

GOVERNMENT OF HIMACHAL PRADESH

DEPARTMENT OF FORESTS



**REVISED WORKING PLAN
FOR FORESTS OF
KARSOG FOREST DIVISION**

**PART I & II
FROM 2012-13 TO 2026-27**

BY

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INTRODUCTION

This working plan revises P.S. Guleria's Plan and covers all the forest areas of the present Karsog Forest Division. The Plan deals with the Demarcated Protected Forests (DPFs) and Undemarcated Protected Forests (UPFs) of Karsog ,Pangna ,Serl & Magroo ranges of Karsog Forest Division. The Preliminary Working Plan was written by Sh M.P.Singh.

The revision of the Plan was started in June, 1999 with the appointment of Sh. S.L.Goswami as WPO who worked up to September,2000. The work was further entrusted to various WPOs viz Sh.R.K.Singh ,Sh. Manoj Bhaik, Sh.A.C.Sharma , Sh G.S.Parmar and Sh.Rakesh Sood. Sh.S.D.Sharma took over as WPO, Karsog in June, 2006. The field work like enumeration, regeneration survey, stock mapping and writing of compartment history description/prescription were completed in March, 2007.

The draft Plan was submitted to CF WP Shimla in July, 2007. Thereafter the draft remained under discussion at different levels and the final corrected draft of the Plan was submitted to the then Pr.CCF Shri Vinay Tandon in September ,2010 who provided commendable technical input. For the first time in H.P. Forest Department the GIS platform has been used to draw the beat boundaries and to calculate area of each beat. Division Map has also been generated using the GIS technology. The Plan also provides panchayat wise composition of each forest beat. Also for the first time a forest wise estimation of the Invasive Alien Species has been provided along with a detailed strategy for the containing the spread of these species. The chapters on the Activities of the Forest Corporation and the Five Year Plans are also the new additions.

The restocking of forests through natural regeneration and plantation is one of the major activities recommended under this Plan and in this the role of Self Help Groups has been specifically emphasized. On the technical side the importance of good nursery stock and tall plants has been stressed. The NTFP working circle has been written in the light of the Himachal Pradesh Medicinal Plants Policy, 2006 and with details on the method of propagation and uses in the traditional systems of medicine. A special discussion on the threat perception of *Taxus* and *Berberis* has been included in this revised Plan. The Participatory Forest Management Working Circle has been written with much analysis and thought and the lessons learnt so far have been discussed in the Plan. Similarly the Wild Life Management Working Circle has been written quite differently and provides the details about the man-animal conflict and a strategy for involving local communities in wild life conservation. A census methodology has also been explained along with a very interesting note on the field craft for observing and understanding wild life.

The last Plan of Karsog Forest Division by Sh P.S.Guleria was up to March, 2000. Thereafter from April, 2000 this new Plan by Sh S.D.Sharma was to operate up to March, 2015 for a period of fifteen years. However, due to reasons of frequent officer turn over, the Plan preparation was delayed and it could be finalized only by the end of 2011. Since there is no point in implementing the Plan from a retrospective date of April, 2000 the present Plan has been rescheduled for implementation from 2012-13 for a period of fifteen years. The period from 2000-01 to 2011-12 shall be treated as gone over and deemed to be covered under the plan under revision. Further, wherever applicable, data has been researched and provided upto 2010-11.

S.D.Sharma

GLOSSARY OF BOTANICAL NAMES(TREES, SHRUBS,CLIMBERS,GRASSES,MEDICINAL PLANTS)

