-4	5
	102(12) Soil (SCCP)	5000	Kaffota	R.F Tatiyana	4.9
	102-01-DEV &Parsture Grazing	2500	Nohra	R.F. Bhog	5

	102(04) Improvement of Tree cover and Planting Aff. (N)	5500	Nohra	R.F. Bhangari	5
	102(04) Re-Aff Of Scrub Area	5500	Nohra	R.F. Kuffar Kaira	5
	102(12) Soil (SCCP)	5500	Nohra	R.F. Ghanduri	5
	102-01-DEV &Parsture Grazing	4000	Renuka ji	P.F. Charag C-3	10
	102(04) Improvement of Tree cover and Planting Aff. (N)	5500	Renuka ji	R.F Khegwa C-1	5
	101-05-CA	1500	Renuka ji	R.F Thana Khegwa C-2	1
	Afforestration (SCCP)	5500	Renuka ji	Chhow Bogar C-2	5
	102(04) Improvement of Tree cover and Enrichment Planting (N)	4000	Renuka ji	R.F. Chhow Bogar C-2	5
	102(04) Re-Aff Of Scrub Area	5500	Renuka ji	R.F Chari ghati C-4	5
	102-01-DEV &Parsture Grazing	2500	Sangrah	P.F. Dada	5
	102-01-DEV &Parsture Grazing	2500	Sangrah	R.F. UnchaTiikkar	5
	102(04) Improvement of Tree cover and Planting Aff. (N)	5500	Sangrah	R.F Thain	5
	102-01-DEV &Parsture Grazing	2200	Shillai	R.F. Siri Kiyari	5
	102-01-DEV &Parsture Grazing	2500	Shillai	R.F. Loza C-1	5
	102(04) Improvement of Tree cover and Planting Aff. (N)	5500	Shillai	R.F. Kota pab C-3	5
	102(04) Improvement of Tree cover and Planting Aff. (N)	5500	Shillai	R.F. Balli Koti C-10	5
	102(04) Improvement of Tree cover and Enrichment Planting (N)	3850	Shillai	R.F. milla C3	5
	102(04) Improvement of Tree cover and Enrichment Planting (N)	5500	Shillai	R.F. Loza C-1	5

	102(04) (SCCP) Enrichment Planting	3750	Shillai	R.F. Khatna C-9	5
		102300		**G. Total**	**120.9**
2004-05	Enrichment Planting 102(04) New Planting(Soon)	2400	Kaffota	R.F. Manal C3	3
	Enrichment Planting 102(04) New Planting(Soon)	1600	Kaffota	P.F. Jamna C8	2
	Enrichment Planting 102(04) New Planting(Soon)	2400	Kaffota	R.F Gabber C4	3
	Enrichment Planting 102(04) New Planting(Soon)	1600	Kaffota	R.F Tatiyana	2
	Deman No 15-2406-01-102-18 BASP.	5500	Nohra	R.F Garari	5
	Deman No 15-2406-01-102-18 BASP.	5500	Nohra	R.F Gatlog	5
	Improvement of Tree Cover 102(04)Soon New Aff.	6600	Nohra	R.F. Bhangari	6
	102 (04) Improvement of Tree cover	5500	Nohra	R.F. Chunvi	5
	102(ii) soon ODA Assitance Forestry	6600	Renuka ji	Govt Shamlat Land Lohara Tikry	10
	Enrichment Planting 102(04) New Planting(Soon)	1800	Renuka ji	R.F. Ghaton	3.3
	Improvement of Tree Cover 102(04)Soon New Aff.	3300	Renuka ji	R.F Ghatom	3
	102(04) New Aff. Scrub Area Soon Plan.	5500	Renuka ji	R.F. Charighat C5	5
	102(ii) soon ODA Assitance Forestry	11800	Sangrah	BorliShamlat	10
	Improvement of Tree Cover 102(04)Soon New Aff.	6600	Sangrah	R.F Bhaller C3	6
	102(04) Soon Enrichment Planting Tree cover Plan.	4000	Sangrah	R.F UnchaTikkar C-4	5
	102(12) Soil Plan	11000	Shillai	R.F. Lani Borar	10

	Improvement of Tree Cover 102(04)Soon New Aff.	11000	Shillai	R.F Kharkhan C3	10
	Improvement of Tree Cover 102(04)Soon New Aff.	5500	Shillai	R.F. Kota Pab C3	5
		98200		**G.Total**	**98.3**
2005-06	102(01)Pasture Grazing Land Imp(New Plantation)	2500	Kaffota	R.F Khajuri C16	5
	102(01)Pasture Grazing Land Imp(New Plantation)	1500	Kaffota	R.F Janjli C1	3
	102-12-Soon Protective Aff. Soil Plan	3600	Kaffota	R.F. Khajuri C-10	3.6
	16-C-90 N-Soil Plan 2402-Soil FPR Adv. Work	24000	Kaffota	R.F. Sataun C-1	30
	16-C-90 N-Soil Plan 2402-Soil FPR Adv. Work	6000	Kaffota	R.F. Sataun C-1	27
	102-04-Soon Devlopment of Tree Cover Planting Normal	5500	Kaffota	RF Chandaui	5
	102-04-Soon Devlopment of Tree Cover Planting Normal	5500	Kaffota	RF Jamna C-3	5
	102-04 Enreachment Planting (Normal)	2400	Kaffota	RF Tatiyana-C-10	3
	102-04 Enreachment Planting (Normal)	1600	Kaffota	RF Dhab - Pipli C-5	2
	102-04 Enreachment Planting (Normal)	1600	Kaffota	RF Khajuri C-3	2
	102-04 Enreachment Planting (Normal)	4000	Kaffota	RF Salog	5
	102-04- Scrub Area New (Normal)P	4400	Kaffota	RF Shiva C-5	4
	102-01 Parsture Grazing Land Imp. (New Plantation)	1200	Nohra	R.F. Gallog	3
	102-04-Soon Tree Cover Planting	5500	Nohra	BhararíShamlat	5
	16-C-90 N-Soil Plan 2402-Soil FPR Adv. Work	17000	Nohra	Deva - Manal	44
	102-04 Enreachment Planting (Normal)	5500	Nohra	RF Tonderwala	5

	102-04 Enreachment Planting (Normal)	5500	Nohra	Kufter Khera	5
	102-04- Scrub Area New (Normal)P	4400	Nohra	RF Pipli	4
	102-12-Soon Protective Aff. Soil Plan	5500	Nohra	RF Garari	5
	102-04-Soon Tree Cover Planting	11000	Nohra	RF Sail	10
	102(01)Pasture Grazing Land Imp(New Plantation)	1200	Nohra	R.F Gatlog	3
	102(01)Pasture Grazing Land Imp(New Plantation)	1500	Renuka ji	R.F C2 Thana Khegwa	3
	102-04-Soon Devlopment of Tree Cover Planting Normal	11000	Renuka ji	Ghauto RF C-22	10
	102-04-Soon Devlopment of Tree Cover Planting Normal	5500	Renuka ji	Chou-Bogar	5
	102-04-Soon Devlopment of Tree Cover Planting Normal	11000	Renuka ji	Ghauto RF C-9	10
	102-04 Enreachment Planting (Normal)	3200	Renuka ji	PF Chou-Bogar C-9	4
	102-04 Enreachment Planting (Normal)	3200	Renuka ji	Charighati	4
	102-04- Scrub Area New (Normal)P	4400	Renuka ji	RF Charighati	4
	102-12-Soon Protective Aff. Soil Plan	5500	Renuka ji	RF Chou Bogar	5
	102-11-Oda Plan (Soon)	6600	Renuka ji	Lohara Tikri	10
	102(01)Pasture Grazing Land Imp(New Plantation)	1500	Sangrah	R.F. Uncha Tikker	3
	102-04 Enreachment Planting (Normal)	5600	Sangrah	RF Lajwa	7
	102-04 Enreachment(SC) Plan	12000	Sangrah	P.F. Thain	15
	102-04- Scrub Area New (Normal)	4400	Sangrah	Uncha Tikker	4
	102-11-Oda Plan (Soon)	6600	Sangrah	PF Mashoor	10
	102(01)Pasture Grazing Land Imp(New Plantation)	2500	Shillai	R.F Zakando	3
	102-12-Soon Protective Aff. Soil Plan	5500	Shillai	Kinu-Panog	5

	16-C-90 N-Soil Plan 2402-Soil FPR Adv. Work	3000	Shillai	Koti Bounch	10
	102-04-Soon Devlopment of Tree Cover Planting Normal	5500	Shillai	Dehar	5
	102-04-Soon Devlopment of Tree Cover Planting Normal	5500	Shillai	Shiri kairy	5
	102-04-Soon Devlopment of Tree Cover Planting Normal	5500	Shillai	RF Kairy	5
	102-04 Enreachment Planting (Normal)	3200	Shillai	R.F. Jarwa	4
	102-04 Enreachment Planting (Normal)	3200	Shillai	RF Loza	4
	102-04- Scrub Area New (Normal)	4400	Shillai	RF Bhatnol	4
		239700		**G.Total**	**317.6**
2006-07	2406-102-01-Pasture Grazing Land Improvement Normal	1000	Kaffota	R.F. Gabbar C-4	3
	2406-102-04-Improvement of tree cover Aff.(N)	5500	Kaffota	R.F. Nigali C-2	5
	2406-102-04-Improvement of tree cover Aff.(N)	7000	Kaffota	R.F. Janjali C-3	8
	2406-102-04-Improvement of tree cover Aff.(N)	5500	Kaffota	R.F. Gabbar C-2	5
	2406-102-04-Improvement of tree cover Aff.(SC)	5500	Kaffota	P.F. Sharli	5
	2406-102-04-Improvement of tree cover2-II-Enrichment Plantation (N)	8000	Kaffota	R.F. Tatiyana C-8	10
	2406-102-04- of tree cover 2-III-Re. App. Of Scrub Area normal	5500	Kaffota	R.F. Khajuri C-1	5
	2402-Soil conservation Plan 102(12)Soon Protect	4400	Kaffota	R.F. DhabPipli	4
	16-C-90-Macro Management FPR Schheme	6600	Kaffota	R.F. Sataun C-1	5
	16-C-90-Macro Management FPR Schheme	10000	Kaffota	R.F. Sataun C-1	20