A. TREES

Botanical Name	Vernacular/Local Name	English Name
<i>Abies pindrow</i>	Tosh	Silver fir
<i>Abies spectabilis</i>	Talis patra	High level Silver fir
<i>Acer caudatum</i>	Mandar	Maple
<i>Acer caesium</i>	-do-	-do-
<i>Acer cappadocicum</i>	-do-	-do-
<i>Acer sterculiaceum</i>	-do-	-do-
<i>Aesculus Indica</i>	Goon	Horse chestnut
<i>Ailanthus excelsa</i>		
<i>Albizzia chinensis</i>	Siris	
<i>Albizzia lebbek</i>	-do-	
<i>Albizzia odoratissima</i>	-do-	
<i>Albizzia procera</i>	Safed siris	
<i>Alnus nepalensis</i>	Piak	Alder
<i>Alnus nitida</i>	-do-	
<i>Bauhinia purpurea</i>	Karial	
<i>Bauhinia recemosa</i>	-do-	
<i>Bauhinia roxburghiana</i>	-do-	
<i>Bauhinia variegata</i>		
<i>Bombax celba</i>	Semal	Cotton wood tree
<i>Butea monosperma</i>	Palas (Dhak)	
<i>Buxus papillosa</i>	Shamshad	Box wood
<i>Buxus wallichiana</i>	-do-	-do-
<i>Carpinus faginea</i>	Chakri	Hornbeam
<i>Carpinus viminea</i>	-do-	-do-
<i>Cassia fistula</i>	Amaltash	
<i>Cedrela serrata</i>	Dauri	
<i>Cedrus deodara</i>	Diyar	Deodar
<i>Celtis australis</i>	Khirk	Nettle tree
<i>Cornus controversa</i>	Haleu	Dogwood
<i>Corylus jacquemontii</i>	Thangl	Hazelnut
<i>Cupressus torulosa</i>	Devidiar	Cyprus
<i>Dalbergia sissoo</i>	Tali	Shisham
<i>Ehretia acuminata</i>	Punna	
<i>Euonymus fimbriatus</i>	Trltu	
<i>Ficus bengalensis</i>	Bar	
<i>Ficus semicordata</i>		
<i>Ficus racemosa</i>	Phagoora	Wildfig
<i>Ficus palmata</i>	-do-	-do-
<i>Ficus religiosa</i>	Pipal	
<i>Ficus auriculata</i>	Trambal	
<i>Fraxinus hookeri</i>	Sanooh	Ash
<i>Fraxinus floribunda</i>	-do-	-do-
<i>Grewia optiva</i>	Dhaman	

<i>Grewia vestita</i>	-do-	
<i>Litsea glutinosa</i>	Chirindi	
<i>Lyonia ovalifolia</i>	Allan	
<i>Mallotus philippinensis</i>	Kamal ✓	
<i>Melia azadirachta</i>	Darek ✓	Persian lilac
<i>Morus alba</i>	Karun	Mulberry
<i>Morus australis</i>	Karun	-do-
<i>Morus serrata</i>	-do-	-do-
<i>Neolitsaea pallens</i>	Chirindi	
<i>Olea ferruginea</i>	Kahu	Wild olive
<i>Persea odoratissima</i>		
<i>Picea smithiana</i>	Tosh	Spruce
<i>Pinus roxburghii</i>	Chir, Chil ✓	Chil pine
<i>Pinus wallichiana</i>	Kail	Blue pine
<i>Pistacia integerrima</i>	Kakreran	
<i>Platanus orientalis</i>	Chinar	
<i>Populus alba</i>	Pahari Pipal	Poplar
<i>Populus ciliata</i>	Chaloon	-do-
<i>Prunus armeniaca</i>	Khurmani	Wild apricot
<i>Prunus domestica</i>	Aloocha	Plum
<i>Prunus cornuta</i>	Jammu ✓ ?	B/Cherry
<i>Prunus persica</i>	Aru	Peach
<i>Punica granatum</i>	Daru ✓	Wild pomegranate
<i>Pyrus baccata</i>	Lewar	
<i>Pyrus communis</i>	Nakh	Pear
<i>Pyrus malus</i>	Seo	Apple
<i>Pyrus pashia</i>	Kainth	Wild madlar
<i>Quercus floribunda</i>	Moru ✓	Green oak (Middle zone)
<i>Quercus leucotrichophora</i>	Ban	White oak (Low level)
<i>Quercus semecarpifolia</i>	Kharsu ✓	Brown Oak (High level)
<i>Rhododendron arboreum</i>	Cheo	Red rhododendron
<i>Rhus punjabensis</i>	Titri	
<i>Rhus semialata</i>	Arkhar	Small pox tree
<i>Robinia pseudoacacia</i>		Locust Tree
<i>Salix alba</i>	Badha ✓	Willow
<i>Salix disperma</i>	Badha (Majnu)	-do-
<i>Sapindus mukurossi</i>	Ritha	Soap nut tree
<i>Symplocos paniculata</i>	Lodhar	
<i>Syzygium cumini</i>	Jaman ✓ ?	
<i>Taxus baccata</i>	Barmi	Yew
<i>Toona ciliata</i>	Tun ✓	
<i>Ulmus villosa</i>	Maral	Flu