	16-C-90-Macro Management FPR Schheme	10000	Kaffota	R.F. Sataun C-1	20
	16-C-90-Macro Management FPR Schheme	7500	Kaffota	R.F. Sataun C-1	15
	16-C-90-Macro Management FPR Schheme	1800	Kaffota	R.F. Sataun C-1	9
	16-C-90-Macro Management FPR Schheme	10000	Kaffota	R.F. Sataun C-2	20
	2406-102-04-Improvement of tree cover Aff.(N)	6600	Nohra	R.F. Gatlog	6
	2406-102-04-Improvement of tree cover Aff.(N)	6600	Nohra	R.F. Chunvi C-1	6
	2406-102-04-Improvement of tree cover Aff.(N)	6600	Nohra	R.F. Gatlog C-1	6
	2406-102-04-Improvement of tree cover Aff.(SC)	5500	Nohra	R.F. Charana	5
	2406-102-04-Improvement of tree cover2-II-Enrichment Plantation (N)	4000	Nohra	R.F. Garari C-1	5
	2406-102-04-Improvement of tree cover2-II-Enrichment Plantation (N)	4000	Nohra	R.F. Anu Koti C-II	5
	2406-102-01-Pasture Grazing Land Improvement Normal	1200	Nohra	R.F. Choras	3
	2406-102-04- of tree cover 2-III-Re. App. Of Scrub Area normal	5500	Nohra	R.F. Pipli	5
	2402-Soil conservation Plan 102(12)Soon Protect	6000	Nohra	R.F. Bhog	4
	16-C-90-Macro Management FPR Schheme	9000	Nohra	P.F. Devamanal	15
	16-C-90-Macro Management FPR Schheme	6050	Nohra	Devana Waste land	13

	16-C-90-Macro Management FPR Schheme	9000	Nohra	P.F. Devamanal	14
	16-C-90-Macro Management FPR Schheme	3500	Nohra	Devana Waste land	14
	2406-102-01-Pasture Grazing Land Improvement Normal	1600	Renuka ji	Charighati R.F. C-4	4
	2406-102-04-Improvement of tree cover Aff.(N)	13200	Renuka ji	R.F. Choo Bhogar C1	12
	2406-102-04-Improvement of tree cover Aff.(N)	5500	Renuka ji	R.F. Charag C-2	5
	2406-102-04-Improvement of tree cover2-II-Enrichment Plantation (N)	3525	Renuka ji	R.F.Ghanu	5
	2406-102-04-Improvement of tree cover2-II-Enrichment Plantation (N)	3020	Renuka ji	R.F. NehlaGawahi	5
	2406-102-04-Improvement of tree cover2-II-Enrichment Plantation (SC)	4200	Renuka ji	R.F. Chari Gathi C-2	7
	2406-102-04- of tree cover 2-III-Re. App. Of Scrub Area normal	5500	Renuka ji	Sawar Shamlat	5
	2402-Soil conservation Plan 102(12)Soon Protect	5500	Renuka ji	R.F.Charag C-3	5
	DFID 102(II) Soon ODA Minor Work Aff.	6600	Renuka ji	Lohara Tikrishamlat	10
	2406-102-01-Pasture Grazing Land Improvement Normal	1800	Sangrah	R.F. Gatamadwach	3
	2406-102-04-Improvement of tree cover Aff.(N)	11000	Sangrah	R.F. Thain	10
	2406-102-04-Improvement of tree cover Aff.(N)	8800	Sangrah	R.F. Ucha Tikker	8
	2406-102-04-Improvement of tree cover Aff.(SC)	2200	Sangrah	P.F. Thain	2
	2406-102-04-Improvement of tree cover2-II-Enrichment Plantation (N)	8000	Sangrah	R.F. Gatamadwach	10

	2406-102-04- of tree cover 2-III-Re. App. Of Scrub Area normal	7500	Sangrah	R.F. Arat	5
	2402-Soil conservation Plan 102(12)Soon Protect	4400	Sangrah	P.F.Mashoor	4
	2402-12 Soil conservation Plan 102(12)Soon Protective Soil Plan (SC)	5000	Sangrah	R.F. Bhallar	4.06
	DFID 102(II) Soon ODA Minor Work Aff.	5500	Sangrah	Redli Shamlat	5
	DFID 102(II) Soon ODA Minor Work Aff.	10500	Sangrah	PF Mashoor	5
	2406-102-01-Pasture Grazing Land Improvement Normal	2400	Shillai	R.F. Shri Kiari	3
	2406-102-04-Improvement of tree cover Aff.(N)	8800	Shillai	R.F. Jasvi C-2	8
	2406-102-04-Improvement of tree cover Aff.(N)	5500	Shillai	R.F. Jhakndo C-7	5
	2406-102-04-Improvement of tree cover Aff.(N)	5500	Shillai	R.F. Shri Kiari C-5	5
	2406-102-04-Improvement of tree cover2-II-Enrichment Plantation (N)	3500	Shillai	R.F. Manal C8	5
	2406-102-04-Improvement of tree cover2-II-Enrichment Plantation (N)	4000	Shillai	R.F. Bhatnoal C-1	5
	2406-102-04-Improvement of tree cover2-II-Enrichment Plantation (SC)	2400	Shillai	R.F. Bhatnoal C-1	3
	2406-102-04- of tree cover 2-III-Re. App. Of Scrub Area normal	7500	Shillai	R.F. Kinu Panog C-3	5
	2402-Soil conservation Plan 102(12)Soon Protect	4400	Shillai	R.F. Khatana C-9	4
	16-C-90-Macro Management FPR Scheme	10000	Shillai	R.F. Khalando	20
	16-C-90-Macro Management FPR Schheme	6500	Shillai	R.F. Koti Bhonch	13

	16-C-90-Macro Management FPR Scheme	2000	Shillai	R.F. Khalando	4
	16-C-90-Macro Management FPR Schheme	2000	Shillai	R.F. Koti Bhonch C-4	6
	16-C-90-Macro Management FPR Schheme	3600	Shillai	R.F. Khalando C-3	9
	16-C-90-Macro Management FPR Schheme	8000	Shillai	R.F. Koti Bhonch C-4	16
	16-C-90-Macro Management FPR Schheme	8500	Shillai	R.F. Koti Bhonch C-5	17
	Total	**359795**			**477.06**
2007-08	102-(01) Pasture Grazing Land	1000	Shillai	R.F. Manal C-3	2
	102-(01) Pasture Grazing Land	750	Kaffota	R.F. Tatiyana	1.5
	102(04) Imp. of Tree Cover Aff. (N)	2200	Kaffota	R.F. Chandani C-3	2
	102(04) Imp. of Tree Cover Aff. (N)	2200	Kaffota	R.F. Janjali C-4	2
	102(04) Imp. of Tree Cover Aff. (N)	2200	Kaffota	R.F. Gabber C-4	2
	102(04) Imp. of Tree Cover Aff. (N)	2200	Kaffota	R.F. Nigali C-3	2
	102(04) Imp. of Tree Cover Enrichment Plantation. (N)	3200	Kaffota	R.F. Jamna	4
	102(04) Imp. of Tree Cover 2-II-Re. App. of Scrub Areanormal	3300	Kaffota	R.F. Khajuri C-5	3
	102-31-Maint./ Preservation of Forest (TFC)	seed sowing	Kaffota	P.F. Jamna	5
	16-C-90-Macro Management FPR Scheme	1000	Kaffota	R.F. Satun C-1	5
	16-C-90-Macro Management FPR Scheme	10400	Kaffota	R.F. Satun C-1	13
	16-C-90-Macro Management FPR Scheme	4500	Kaffota	R.F. Satun C-1	9

	16-C-90-Macro Management FPR Scheme	16000	Kaffota	R.F. Satun C-2	20
	16-C-90-Macro Management FPR Scheme	6000	Kaffota	R.F. Satun C-7	20
	102-(01) Pasture Grazing Land	1200	Nohra	R.F. Pipli	1.5
	102(04) Imp. of Tree Cover Aff. (N)	5500	Nohra	R.F. Kufar-Kaira	5
	102(04) Imp. of Tree Cover Aff. (N)	3300	Nohra	R.F. Sail	3
	102(04) Imp. of Tree Cover 2-II- Enrichment Plantation(N)	3200	Nohra	R.F. Charna	4
	102(04) Imp. of Tree Cover 2-II-Re. App. of Scrub Areanormal	3300	Nohra	R.F. Sail	3
	800-06 Sanjhi Van Yojna	5500	Nohra	R.F. Bhangari	5
	16-C-90-Macro Management FPR Scheme	9000	Nohra	P.F. Devamanal	15
	16-C-90-Macro Management FPR Scheme	7500	Nohra	P.F. Devamanal	16
	16-C-90-Macro Management FPR Scheme	7500	Nohra	Devna Waste Land	21
	102-(01) Pasture Grazing Land	800	Renuka ji	P.F. Chho-Bhogar C-6	2
	102(04) Imp. of Tree Cover Aff. (N)	4400	Renuka ji	R.F. Chari Gathi C-1	4
	102(04) Imp. of Tree Cover Aff. (N)	4400	Renuka ji	R.F. Chari Gathi C-3	4
	102(04) Imp. of Tree Cover 2-II- Enrichment Plantation(N)	3200	Renuka ji	P.F. Chho-Bhogar C-6	4
	102(04) Imp. of Tree Cover 2-II-Re. App. Of Scrub Areanormal	3300	Renuka ji	Dada-KheluShamlat	3
	2402-102-12 Soil conservation	3300	Renuka ji	Dada-KheluShamlat	3
	102-31-Maint./ Preservation of Forest (TFC)	800	Renuka ji	R.F. Chhow-Bhogar C-2	5
	102-(01) Pasture Grazing Land	1600	Sangrah	R.F. Bhallar	2