B-SHRUBS/HERBS

<i>Abelia triflora</i>	
<i>Abrus precatorius</i>	Ratti
<i>Achillea millefolium</i>	Bhut kesi
<i>Achyranthes aspera</i>	Puthkanda
<i>Justicia adhatoda</i>	Basuti

<i>Agave cantula</i>	Ramban	Century Plant
<i>Agave angustifolia</i>	-do-	
<i>Ageratum conyzoides</i>		
<i>Ainslea aptera</i>	Mukh Nihani	Airon's rod
<i>Ajuga bracteosa</i>		
<i>Anaphalis royleana</i>		
<i>Anemone rivularis</i>		
<i>Anemone obtusiloba</i>		
<i>Antirrhinum orontium</i>		
<i>Aralia cachemirica</i>		
<i>Aristida spp</i>		
<i>Artemisia maritima</i>	Seski	
<i>Artemisia vulgaris</i>		
<i>Artemisia indica</i>	Charmar	
<i>Arundinaria falcate</i>		
<i>Arundodonax spp.</i>		
<i>Asparagus adscendens</i>		
<i>Asparagus racemosus</i>		
<i>Atylosia scarabaeoides</i>		
<i>Bambusa arundinaria</i>	Narl	Thorny bamboo
<i>Berberis chitria</i>	Kemal/Kasmal	
<i>Berberis asiatica</i>	-do-	
<i>Berberis lycium</i>	-do-	
<i>Berberis kunawurensis</i>	-do-	
<i>Bergenia ligulata</i>	Pathar tor	
<i>Bohemeria malabaricum</i>		
<i>Caesalpinia crista</i>		
<i>Calotropis gigantea</i>	Ak	
<i>Cannabis sativa</i>	Bhang	
<i>Carisso opaca</i>	Gama	
<i>Carissa spinarum</i>	-do-	
<i>Cascabela thevetia</i>		
<i>Casearia elliptica</i>		
<i>Casearis graveolens</i>		
<i>Casearia tomentosa</i>		
<i>Cassia occidentalis</i>	Alo	
<i>Cassia sophera</i>	-do-	
<i>Cassia obtusifolia</i>	Relu	
<i>Catunaregam splnesa</i>	Mainph	
<i>Celosia argentea</i>		
<i>Cenchrus spp.</i>		
<i>Chenopodium album</i>	Bathu	
<i>Chrysanthemum leucanthemum</i>		
<i>Chrysopogon spp</i>		
<i>Colebrookia oppositifolia</i>	Dharoo s	
<i>Commelina oblique</i>		
<i>Commelina paludosa</i>	Chhura	
<i>Colocasia esculenta</i>		