	102(04) Imp. of Tree Cover Aff. (N)	5500	Sangrah	P.F. Thain	5
	102 (04) Imp. Of Tree Cover Aff. SC	3300	Sangrah	P.F. Thain	3
	102(04) Imp. of Tree Cover 2-II- Enrichment Plantation(N)	3200	Sangrah	Ranfua-Jabrogshmt	4
	104-Enrichment	2000	Sangrah	Ranfua-Jabrogshmt	2.5
	102(04) Imp. of Tree Cover 2-II-Re. App. of Scrub Areanormal	1100	Sangrah	R.F. Bhallar	1
	2402-102-12 Soil conservation	4400	Sangrah	R.F. Bhallar	4
	102-31-Maint./ Preservation of Forest (TFC)	4200	Sangrah	P.F. Thain	5
	102-31-Maint./ Preservation of Forest (TFC)	4200	Sangrah	R.F. Bhallar	5
	102(04) Imp. of Tree Cover Aff. (N)	4400	Shillai	R.F. Bali-Koti C-16	4
	102(04) Imp. of Tree Cover Aff. (N)	4400	Shillai	R.F. Bhatnoal C-1	4
	102(04) Imp. of Tree Cover 2-II- Enrichment Plantation(N)	3200	Shillai	R.F. Milla C-1	4
	102(04) Imp. of Tree Cover 2-II-Re. App. Of Scrub Areanormal	3300	Shillai	R.F. Jasvi C-1	3
	16-C-90-Macro Management FPR Scheme	5500	Shillai	R.F. Koti-Bounch C-3	18
	16-C-90-Macro Management FPR Scheme	9000	Shillai	R.F. Koti-Bounch	18
		180450		**Total**	**271.5**
2008-09	102-01-Soon Pasture Imp. & Grazing	1800	Kaffota	P.F. Janjli	2
	102-04-Soon Imp. of Tree Cover Aff. 2.1 Afforestation	5500	Kaffota	P.F. Jamna	5
	102-04-Soon Imp. of Tree Cover Aff. 2.1 Afforestation	11000	Kaffota	R.F. Nigali	10

	102-04-Soon Imp. of Tree Cover Aff. 2.II Enrichment	8000	Kaffota	R.F. Chandni	10
	102-04-Soon Imp. of Tree Cover Aff. 2.III Re-Afforestation of Scrub Area	5500	Kaffota	R.F. Gaber	5
	102-04-Soon Imp. of Tree Cover Aff. 2.III Re-Afforestation of Scrub Area	5500	Kaffota	R.F. Salag	5
	102-12-Soon Protective Aff. Soil Cons.&Demonsration	5500	Kaffota	R.F. Khajuri	5
	102-12-Soon Protective Aff. Soil Cons.&Demonsration	3300	Kaffota	R.F. Khajuri	3
	16-C-90 Macro Management FPR Scheme	8600	Kaffota	Sataun	7
	D.No.32 SCP Plan 789-102-12-Prot. Affor. Soil Cons.	2200	Kaffota	R.F. Khajuri	2
	102-04-Soon Imp. of Tree Cover Aff. 2.1 Afforestation	5500	Nohra	R.F. Charana	5
	102-04-Soon Imp. of Tree Cover Aff. 2.1 Afforestation	5500	Nohra	R.F. Choras	5
	102-04-Soon Imp. of Tree Cover Aff. 2.1 Afforestation	5500	Nohra	R.F. Chunvi	5
	102-04-Soon Imp. of Tree Cover Aff. 2.1 Afforestation	5500	Nohra	R.F. Garari	5
	102-04-Soon Imp. of Tree Cover Aff. 2.II Enrichment	4000	Nohra	R.F. Pipli	5
	102-04-Soon Imp. of Tree Cover Aff. 2.II Enrichment	4000	Nohra	R.F.Gatlog	5
	102-04-Soon Imp. of Tree Cover Aff. 2.II Enrichment	4000	Nohra	R.F. Deva Manal	5

	102-04-Soon Imp. of Tree Cover Aff. 2.III Re-Afforestation of Scrub Area	5500	Nohra	R.F. Gwahi	5
	102-04-Soon Imp. of Tree Cover Aff. 2.III Re-Afforestation of Scrub Area	5500	Nohra	R.F. Kufta-Pabor	5
	16-C-90 Macro Management FPR Scheme	6500	Nohra	R.F. Thanga	10
	D.No.32 SCP Plan 789-102-12-Prot. Affor. Soil Cons.	6600	Nohra	R.F. Punner	6
	102-12-Soon Protective Aff. Soil Cons.&Demonsration	5500	Renuka ji	R.F. Chari Ghati	5
	102-12-Soon Protective Aff. Soil Cons.&Demonsration	2200	Renuka ji	P.F. Chhow Boger	2
	102-04-Soon Imp. of Tree Cover Aff. 2.1 Afforestation	5500	Reuka ji	R.F. Ghaton	5
	102-04-Soon Imp. of Tree Cover Aff. 2.1 Afforestation	11000	Reuka ji	P.F. Charag	10
	102-04-Soon Imp. of Tree Cover Aff. 2.1 Afforestation	5500	Reuka ji	P.F. Chhow Boger	5
	102-04-Soon Imp. of Tree Cover Aff. 2.II Enrichment	3200	Reuka ji	Ganu Shamlat	5
	102-04-Soon Imp. of Tree Cover Aff. 2.II Enrichment	3000	Reuka ji	Swar Shamlat	5
	102-04-Soon Imp. of Tree Cover Aff. 2.II Enrichment	3500	Reuka ji	R.F. Thana Kheguwa	5
	102-01-Soon Pasture Imp. & Grazing	2500	Shillai	R.F. Borar	5
	102-01-Soon Pasture Imp. & Grazing	2000	Sangrah	P.F. Mashoor	5

	102-04-Soon Imp. of Tree Cover Aff. 2.1 Afforestation	5500	Sangrah	R.F. Ucha Tikker	5
	102-04-Soon Imp. of Tree Cover Aff. 2.1 Afforestation	5500	Sangrah	R.F. Ghaton	5
	102-04-Soon Imp. of Tree Cover Aff. 2.1 Afforestation	5500	Sangrah	R.F. Lajwa	5
	102-04-Soon Imp. of Tree Cover Aff. 2.1 Afforestation	5500	Sangrah	R.F. Thain	5
	102-04-Soon Imp. of Tree Cover Aff. 2.III Re-Afforestation of Scrub Area	11000	Sangrah	R.F. Diwri Kharan	10
	102-04-Soon Imp. of Tree Cover Aff. 2.III Re-Afforestation of Scrub Area	5500	Sangrah	R.F. Tikkari	5
	D.No.32 SCP Plan 789-102-01-Social & Farm Forestry (SC) Enrichement	11450	Sangrah	R.F. Bhallar	10.66
	D.No.32 SCP Plan 789-102-12-Prot. Affor. Soil Cons.	6600	Sangrah	Gatta Madwach	6
	102-04-Soon Imp. of Tree Cover Aff. 2.1 Afforestation	5500	Shillai	R.F. Bali-Koti	5
	102-04-Soon Imp. of Tree Cover Aff. 2.II Enrichment	4000	Shillai	R.F. Milla	5
	102-04-Soon Imp. of Tree Cover Aff. 2.III Re-Afforestation of Scrub Area	5500	Shillai	R.F. Kota Pab	5
	102-04-Soon Imp. of Tree Cover Aff. 2.III Re-Afforestation of Scrub Area	5500	Shillai	R.F. Shi-Kayari	5

	102-04-Soon Imp. of Tree Cover Aff. 2.III Re-Afforestation of Scrub Area	5500	Shillai	R.F. Zhakando	5
	102-12-Soon Protective Aff. Soil Cons.&Demonsration	5500	Shillai	R.F. Manal	5
	16-C-90 Macro Management FPR Scheme	2500	Shillai	R.F. Khallando	5
	16-C-90 Macro Management FPR Scheme	5000	Shillai	R.F. Khallando	9
		254450		**G. Total**	**262.66**
2009-10	102-01-Soon Parsture Imp. & Grazing	2500	Kaffota	R.F. Jamna C-4	5
	102-04-Soon Imp. Of Tree Cover Aff. 2.I Afforestation	5500	Kaffota	R.F. Nigali C-1	5
	102-04-Soon Imp. Of Tree Cover Aff. 2.I Afforestation	3300	Kaffota	R.F. Jajali C-4	3
	102-04-Soon Imp. Of Tree Cover Aff. 2.II Enrichment	2100	Kaffota	R.F. DhabPipli C-4	3
	102-04-Soon Imp. Of Tree Cover Aff. 2.II Enrichment	1950	Kaffota	R.F. Titiyana C-13	3
	102-04-Soon Imp. Of Tree Cover Aff. 2.III Re-Afforestation of Scrub Area	4400	Kaffota	R.F. Gabbar C-4	4
	102-04-Soon Imp. Of Tree Cover Aff. 2.III Re-Afforestation of Scrub Area	5500	Kaffota	R.F. Khajuri	5
	102-04-Soon Imp. Of Tree Cover Aff. 2.I Afforestation	2200	Nohra	R.F. Chunvi	2
	102-04-Soon Imp. Of Tree Cover Aff. 2.I Afforestation	3300	Nohra	P.F. Devamanal	3
	102-04-Soon Imp. Of Tree Cover Aff. 2.I Afforestation	3300	Nohra	R.F. Kufta-Pabor	3

	102-04-Soon Imp. Of Tree Cover Aff. 2.II Enrichment	2400	Nohra	R.F. Kuffer Kayari	3
	102-04-Soon Imp. Of Tree Cover Aff. 2.II Enrichment	2400	Nohra	R.F. Chunvi	3
	102-04-Soon Imp. Of Tree Cover Aff. 2.III Re-Afforestation of Scrub Area	3300	Nohra	R.F. Charna	3
	102-04-Soon Imp. Of Tree Cover Aff. 2.III Re-Afforestation of Scrub Area	3300	Nohra	R.F. Garari C-6	3
	102-04-Soon Imp. Of Tree Cover Aff. 2.III Re-Afforestation of Scrub Area	3300	Nohra	R.F. Kuffer Kayari	3
	D.No. 32 SCCP Plan (SC) Enrichment	7800	Nohra	R.F. Bandal	7.09
	789-102-12-Prot. Affor. Soil Cons.	5000	Nohra	R.F. Gatlog	5
	102-04-Soon Imp. Of Tree Cover Aff. 2.I Afforestation	4400	Renuka ji	R.F. Chhow-Bhogar	4
	102-04-Soon Imp. Of Tree Cover Aff. 2.I Afforestation	4400	Renuka ji	R.F. Ghaton C-22	4
	102-04-Soon Imp. Of Tree Cover Aff. 2.II Enrichment	1900	Renuka ji	R.F. Chari Ghati C-4	3
	102-04-Soon Imp. Of Tree Cover Aff. 2.II Enrichment	2400	Renuka ji	R.F. Unger C-2	3
	102-04-Soon Imp. Of Tree Cover Aff. 2.III Re-Afforestation of Scrub Area	5500	Renuka ji	R.F. Ghaton C-22	5
	102-04-Soon Imp. Of Tree Cover Aff. 2.III Re-Afforestation of Scrub Area	4400	Renuka ji	R.F. Chari Ghati C-3	4

	102-01-Soon Parsture Imp. & Grazing	2500	Sangrah	RanfuaJabrog	5
	102-04-Soon Imp. Of Tree Cover Aff. 2.I Afforestation	5500	Sangrah	R.F. Bhallar	5
	102-04-Soon Imp. Of Tree Cover Aff. 2.I Afforestation	3300	Sangrah	P.F. Thain	3
	102-04-Soon Imp. Of Tree Cover Aff. 2.II Enrichment	4800	Sangrah	R.F. Kharan	6
	102-04-Soon Imp. Of Tree Cover Aff. 2.III Re-Afforestation of Scrub Area	4400	Sangrah	R.F. Ghaton	4
	102-04-Soon Imp. Of Tree Cover Aff. 2.III Re-Afforestation of Scrub Area	5500	Sangrah	P.F. Dada	5
	789-102-12-Prot. Affor. Soil Cons.	5500	Sangrah	RenfuaJabrog	5
	102-01-Soon Parsture Imp. & Grazing	2500	Shillai	R.F. Kharkhan C-4	5
	102-04-Soon Imp. Of Tree Cover Aff. 2.I Afforestation	3300	Shillai	R.F. Koti Bounch C-3	3
	102-04-Soon Imp. Of Tree Cover Aff. 2.I Afforestation	2200	Shillai	R.F. Panog C-1	2
	102-04-Soon Imp. Of Tree Cover Aff. 2.I Afforestation	3300	Shillai	R.F. Jhakndo C-7	3
	102-04-Soon Imp. Of Tree Cover Aff. 2.II Enrichment	2400	Shillai	R.F. Milla C-4	3
	102-04-Soon Imp. Of Tree Cover Aff. 2.II Enrichment	2400	Shillai	R.F. Lojwa C-15	3
	102-04-Soon Imp. Of Tree Cover Aff. 2.III Re-Afforestation of Scrub Area	3300	Shillai	R.F. Naya Panjor C-1	3

	102-04-Soon Imp. Of Tree Cover Aff. 2.III Re-Afforestation of Scrub Area	3300	Shillai	R.F. Bhatnol C-5	3
	102-04-Soon Imp. Of Tree Cover Aff. 2.III Re-Afforestation of Scrub Area	3300	Shillai	R.F. Bali Koti	3
		142050		**G.Total**	**147.09**
2010-11					
	102-04-Soon Imp. Of Tree Cover Aff. 2.I Afforestation	5500	Kaffota	RF-Khajuri	5
	102-04-Soon Imp. Of Tree Cover Aff. 2.II Enrichment	3200	Kaffota	RF Janjali	4
	102-04-Soon Imp. Of Tree Cover Aff. 2.III Re-Afforestation of Scrub Area	5500	Kaffota	RF-Negali	5
	2402-102-12-Soil Cons. Prot. Affr.	4400	Kaffota	RF-Gabbar	4
	2402-102-12-Soil Cons. Prot. Affr.	5500	Kaffota	RF-Chandani	5
	2402-102-12-Soil Cons. Prot. Affr.	4400	Kaffota	RF-Kathar	4
	2402-102-12-Soil Cons. Prot. Affr.	5500	Kaffota	RF-Janjali	5
	2402-102-12-Soil Cons. Prot. Affr.	2750	Kaffota	RF-Sataun	2.87
	2402-102-12-Soil Cons. Prot. Affr.	2750	Kaffota	RF-Sataun	2.5
	2402-102-12-Soil Cons. Prot. Affr.	2750	Kaffota	RF-Sataun	2.5
	2402-102-12-Soil Cons. Prot. Affr.	650	Kaffota	RF-Sataun	0.5
	Net Present Value (NPV)	750	Kaffota	RF-Gabbar	1
	Net Present Value (NPV)	750	Kaffota	RF-Chandani	1
	National Medicinal Plant Board	2200	Kaffota	RF-Sataun	2
	2402-102-12-Soil Cons. Prot. Affr.	4950	Nohra	RF Pipli	4.5

	102-04-Soon Imp. Of Tree Cover Aff. 2.II Enrichment	3200	Nohra	RF-Devna C2	4
	102-04-Soon Imp. Of Tree Cover Aff. 2.III Re-Afforestation of Scrub Area	2200	Nohra	RF-Chunvi	2
	102-04-Soon Imp. Of Tree Cover Aff. 2.III Re-Afforestation of Scrub Area	3300	Nohra	RF-Garari	3
	2402-102-12-Soil Cons. Prot. Affr.	4950	Nohra	RF-SheeliBhangari	4.5
	2402-102-12-Soil Cons. Prot. Affr.	1100	Nohra	RF-Bhangari	1
	Net Present Value (NPV)	3750	Nohra	RF-Gawahi	5
	Net Present Value (NPV)	3750	Nohra	Gatalog	5
	102-04-Soon Imp. Of Tree Cover Aff. 2.III Re-Afforestation of Scrub Area	11000	Renuka ji	PF-Charag C-2	10
	Bamboo Mission	800	Renuka Ji	Pvt Unger	2
	National Medicinal Plant Board	4400	Renuka ji	R.F. Thana khegwa	4
	D.No. 32 SCCP Plan 789 (04) Prot. Aff. Soil Cons. (SC)	5500	Renukaji	RF-Charighati C-3 &C-4	5
	2402-102-12-Soil Cons. Prot. Affr.	4950	Renukaji	PF- Chhowbhogar C-4	4.5
	2402-102-12-Soil Cons. Prot. Affr.	550	Renukaji	PF- Chhowbhogar C-4	0.5
			Renukaji		
	Net Present Value (NPV)	3750	Renukaji.	RF-Charighati C-3	5
	Net Present Value (NPV)	3750	Renukaji.	RF-Ungar C-1	5
	102-01-Soon Parsture Imp. & Grazing	4800	Sangrah	RF-Bhallar	6
	102-04-Soon Imp. Of Tree Cover Aff. 2.I Afforestation	5500	Sangrah	PF Thian	5
			Sangrah		0