<i>Coriaria nepalensis</i>	Richh-ka-Anchal	
<i>Cornus capitata</i>	Haleu	Dogwod shrub
<i>Cotinus coggygria</i>	Tung	
<i>Cotoneaster acuminata</i>	Rheuns	
<i>Cotoneaster sandakphuensis</i>	-do-	
<i>Contonaster vulgaris</i>	-do-	
<i>Crataegus oxyaeantha</i>		
<i>Crotalaria juncea</i>	San	Hemp plant
<i>Curcuma aromatica</i>	Ban Haldi	
<i>Cyathula tomentosa</i>		
<i>Cymbopogon martini</i>		
<i>Cynodon dactylon</i>	Dub grass	
<i>Cynoglossum zeylanicum</i>	Gumbri	
<i>Dactylis glomerata</i>		
<i>Daphne papyracea</i>	Niggi	
<i>Daphne oleoidies</i>	-do-	
<i>Datura metel</i>	Datura	
<i>Debregeasia salicifolia</i>	Shiaru	
<i>Dendrocalamus strictus</i>	Bans	
<i>Desmodium elegans</i>		
<i>Deutzia compacta</i>	Batti	Wild syringe
<i>Dianthus angulatus</i>		
<i>Dipsacus spp</i>		
<i>Dodonaea viscosa</i>	Mehndu	
<i>Duchesnea indica</i>	Straw berry	Strawberry
<i>Echinops echinatus</i>		
<i>Epilobium pseudobscurum</i>		
<i>Equisetum debile</i>		
<i>Erianthus munja</i>	Munj grass	
<i>Eriophorum comosum</i>	Sagar ghhas	
<i>Eulaliopsis binata</i>		
<i>Eupatorium adenophorum</i>		
<i>Euphorbia royleana.</i>		
<i>Flacourtia indica</i>		
<i>Flemingia spp</i>		
<i>Fragaria rubiginosa</i>	Strawberry	Strawberry
<i>Galium asperifolium</i>		
<i>Gerbera gossypina</i>	Khaphl	
<i>Girardinia heterophylla</i>	Aln	
<i>Spermadictyon suaveolens</i>	Padara	
<i>Heteropogon contortus</i>		
<i>Hibiscus inensis</i>		
<i>Hypericum oblongifolium</i>		
<i>Ilex dirtyrena</i>	Kanderu	The holy Oak
<i>Impatiens balsamina</i>	Mehndi	
<i>Impatiens gigantea</i>	-do-	
<i>Imperata arundinacea</i>		
<i>Indigofera heteranta</i>	Kathl	Indigofer

<i>Indigofera astragalina</i>	-do-	
<i>Indigofera cassioides</i>	-do-	
<i>Ipomoea</i>	Godhani	Jasmine yellow
<i>Jasminum humile</i>	Malti	Jasmine white
<i>Jasminum grandiflorum</i>		
<i>Jatropha curcas</i>		Cedar
<i>Juniperus communis</i>	Bither	-do-
<i>Juniperus recurva</i>	-do-	Lantana
<i>Lantana camara</i>	Panjphulli	
<i>Lantana indica</i>	-do-	Honeysuckle
<i>Lonicera angustifolia</i>	Kantias	
<i>Lonicera hispida</i>		-do-
<i>Lonicera quinquelocularis</i>	Bakhru	
<i>Mahonia nepalensis</i>		
<i>Micromeria biflora</i>		
<i>Mimosa rubicaulis</i>		
<i>Mirabilis jalapa</i>	Gulabas	
<i>Murraya koenigii</i>		
<i>Murraya paniculata</i>	Gandhelu	
<i>Myrsine africana</i>		
<i>Myrsine semiserrata</i>		
<i>Narcissus tazetta</i>	Nargis	
<i>Rorippa nasturtium</i>	Chhuch	Aquaticum
<i>Nerium indicum</i>		
<i>Opuntia spp.</i>		
<i>Origanum vulgare</i>		
<i>Orostegia limbata</i>	Boo	
<i>Oxalis corniculata</i>	Malon	
<i>Parrotiopsis jacquemontiana</i>	Killar	Wychhazet
<i>Parthenium hysterophorus</i>	Congress grass	
<i>Persea duthiei</i>	Bhadrol	
<i>Persea gamblei</i>	-do-	
<i>Persea odoratissima</i>	-do-	
<i>Phragmites maxima</i>		
<i>Pilosa umbrosa</i>		
<i>Plantago lanceolata</i>	Isabgol	
<i>Plantago erosa</i>		
<i>Plantago depressa</i>		
<i>Pectonanthus rugosus</i>	Kuthal	
<i>Plumbago zeylanica</i>	Chitrak	
<i>Potentilla spp.</i>		
<i>Primula spp.</i>		
<i>Prinsepia utilis</i>	Kangora	
<i>Pteris aquilina</i>	Ungar	
<i>Reinwardtia indica</i>	Basant	
<i>Rhamnus purpurea</i>	Luhish	
<i>Rhododendron campanulatum</i>	Sarngar	White rhododendron
<i>Rhus parviflora</i>	Tungla	
<i>Ribes himolense</i>	Rajae	Wild current