	102-04-Soon Imp. Of Tree Cover Aff. 2.III Re-Afforestation of Scrub Area	5500	Sangrah	RF-Ghaton	5
	2402-102-12-Soil Cons. Prot. Affr.	5500	Sangrah	Ranfuwa Govt. land	5
	Bamboo Mission	1000	Sangrah	Pvt Redli	2
	Net Present Value (NPV)	7000	Sangrah	Redly	10
	National Medicinal Plant Board	4400	Sangrah	Redly	4
	102-04-Soon Imp. Of Tree Cover Aff. 2.I Afforestation	5500	Shillai	RF KharKhan C-9	5
	102-04-Soon Imp. Of Tree Cover Aff. 2.I Afforestation	5500	Shillai	RF Bindoli C-1	5
	102-04-Soon Imp. Of Tree Cover Aff. 2.III Re-Afforestation of Scrub Area	5500	Shillai	RF-Borar C-1	5
	2402-102-12-Soil Cons. Prot. Affr.	5500	Shillai	RF-Milla C-2	5
	National Medicinal Plant Board	4400	Shillai	RF-Bhatnol C-6	4
		168600		**Total**	**170.37**
2011-12	2-III Re-Afforesation of scrub Area	65800	Kaffota	RF-Khajuri	4
	2402-789(01) Protective afforecation Soil cons. (SC)	85000	Kaffota	RF-Tatiyana	5
	FDA	120000	Kaffota	RF Kathar	10
	FDA	110000	Kaffota	RF Khajuri	10
	National Medicinal Plant Board	366250	Kaffota	RF Kathar	20
	National Medicinal Plant Board	82600	Kaffota	RF DhabPipli	5
	National Medicinal Plant Board	39000	Kaffota	RF Sataun	3
	2406-102-12-Soil Cons. Protective Aff.	68000	Nohra	RF ShilliBhangari	4
	2402-789(01) Protective afforecation Soil cons. (SC)	17000	Nohra	RF-SheeliBhangari	1

	2402-789(01) Protective afforecation Soil cons. (SC)	68000	Nohra	RF-Devna	4
	2402-789(01) Protective afforecation Soil cons. (SC)	52400	Nohra	RF Gawahi	4.5
	FDA	75000	Nohra	RF Anukoti	5
	FDA	75000	Nohra	RF Bandal	5
	2406-102-12-Soil Cons. Protective Aff.	51000	Renuka ji	RF-Charighati C-5	3
	FDA	146900	Renuka Ji	PF Charag	10
	FDA	97750	Renuka Ji	RF Chowbhoger	5
	2.1 Afforestation	85000	Renukaji	RF Choubhoger C5	5
	2402-789(01) Protective afforecation Soil cons. (SC)	83500	Renukaji	RF Charighatti c4	4.9
	National Medicinal Plant Board	39300	Renukaji.	RF Charighatti c3	3
	National Medicinal Plant Board	39300	Renukaji.	RF Khegua C1	3
	National Medicinal Plant Board	26200	Renukaji.	RF Bhoger C9	2
	102(01) Soon Pasture Imp. &	79550	Sangrah	Ranfuwa Govt. land	5
	2-III Re-Afforesation of scrub Area	100900	Sangrah	RF-Bhallar	6
	2-III Re-Afforesation of scrub Area	119000	Sangrah	RF-Lazwa	7
	2402-789(01) Protective afforecation Soil cons. (SC)	71900	Sangrah	PF Thian	5
	FDA	36500	Sangrah	RF Gehal	5
	FDA	72400	Sangrah	RF Diwri	10
	2-III Re-Afforesation of scrub Area	86000	Shillai	RF-Koti Bonch	4
	2402-789(01) Protective afforecation Soil cons. (SC)	85000	Shillai	RF-Kharkan	5
	FDA	50000	Shillai	RF Khatna	10
	National Medicinal Plant Board	26000	Shillai	RF Bindoli	2
		2520250		**Total**	**175.4**

2012-13	FDA	1000	Kaffota	R.F Khajuri C9	5
	2.III Re-Afforesation Scrub Area	5500	Kaffota	R.F sataun C2	5
	D. No 32 SCP Plan 2406-789-06 Pre. Con &Managent under TFC	11000	Kaffota	R.F Gabbar C4	10
	D. No 32 SCP Plan 2406-789-06 Pre. Con &Managent under TFC	6600	Kaffota	R.F Janjli C4	6
	D. No 32 SCP Plan 2406-789-06 Pre. Con &Managent under TFC	5500	Kaffota	R.F Nigali C5	5.09
	2.III Re-Afforesation Scrub Area	4400	Kaffota	R.F Khajuri C9	4
	FDA	2000	Kaffota	R.F Khajuri C7	5
	FDA	11000	Kaffota	RF Kather	10
	Compensatory Afforestation	5500	Kaffota	R.F SataunC2 &C3	5
	National Medicinal Plant Board	5500	Kaffota	R.F Dab Pipli C5	5
	National Medicinal Plant Board	52800	Kaffota	R.F Gabbar C4	4
	National Medicinal Plant Board	39500	Kaffota	R.F.Sataun C2	3
	2402-102-12 Soil Sons Port. Aff.	5500	Nohra	RF Gatlog	5
	102-04 Ipm. Of Tree Cover	7700	Nohra	RF Chunvi	7
	FDA	5500	Nohra	RF Borali	5
	FDA	5500	Nohra	RF Anu Koti	5
	National Medicinal Plant Board	82400	Nohra	R.F Choras C3,C4	18.75
	2.II Enrichment Planting	9600	Renuka Ji	R.F Charighatti C3	12
	FDA	1000	Renuka ji	RF Ghatton C22	5
	National Medicinal Plant Board	22000	Renuka ji	RF ChhouBhoggarr	5
	National Medicinal Plant Board	3300	Renuka ji	R.F Charighatti C5	3
	FDA	5500	Renuka ji	PF Chhoubhogar	5
	National Medicinal Plant Board	39600	Renuka Ji	R.F Ungar C2	3
	102-04 Ipm. Of Tree Cover	7700	Sangrah	R.F Bhallar	7

	2.III Re-Afforesation Scrub Area	5500	Sangrah	R.F.UnchaTikkar	5
	D. No 32 SCP Plan 2406-789-06 Pre. Con &Managent under TFC	5500	Sangrah	P.F Dungi	5
	D. No 32 SCP Plan 2406-789-06 Pre. Con &Managent under TFC	3300	Sangrah	R.F Panrow	3
	FDA	2000	Sangrah	R.F Lajwa	5
	National Medicinal Plant Board	4400	Sangrah	P.F Thian	1
	National Medicinal Plant Board	30000	Sangrah	RF Thian	2.25
	102(01) soon Pasture Imp.& Grazing	6600	Shillai	R.F Bindoli C1	6
	D. No 32 SCP Plan 2406-789-06 Pre. Con &Managent under TFC	5500	Shillai	R.F Bali Koti C16	5
	National Medicinal Plant Board	26400	Shillai	P.F Kufta C2	6
	National Medicinal Plant Board	15400	Shillai	R.F Bindoli C1	3.5
		450200		**Total**	**189.59**
2013-14	FDA	2000	Kaffota	R.F Khajuri C2	5
	102-01-Pasture Grazing & Imp. Of Land	5500	Kaffota	R.F sataun C3	5
	FDA	1000	Kaffota	R.F Gabbar C4	5
	National Medicinal Plant Board	4200	Kaffota	R.F Janjli C4	4
	Bamboo Mission	3500	Kaffota	R.F Nigali C5	7
	Bamboo Mission	4000	Kaffota	R.F Nigali C5	8
	102-04-Imp. Of Tree Cover 2.I Afforesation	5500	Kaffota	R.F Khajuri C2	5
	102-04-Imp. Of Tree Cover 2.I Afforesation	5500	Kaffota	RF Tatiyana	5
	102-01-Pasture Grazing & Imp. Of Land	5500	Kaffota	R.F Sataun C3	5
	National Medicinal Plant Board	52800	Kaffota	R.F Sataun C2	4
	National Medicinal Plant Board	5500	Kaffota	R.F Gabbar C4	5
	Compensatory Afforestation (NPV)	4400	Kaffota	R.F.Sataun C2& C3	4

	102-04-Imp. Of Tree Cover 2.I Afforesation	5500	Nohra	RF Bhangari	5
	102-04-Imp. Of Tree Cover 2.I Afforesation	5500	Nohra	RF-Gatalog C6	5
	102-04-Imp. Of Tree Cover 2.III Re-Afforesation of Scrub Area	5500	Nohra	RF. Charna C2	5
	Artificial Regenration	2000	Nohra	RF Bandal C4	5
	Artificial Regenration	5500	Nohra	RF Anu Koti C2	5
	Silvi Parture	2000	Renuka ji	RF Ghatton C23	5
	Artificial Regenration	5500	Renuka ji	PF ChhouBhoggarr, C4	5
	National Medicinal Plant Board	13200	Renuka Ji	R.F Thana-Khegua C2	3
	National Medicinal Plant Board	17600	Renuka Ji	R.F Ungar C1	4
	Bamboo Mission	2500	Renuka Ji	R.F Thana-Khegua C2	5
	Van Mohatsove	500	Renuka ji	WL area Renukaji	0.5
	2402-102-12-Soil Cons. Prot. Aff.	5500	Renukaji	PF ChhouBhoggar C6	5
	102-04-Imp. Of Tree Cover 2.I Afforesation	5500	Renukaji	RF Ghatton C23	5
	National Medicinal Plant Board	44000	Sangrah	R.F Bhallar	4
	102-04-Imp. Of Tree Cover 2.I Afforesation	5500	Sangrah	R.F.UnchaTikkar	5
	102-04-Imp. Of Tree Cover 2.III Re-Afforesation of Scrub Area	5500	Sangrah	R.F.UnchaTikkar	5
	D.No. 32 SCP Plan 2406-789-06-Preservation conservation & Management under TFC	5500	Sangrah	RF. Duri-Kharan	5
	Bamboo Mission	5500	Sangrah	R.F Mashoor	5
	FDA	5500	Sangrah	R.F Lajwa	5
	FDA	10000	Sangrah	R.F Lajwa	5
	2402-102-12-Soil Cons. Prot. Aff.	7700	Shillai	RF-Naya Panjor C7	7
	102-04-Imp. Of Tree Cover 2.I Afforesation	5500	Shillai	R.F Bindoli C1	5

	D.No. 32 SCP Plan 2406-789-06-Preservation conservation & Management under TFC	5500	Shillai	RF. Jakhando C7	5
	National Medicinal Plant Board	28000	Shillai	RF. Jakhando C3	5
	National Medicinal Plant Board	8800	Shillai	RF -Naya Panjor C7	2
		312700		**Total**	**177.5**
2014-15	Compensatory Afforestation (NPV)	11000	Kaffota	R.F Gabbar C4	10
	102-04 Imp. Tree Cover 2.I Afforestation	16500	Kaffota	R.F Janjli C4	15
	102-04 Imp. Tree Cover 2.I Afforestation	5500	Kaffota	RF Tatiyana	5
	102-04 Imp. Tree Cover 2.II Enrichment Planting	4000	Kaffota	RF Chandni C3	5
	102-04 Imp. Tree Cover 2.III Re-Afforestation Scrub Area	8800	Kaffota	RF Salag C5	8
	102-01-Parture Grazing & Imp. Of Land.	6600	Kaffota	R.F Gabbar C3	6
	2402-102-12-Soil Cons. Prot. Aff.	5500	Kaffota	R.F.Sataun C1	5
	2402-102-12-Soil Cons. Prot. Aff.	5500	Kaffota	R.F.Shiva C4	5
	102-01-Parture Grazing & Imp. Of Land.	5500	Nohra	R.F Garari C6,C7	5
	102-04 Imp. Tree Cover 2.I Afforestation	5500	Nohra	RF Kuffer Kaira C1	5
	102-04 Imp. Tree Cover 2.III Re-Afforestation Scrub Area	5500	Nohra	RF Chunvi C1	5
	102-04 Imp. Tree Cover 2.III Re-Afforestation Scrub Area	5500	Nohra	RF Bhangari C1	5
	102-04 Imp. Tree Cover 2.II Enrichment Planting	4000	Nohra	R.F Pipali	5
	102-04 Imp. Tree Cover 2.I Afforestation	5500	Renuka Ji	PF Charag C3	5
	102-04 Imp. Tree Cover 2.II Enrichment Planting	4000	Renuka Ji	R.F Charighatti C3	5

	102-04 Imp. Tree Cover 2.I Afforestation	5500	Sangrah	R.F.UnchaTikkar C1	5
	102-04 Imp. Tree Cover 2.I Afforestation	5500	Sangrah	R.F.TikriDaskana C2	5
	102-04 Imp. Tree Cover 2.III Re-Afforestation Scrub Area	5500	Sangrah	R.F.TikriDaskana C2	5
	102-04 Imp. Tree Cover 2.II Enrichment Planting	4000	Sangrah	PF Thian C8	5
	Van Mahostve	150	Sangrah	PF Thian	0.2
	102-04 Imp. Tree Cover 2.I Afforestation	5500	Shillai	R.F Ajroli	5
	102-04 Imp. Tree Cover 2.III Re-Afforestation Scrub Area	5500	Shillai	RF. Jakhando C1	5
		130550		**Total**	**124.2**
2015-16	2402-102-12-Soil Cons. Prot. Aff.	4000	Kaffota	R.F sataun C2	5
	102-01 Pasture Grazing & Imp. Of Land	5500	Kaffota	R.F Janjli C4	5
	102-04-Ipm. Of Tree Cover 2.III Re-Afforestation of Scrub Area	5500	Kaffota	R.F Janjli C4	5
	102-04-Ipm. Of Tree Cover 2.II Enrichment Planting	3200	Kaffota	R.F Khajuri C7	4
	Compnstory Afforestation (NPV)	18700	Kaffota	R.F Gabbar C4	17
	102-04-Ipm. Of Tree Cover 2.I Afforestation	11000	Nohra	RF Pipali C-1	10
	102-04-Ipm. Of Tree Cover 2.II Enrichment Planting	4000	Nohra	RF Bhangari	5
	102-04-Ipm. Of Tree Cover 2.III Re-Afforestation of Scrub Area	5500	Nohra	RF-Gatalog C5	5
	102-04-Ipm. Of Tree Cover 2.III Re-Afforestation of Scrub Area	5500	Nohra	PF Bhajond	5
	102-04-Ipm. Of Tree Cover 2.III Re-Afforestation of Scrub Area	5500	Nohra	RF Manal C-6	5
	Bamboo Mission	2100	Nohra	Pvt. Land Mauza Maithly	5

	102-04-Ipm. Of Tree Cover 2.I Afforestation	11000	Renuka ji	R.F Charighatti C5	10
	102-04-Ipm. Of Tree Cover 2.I Afforestation	11000	Renuka ji	RF Chhoubhogar C-1	10
	102-04-Ipm. Of Tree Cover 2.III Re-Afforestation of Scrub Area	5500	Sangrah	RF. Duri-Kharan C-7	5
	102-04-Ipm. Of Tree Cover 2.II Enrichment Planting	4000	Sangrah	RF. Duri-Kharan	5
	2402-102-12-Soil Cons. Prot. Aff.	4000	Sangrah	PF Thian C-8	5
	102-04-Ipm. Of Tree Cover 2.I Afforestation	2200	Sangrah	PF Thian C-8	2
	102-04-Ipm. Of Tree Cover 2.III Re-Afforestation of Scrub Area	11000	Shillai	RF Bhatnol C-5 & C-6	10
	National Madicinal Plant Board	6600	Shillai	RF. Jakhando C2	6
	2402-102-12-Soil Cons. Prot. Aff.	4000	Shillai	RF Lani Borad	5
		129800		**Total**	**129**
2016-17	102-04-Imp. Of Tree Cover 2.III Re-Affrestation of Scrub Area.	5500	Kaffota	R.F sataun C2	5
	2402-102-12-Soil Cons. Prot. Aff.	3300	Kaffota	R.F Janjli C4	3
	102-01-Parture Grazing & Imp. Of Land	1000	Kaffota	R.F Manal C4	5
	102-04-Imp. Of Tree Cover 2.III Re-Affrestation of Scrub Area.	5500	Kaffota	RF Tatiyana C8	5
	102-04-Imp. Of Tree Cover 2.III Re-Affrestation of Scrub Area.	5500	Kaffota	RF Tatiyana C14	5
	2402-102-12-Soil Cons. Prot. Aff.	5500	Kaffota	RF Kather C1	5
	2402-102-12-Soil Cons. Prot. Aff.	7700	Kaffota	R.F.Shiva C4	7
	2402-102-12-Soil Cons. Prot. Aff.	4400	Nohra	R.F Garari C6	4
	102-04-Imp. Of Tree Cover 2.I Afforestation	5500	Nohra	RF-Gatalog C3	5

	2402-102-12-Soil Cons. Prot. Aff.	6600	Nohra	RF-Gatalog C1	6
	Van Mahostve	200	Renuka Ji	PF Ganu C1	0.5
	102-04-Imp. Of Tree Cover 2.II Enrichment Planting	8000	Renukaji	PF ChhouBhoggar	10
	2402-102-12-Soil Cons. Prot. Aff.	11000	Sangrah	RF. Duri-Kharan	10
	102-04-Imp. Of Tree Cover 2.I Afforestation	5500	Sangrah	PF. Dada C2	5
	102-04-Imp. Of Tree Cover 2.I Afforestation	5500	Shillai	RF-Naya Panjor C5	5
	102-01-Parture Grazing & Imp. Of Land	1000	Shillai	RF-Naya Panjor C4	5
	2402-102-12-Soil Cons. Prot. Aff.	5500	Shillai	RF -Jaswi C1	5
	2402-102-12-Soil Cons. Prot. Aff.	5500	Shillai	RF -Shri Kiyari C1& C2	5
	2402-102-12-Soil Cons. Prot. Aff.	5500	Shillai	RF -Bhatnol C2	5
		98200		**Total**	**100.5**
2017-18	102-04-Imp of Tree Cover 2.I Afforestation	2500	Kaffota	R.F sataun C2	5
	102-04-Imp of Tree Cover 2.I Afforestation	2500	Kaffota	R.F Gabbar C4	5
	102-04-Imp of Tree Cover 2.II Enrichment Planting	4000	Kaffota	R.F Jamna C5	5
	102-04-Imp of Tree Cover 2.II Enrichment Planting	4000	Kaffota	R.F Janjli C4	5
	102-04-Imp of Tree Cover 2.II Enrichment Planting	4000	Kaffota	RF Kather C1	5
	102-04-Imp of Tree Cover 2.II Enrichment Planting	4000	Kaffota	R.F Dab Pipli C1	5
	102-04-Imp of Tree Cover 2.II Enrichment Planting	4000	Kaffota	R.F.Shiva C4	5
	102-04-Imp of Tree Cover 2.II Enrichment Planting	4000	Nohra	RF ShilliBhangari	5
	102-04-Imp of Tree Cover 2.II Enrichment Planting	4000	Nohra	RF Choker	5
	102-04-Imp of Tree Cover 2.II Enrichment Planting	4000	Nohra	RF. Chunvi C3	5
	102-04-Imp of Tree Cover 2.II Enrichment Planting	4000	Nohra	RF. Charna C2	5