<i>Ricinus communis</i>	Arand	Castor plant
<i>Rosa macrophylla</i>	Karerbangulab	
<i>Roylea cinerea</i>		
<i>Royleana fabrifuga</i>		
<i>Rubus biflorus</i>	Akhre	Raspberry Red
<i>Rubus ellipticus</i>	Akhre	Raspberry Yellow
<i>Rubus fabrigufo</i>	-do-	Raspberry Red
<i>Rubus leucocarpus</i>	-do-	Raspberry Red
<i>Rubus niveus</i>	-do-	Raspberry Yellow
<i>Rubus paniculatus</i>	-do-	Raspberry Yellow
<i>Saccharum spontaneum</i>	Munj	Kankalu
<i>Sarcococca coriacea</i>	Diun	
<i>Sarcococca saligna</i>	Dium	
<i>Sida rhombifolia</i>		
<i>Silene vulgaris</i>	Takla	
<i>Skimmia anquetitia</i>		
<i>Solanum villosum</i>		
<i>Sorghum spp.</i>		
<i>Spiraea canescens</i>		
<i>Spiraea lindleyana</i>		
<i>Sporobolus spp</i>		
<i>Strobilanthes dalhouslanus</i>		
<i>Syringa emodi</i>	Chara	
<i>Taraxacum eriopodum</i>		
<i>Tinospora cordifolia</i>		
<i>Trema politoria</i>		
<i>Trifolium pratens</i>		
<i>Trifolium repens</i>		
<i>Typha elephantiana</i>		
<i>Veronica biloba</i>		
<i>Viburnum cotinifolium</i>	Talanj	
<i>Viburnum foetens</i>	-do-	
<i>Viburnum grandiflorum</i>	-do-	
<i>Viburnum mullaha</i>	-do-	
<i>Vitex negundo</i>	Bannah	
<i>Wikstroemia canescens</i>		
<i>Woodfordia fruticosa</i>	Dhawa	
<i>Xanthium strumarium .</i>		
<i>Yucca spp</i>		
<i>Zanthoxylum ormatum</i>	Timber/tirmir	
<i>Zizyphus nummularia</i>	Ber ✓	
<i>Zizyphus oxyphylla</i>	Ber	
<i>Zizyphus Oenoplia</i>	Ber	

C- CLIMBERS

<i>Ampelocissus eatifolia</i>	Panibel	Virginian creeper
<i>Bauhinia vahlii</i>	Taur	
<i>Cissampelos pareira</i>		

<i>Clematis montana</i>	Garol	Travelers joy
<i>Clematis buchananiana</i>	-do-	-do-
<i>Cryptolepis buchanani</i>		Parasite plant
<i>Cuscuta reflexa</i>		Ivy
<i>Hedera nepalensis</i>	Kural	Bangulab
<i>Rosa brunonii</i>	Karer/ Wild rose	
<i>Smilax glaucophylla</i>		Mistletoe
<i>Viscum album</i>		