	102-04-Imp of Tree Cover 2.I Afforestation	2500	Nohra	RF. Garari C4	5
	102-04-Imp of Tree Cover 2.I Afforestation	2500	Nohra	RF Anu Koti	5
	102-04-Imp of Tree Cover 2.II Enrichment Planting	4000	Sangrah	R.F.UnchaTikkar	5
	102-04-Imp of Tree Cover 2.II Enrichment Planting	4000	Shillai	RF -Naya Panjor C2	5
	102-04-Imp of Tree Cover 2.II Enrichment Planting	4000	Shillai	RF -Kinu Panog C1	5
	102-04-Imp of Tree Cover 2.II Enrichment Planting	4000	Shillai	RF -Milla C1	5
		62000		**Total**	**85**
2018-19	102-04-Imp. Tree Cover 2.I Afforestation	1100	Kaffota	R.F sataun C2	1
	102-04-Imp. Tree Cover 2.II Enrichment Planting	4000	Kaffota	R.F sataun C2	5
	NPV	4000	Kaffota	RF Kather C1	20
	NPV	5000	Kaffota	R.F Sataun C4	25
	102-04-Imp. Tree Cover 2.I Afforestation	5500	Kaffota	R.F.Shiva C6	5
	102-04-Imp. Tree Cover 2.II Enrichment Planting	4000	Nohra	R.F Garari C5	5
	102-04-Imp. Tree Cover 2.II Enrichment Planting	4000	Nohra	RF Jamal Nihog	5
	102-04-Imp. Tree Cover 2.II Enrichment Planting	4000	Nohra	RF Sail	5
	102-04-Imp. Tree Cover 2.II Enrichment Planting	8000	Nohra	RF ShilliBhangari	10
	NPV	1000	Nohra	RF-Gatalog C6	5
	NPV	2000	Renuka Ji	R.F Charighatti C5	10
	102-04-Imp. Tree Cover 2.III Re-Aff. Of Scrub Area	3938	Sangrah	PF Thian C3	3.58
	102-04-Imp. Tree Cover 2.II Enrichment Planting	4000	Shillai	RF-Khatna C2	5
	102-04-Imp. Tree Cover 2.II Enrichment Planting	4000	Shillai	RF-Dahar C2	5
	102-04-Imp. Tree Cover 2.II Enrichment Planting	4000	Shillai	RF -Bhatnol C3	5
		58538		**Total**	**114.58**
2019-20	102-04 Imp. Of Tree cover 2.I Afforestation	6600	Kaffota	R.F Janjli C5	6

	Vidyarthi Van Miter Yojna	1650	Kaffota	RF Janjali C6	1.5
	102-04 Imp. Of Tree cover 2.II Enrichment Planting	4800	Kaffota	RF Kather C3	6
	102-04 Imp. Of Tree cover 2.I Afforestation	6600	Kaffota	R.F.Shiva C6	6
	NPV Tall Plants	4000	Kaffota	RF Shiva C1	20
	NPV Tall Plants	4000	Kaffota	RF Sataun C3	20
	102-04 Imp. Of Tree cover 2.I Afforestation	11000	Nohra	RF-Gatalog C4	10
	NPV Tall Plants	4000	Nohra	RF-Gatalog C2	20
	NPV Tall Plants	1000	Renuka Ji	R.F Thana-Khegua C1	5
	102-04 Imp. Of Tree cover 2.I Afforestation	300	Sangrah	PF Thian C3	1
	102-04 Imp. Of Tree cover 2.II Enrichment Planting	900	Shillai	RF-Naya Panjor C6	3
	102-04 Imp. Of Tree cover 2.II Enrichment Planting	400	Shillai	R.F Khakahan C3	1
	102-04 Imp. Of Tree cover 2.II Enrichment Planting	600	Shillai	RF. Jakhando C1	2
	102-04 Imp. Of Tree cover 2.II Enrichment Planting	600	Shillai	Bali Koti C3	1.5
	102-04 Imp. Of Tree cover 2.II Enrichment Planting	1000	Shillai	Bali Koti C3	2
	102-04 Imp. Of Tree cover 2.II Enrichment Planting	2000	Shillai	Bhatnol C5	2.5
	Total	**49450**			**107.5**
2020-21	2406-102-04 Improvement of Tree cover	12000	Kaffota	R.F.Shiva C2	15
	2406-102-04 Improvement of Tree cover	12000	Kaffota	R.F Dab Pipli C6 &7	15
	NPV Tall Plant	3000	Kaffota	R.F Dab Pipli C7	15
	NPV Tall Plant	4000	Kaffota	R.F.Sataun C3	20
	NPV Tall Plant	4000	Kaffota	R.F Janjli C4	20
	NPV Tall Plant	3000		R.F.Shiva C2	15
	2406-102-04 Improvement of Tree cover	4000	Nohra	P.F Devamanal	5
	2406-102-04 Improvement of Tree cover	4000	Nohra	RF-Gatalog C6	5
	NPV Tall Plant	4000	Nohra	RF-Gatalog C3	20
	2406-102-04 Improvement of Tree cover	8000	Renuka ji	RF Ghatton C16	10
	NPV	4800	Renuka ji	R.F	6

				CharighattiC23	
	2406-102-04 Improvement of Tree cover	4000	Sangrah	R.F.UnchaTikkar	5
	2406-102-04 Improvement of Tree cover	4000	Sangrah	PF Thian	5
	2406-102-04 Improvement of Tree cover	8000	Shillai	RF-Bali Koti C7	10
	2406-102-04 Improvement of Tree cover	4000	Shillai	RF -Bhatnol C1	5
		82800		**Total**	**171**

7.9.5.2 Critical Appraisal: The main species undertaken for planting was chil, deodar, khair, bauhinia, amla. The success is good only in those areas where soil is good. Planting was not in accordance as proposed in the working plan. As per the working plan approximately 300 hac. area was to be planted every year. But there was no uniformity in planting over the years. Sometime it touches as high as 591 hac. and sometime its only 98 hac.

7.9.6 The Grazing (over lapping) Working Circle:

This working circle overlaps areas of all other working circle. Therefore the area is same as for the division i.e. 27365.75 hac. Special objects of management were as follow:

1. To meet the grazing requirement of local right holders and migratory grazier as laid down in faisla-e-janglat.
2. To improve quality and productivity of fodder so as to ensure sustained supply of fodder to local and migratory graziers.

7.9.6.1 Critical Appraisal:

Though the recommendations made were good but unfortunately the ParaosalongwithGovt. Forests are being grazed without any check. So it is not possible to improve their productivity.

CHAPTER-VIII

STATISTICS OF GROWTH AND YIELD

The statistics of growth, volume and yield of main species is discussed below: -

8.1 Chil:

8.1.1 Volume Factor:

An elaborate exercise together with detailed study of the volume factors of chil was done during the preparation of O.P. Sharma's Working plan of Rajgarh Forest Division and the local volume tables of Chil were prepared based on actual measurements of 219 trees of various height and diameter classes selected randomly all over the entire chil zone. The data collected was compiled by the data processing officer of the pre-investment survey centre, Dehradun. Based on it following volume factors were arrived at:-

Table No. 8.1: Local volume table for Chil

Diameter (cms)	Class	Volume(cum)
10-20	V	0.0504
20-30	IV	0.2499
30-40	III	0.6846
40-50	IIA	1.3544
50-60	IIB	2.2593
60-70	IA	3.3994
70-80	IB	4.7746
80-90	IC	6.3849
90 & over	ID	8.2303

These volume factors will continue to be used in the current plan also.

8.1.2 Growth:

Similarly the growth data of Chil was collected locally during O.P.Sharma's working plan preparation based on the above said 219 trees. The results as given in O.P. Sharma's plan are reproduced as follows:-**Table No. 8.2: Growth of Chil**

Diameter (cms)	Class	Diameter at breast Height (cms)	No. of years To reach the diameter	Time passage from Lower to higher classes
10-20	V	15	27	8
20-30	IV	25	44	17
30-40	III	35	63	19
40-50	IIA	45	82	19

50-60	IIB	55	102	20
60-70	IA	65	130	28

8.1.2.1 Age, Height and Diameter Relationship:

Table No. 8.3: Age, Height and Dia

S.No.	Age in years	Height(mtr)	Diameter(cm)
1	10	5.8	6.0
2	20	8.3	11.5
3	30	10.8	17.2
4	40	13.3	22.8
5	50	16.9	28.3
6	60	18.3	33.6
7	70	20.6	39.0
8	80	22.7	44.3
9	90	24.5	49.6
10	100	25.4	54.4
11	110	26.2	58.7
12	120	26.8	62.3
13	130	27.1	65.0

8.1.2.2 Increment percent:

The current annual growth percent for each diameter class was calculated during preparation of O.P. Sharma's plan by increment boring and by collection of felled trees data in coordination with pre investment survey of Forest Resources Organization. The data was compiled by data processing officer, PIS Centre Dehradun. The results obtained are reproduced below:

Table 8.4: Increment percentage

Diameter(cms)	Current Annual Increment %	
	Last 10 years	Previous 10 years
10-20 (15)	4.56	4.66
20-30 (25)	3.75	4.60
30-40 (35)	2.69	3.24
40-50 (45)	2.26	2.35
50-60 (55)	1.99	2.13
60-70 (65)	1.56	1.88
70-80 (75)	1.14	1.14
80-90 (85)	0.92	0.92
90 & over (95)	0.66	0.66

8.1.3 Value of t & z:

The value of t (time taken by IIB class trees to pass to IA class) and z (the mortality percent i.e. decrease in number from IIB to IA) is taken same as adopted in Rajgarh division plan (1991-92 to 2005-06 by Dr. M.B. Shrivastava. The value for t is 30 years & z is 23%.