D-GRASSES

<i>Agrostis royleana</i>	
<i>Agropyron longearistatum</i>	
<i>Andropogon</i>	Phulna
<i>Andropogon gryllus</i>	
<i>Cynodon dactylon</i>	Dub
<i>Erianthus ravennae</i>	
✓ <i>Erianthus fulvus</i>	Kahi
<i>Eriophorum comosum</i>	Ghor bagar
<i>Euliliopsis binnata</i>	Bhabar
<i>Ischaemum angustifolium</i>	Baggar
<i>Opilsmenus undulatifolius</i>	
<i>Panicum plicatum</i>	
<i>Pennisetum flaccidum</i>	
<i>Perotis latifolia</i>	
<i>Phleum asperum</i>	
<i>Pollinia fimbriata</i>	
<i>Setaria glouca</i>	Siun
<i>Setaria viridis</i>	

E- MEDICINAL PLANTS

<i>Abrus precatorius</i>	Gunjratt	
<i>Aconitum heterophyllum</i>	Patis	
<i>Aconitum chesmanthum</i>	Mohri	
<i>Aconitum violaceum</i>	Tilla	
<i>Acorus calamus</i>	Barian	
<i>Angelica glauca</i>	Chora	
<i>Aquilegia pubiflora</i>		
<i>Arisaema flavum</i>	Sampki makki	
<i>Arisaema helleberifolium</i>	Ki-kukri	Cobra plant
<i>Arisaema propingmum</i>	-do-	-do-
<i>Asparagus racemosus</i>	Satawar	
<i>Atropa acuminata</i>		
<i>Berberis spp</i>	Rasount	
<i>Corum carvi</i>	Kalazira	
<i>Cinnamomum tamala</i>	Tejpata	
<i>Digitalis purpurea</i>		
<i>Dioscorea bulbifera</i>	Khildri	

<i>Dioscorea deltoidea</i>	-do-	
<i>Ephedra gerardiana</i>		
<i>Gentia kurroo</i>	Karu	
<i>Geranium nepalensis</i>	Geranium	
<i>Gymnea sylvestra</i>	Gurmar	
<i>Herculum candicus</i>	Patlain	
<i>Centella asiatica</i>	Brahmituti	
<i>Jurinea dolamiaca</i>	Dhup	
<i>Mentha acquatica</i>	Pudina	Mint
<i>Mentha piperata</i>	-do-	
<i>Marchella esculenta</i>	Guchhi	
<i>Ocimum spp.</i>		
<i>Onosma bracteatum</i>	Ratta	Ratanjot
<i>Dactylorhiza hatagirea</i>	Salam Panja	
<i>Picrorhiza serophulariiflora</i>	Kaur	
<i>Phytolacca acinosa</i>		
<i>Podophyllum hexandrum</i>	Bankakri	
<i>Polygonatum multiflorum</i>		
<i>Polygonatum verticillatum</i>		
<i>Rumex hastatus</i>	Amlora	
<i>Rumex nepalensis</i>	-do-	
<i>Salvia nubicola</i>	Makhla	Dog flower
<i>Salvia mukerjeea</i>		
<i>Salvia moorcroftiana</i>	Thuth	
<i>Saussurea lappa</i>	Kuth	
<i>Bergenia ciliata</i>	Pathartar	
<i>Senecio spp.</i>		
<i>Solanum anguivi</i>	Bantobacco	
<i>Solanum erianthum</i>	-do-	
<i>Swertia angustifolia</i>	Pahari chirayata	
<i>Swertia chirayita</i>	Chirayata	
<i>Taraxacum eriopodum</i>	Dudhal	
<i>Thalictrum foliolosum</i>	Mach,har,Mar.	
<i>Thymus linearis</i>	Banajwaln	
<i>Valerinana jatamansii</i>	Smak	
<i>Verbascum thapsus</i>	Giddar lamaku	
<i>Viola odorata</i>	Banafsha	
<i>Viola canescens</i>	-do-	
<i>Withania somnifera</i>	Ashgandha	