8.2 Deodar :

8.2.1 Volume Factor :

The local volume factors of deodar were arrived at in Mukerjee's plan by felling 95 deodar trees representing all diameter classes from 20-30 cm. to 70-80 cm for determining the volume of stem timber in the round. These volume factors were used during O.P. Sharma's plan also and will continue to be used during this plan as well. These are reproduced below:

Table 8.5: Volume table for Deodar		
Diameter (cms)	**Class**	**Volume(cum)**
10-20	V	0.0707
20-30	IV	0.1416
30-40	III	0.7079
40-50	IIA	1.4158
50-60	IIB	2.5484
60-70	IA	3.5395
70-80	IB	4.8137
80-90	IC	6.0879
90 & over	ID	7.0879

8.2.2 Growth:

8.2.2.1 Age :

The growth studies of stump analysis done in Mukerjee's plan were adopted in O.P. Sharma's plan also. These are reproduced below:

Table No. 8.6: Growth of Deodar

Diameter (cms)	**Class**	**Diameter at breast Height (cms)**	**No. of years To reach the diameter**	**Time passage from Lower to higher classes**
10-20	V	15	30	-
20-30	IV	25	53	23
30-40	III	35	76	23
40-50	IIA	45	100	24
50-60	IIB	55	125	25
60-70	IA	65	153	28

8.3 Kail:

The volume factors of kail are not given independently in the working plan of Shri O.P. Sharma. However in case of Deodar-Kail working circle, the same volume factors were used for deodar and kail. It will therefore be appropriate to apply the volume factors of deodar also to kail. Therefore in case of kail the volume factors of deodar as given in para 8.2.1 will be applied.

8.4 Fir and Spruce:

8.4.1 Volume Factor

In O.P. Sharma's plan the fir and spruce data was taken from Jubbal plan by Kaul. The same data as reproduced below will be used in current plan also:

Table No. 8.7: Volume table for Fir & Spruce		
Diameter (cms)	**Class**	**Volume(cum)**
10-20	V	0.06
20-30	IV	0.28
30-40	III	0.99
40-50	IIA	1.84
50-60	IIB	3.11
60-70	IA	4.81
70-80	IB	6.51
80-90	IC	8.49
90 & over	ID	9.91

8.4.2 Growth:

Age, diameter growth and recruitment period from one diameter class to another as given in O.P. Sharma's plan is reproduced below:

Table No. 8.8: Growth of Fir Spruce

Diameter (cms)	**Class**	**Diameter at breast Height (cms)**	**No. of years To reach the diameter**	**Time passage from Lower to higher classes**
10-20	V	15	43	-
20-30	IV	25	72	2
30-40	III	35	95	23
40-50	IIA	45	117	22
50-60	IIB	55	140	23
60-70	IA	65	170	30

8.5 Ban Oak and Kokath:

In O.P. Sharma's plan the data for determining the volume and conversion factor of oaks and others miscellaneous species was collected from ban oak of Habban range and fuelwood lot of Sarahan range. In addition 11 trees of ban oak were also felled. The results obtained are reproduced below. It is however, added here that in O.P.Sharma's plan, the actual volume factors were not given rather the quantities of firewood and charcoal extracted were given. However the conversion factor of solid cum into quintals was given. The volume factors classwise mentioned in column 2 of the table below are arrived at after converting quantity of firewood into solid CuM as per the conversion factors mentioned in O.P.Sharma's plan.

Diameter (cms)	Class	Ban Oak			Kokath	
		Volume (cum)	Firewood(Qtls)	Charcoal (Qtls)	Firewood(Qtls)	Charcoal(Qtls)
10-20	V	0.054	0.65	0.107	0.40	0.041
20-30	IV	0.250	3.00	0.495	0.75	0.076
30-40	III	0.558	6.70	1.105	2.25	0.230
40-50	IIA	0.958	11.50	1.897	4.50	0.461
50-60	IIB	1.500	18.00	2.970	6.70	0.686
60-70	IA	1.867	22.40	3.696	8.60	0.881

Table No. 8.9: Ban-Oak and Kokath.

The conversion factors as given in O.P. Sharma's plan are reproduced below:

6.06 qtl of oaks/9.75 qtl of kokath	One quintal of charcoal
1 solid cum of oak firewood	12 quintals
1 solid cum of kokath firewood	6.70 quintals

This will continue to be in current plan also.

Regarding conversion factor of stacked fuelwood to solid volume: the factor 2 cum stacked volume = 1 cum solid volume will be appropriate. This is being used by the HPSFC Ltd also.

8.6 Broad leaved Species:

8.6.1 Volume Factor :

In O.P. Sharma's plan, the volume factors of Arya's plan of Nahan forest division were used. These will be used in current plan also and are reproduced from Chauhan's plan as under :

Table No. 8.10: BL Speceies.

Diameter (cms)	Class	Sain (cum)	Shisham (cum)	Kokath (cum)
10-20	V	0.127	0.064	0.064
20-30	IV	0.368	0.176	0.184
30-40	III	0.835	0.467	0.418
40-50	IIA	1.770	0.977	0.885
50-60	IIB	3.030	1.523	1.515
60-70	IA	4.587	2.265	2.294
70 & over	IB	6.385	2.265	3.193

Here the word kokath obviously means the miscellaneous dry deciduous species.

8.6.2 Growth:

No local data was collected to show the growth rate of miscellaneous broad leaved species. However the data collected elsewhere may give some idea about growth of broad leaved species. As per the growth and yield statistics of common Indian timber species published by the FRI Dehradun, the growth rate of some of the species is as under:

Table No. 8.11: Braod Leaved Species.

Age (Years)	Crop diameter (cms)					
	Chhal	Shisham	Semul	Sal (site quality III)	Sal (site quality IV)	Sain
10	8.382	5.08	--	5.84	4.22	8.64
20	13.208	9.65	13.72	10.16	7.62	14.22
30	17.272	22.35	21.34	13.37	10.82	20.32
40	20.828	31.24	28.70	17.53	13.57	27.43
50	23.875	38.12	35.56	21.08	17.02	29.48
60	26.416	46.23	39.12	24.38	17.27	33.27
70	28.702	--	41.92	27.69	22.61	36.83
80	30.480	--	43.69	30.73	23.18	40.13

The data in respect of chhal, semul and sain pertains to the studies done in Thana/Chanda divisions and published by the FRI.

8.7 Khair :

8.7.1 Volume factor:

In O.P.Sharma's plan, the volume factors of commercial timber in the round were taken from the plan of Shri S.R. Arya. Reagrding heartwood of khair, the data of Saharanpur working plan was adopted. For heartwood volume it will be in fitness of things to use Howard Pocket book data.The data beyond IIB only because these trees here are generally hollow. The same as given below will be used in the current plan :

Table No. 8.12: Khair Volume.

Diameter (cms)	Class	Volume (cum) Heartwood	Commercial timber In round (cum)
20-30	IV	0.110	0.170
30-40	III	0.266	0.411
40-50	IIA	0.589	0.906
50-60	IIB	0.988	1.487
60-70	IA	0.988	1.487
70 & over	IB	0.988	1.487

8.7.2 The yield of dry katha as given in O.P. Sharma's plan is reproduced below:

Table No. 8.13: Yield of Dry Katha

Diameter (cms)	Class	Yield in units of 8 kg.

20-30	IV	1
30-40	III	3
40-50	IIA	7
50-60	IIB	11
60-70	IA	15

8.7.3 Growth :

The growth data of khair was collected in 1998-99 in case of Nahan/Paonta plan. It together with other data indicates that a diameter of 20 cm dbh can be reached in Renuka ji division in about 30 years provided thinings are done timely. The details of growth data are appended in Appendix XXVIII.

8.8 Sal(*Shorearobusta*)

8.8.1 Volume factor:

The sal forests met within this division conform to site quality class IV as the area is dry and exposed. The volume table as adopted by B.S Chauhan is followed and reproduced below:

Table No. 8.14: Sal Volume Factor

Diameter (cms)	**Class**	**Total Standing Volume (Quality Class IV)**
10-20	V	0.113
20-30	IV	0.347
30-40	III	0.772
40-50	IIA	1.692
50-60	IIB	2.924
60-70	IA	4.389
70& above	IB	6.074

8.8.2 Growth: Refer to para 8.6.2

8.9 Quality class:

The Quality class in respect of chil,deodar,kail was assessed occularly and cross checked by height and diameter measurement of at least two trees in each compartment/sub compartment and by comparing the same with those of the standard quality-classes as given in the Multiple Yield Tables of the respective species. The quality classes determined have been recorded in the compartment history files.

8.10 Density

Density of all the compartment/sub-compartments has been calculated either by basal area method or occularly as mentioned in the working circles.

8.11 Enumeration:

The growing stock has been calculated by carrying out random stratified sampling. The sampled area is about 10% of the total area. The result of sampling are applied to other forests of similar nature and the growing stock calculated. In case of Khair in coppice areas, however total enumerations are done in 15 cm girth classes down to 15 cm girth.

8.12 The annual volume increment percentages:

The annual volume increment percentages were obtained by Forest Survey of India, Shimla for different species over the entire area covering Kullu – Seraj &Kotgarh divisions (1979-80 to 1993-94) by Shri J.C. Sharma :

Table No. 8.15: Annual Increment Percentage.

Species	**Increment Percentage**
Deodar	1.74
Kail	1.58
Chil	2.16
Fir	1.06
Spruce	1.20