GLOSSARY OF COMMON LOCAL TERMS

LOCAL NAME	EXPLANATION
Adhwar	Summer resort of local people where they move mainly to graze cattle.
Bahan	Floating
Balli	Round unsawn timber used in houses as rafters or posts.
Bartan	Rights of user.
Begar	Free labour
Behi	A spur
Chak	Included cultivation within a forest
Chakidar	Watchman
Dandasa	Trade name of walnut bark.
Deota	Local deity
Dhar	A ridge
Dharamsala	An inn
Dhangries	A professional labour which undertake charcoal burning
Dhulan	Land carriage
Dhulani	Labour engaged for land carriage
Dimdima	Sawn timber (by axe), cross section 25 cm x 25 cm to 30 cm x 30 cm with < 1.82 m.
Doghri	A small farm house usually away from the main village
Gad	A small stream with perennial water.
Gaddi	A professional grazier of sheep and Goats.
Ghall	Timber floating in stream or river.
Ghalu	Labour engaged in floating of timber.
Gharat	Flour mill run by water.
Ghasni	Grass land where from grass is cut.
Goth	A resting place of sheep and goats in the forest.
Gujjar	Nomadic buffalo grazier
Ghar	A land slip
Gurkha	A native of Nepal
Hakries	Small triangular split up pieces of wood usually < 1.5 m in length
Illaka	Area
Jetty	A side check dam constructed to reduce the velocity of river
Karam	An unit of measurement used in Revenue department which is equal to 4 feet 8 inches i. e. 1.4224 metres.
Karies	Scantlings
Khad	A water stream
Kharif	Rainy season crop
Khatis	Small pits carved out near water source to store water
Lamberdar	Village headman
Mali	Man employed on raising and maintenance of nurseries
Mohal/Mahal	A revenue estate/village.
Nautor	Land granted by Govt. for fresh cultivation
Nalla	A ravine or depression with or without water

Panchayat	Elected constitutional body comprising one or more villages
Panthara	A local water spring
Pargana	A unit comprising of several villages.
Patwari	Revenue official incharge of a patwar circle
Rabi	Winter crop
Rahdari	Grazing fee
Rakha	Watcher
Reri	Ridge/Spur
Ruta	Grass land preserved for growing grass for fodder.
Shikari	A hunter
Tehsil	Sub-division of a district.
Tehsildar	Revenue officer incharge of a tehsil.
Thach	Small grassy blank in alpine forests used as a halting place by graziers.
Tibba	Peak
Watbandi	Construction of small wall around the field.
Zamindar	Cultivator or farmer.

LIST OF COMMON ANIMALS AND BIRDS

A. WILD ANIMALS

Scientific Name	Local Name	English Name
<i>Agame tuberculata</i>	Kirli	Common lizard
<i>Ancistrodon himalayensis</i>	Viper	Himalyan pit viper
<i>Bungarus caeruleus</i>	Karait	Karait
<i>Canis aurs</i>	Jackal	Gidarh
<i>Cervus unicolor</i>	Sambher	Himalyan goat
<i>Etaurista petaurista</i>	Ean	Indian flying squirrel
<i>Felis bengalensis</i>	Chita billi	Leopard cat
<i>Felis chaus</i>	Jangli billi	Wild cat
<i>Hemidactylus broki</i>	Kirli	Common house lizard
<i>Herpestes auro-punctatus</i>	Choota neola	Small Indian mongoose
<i>Herpestes edwardist</i>	Neola	Common mongoose
<i>Hystrix indica</i>	Sahi	Indian Percupine
<i>Lepus nigricollis</i>	Khargosh	Indian Hare
<i>Macaca multata</i>	Bandar	Monkey
<i>Martes flavigula</i>		Himalayan Pine Marten
<i>Moschus moschiferus</i>	Kastura	Musk deer
<i>Muntiacus muntjak</i>	Kakker	Barking deer
<i>Naja naja</i>	Cobra	Indian cobra
<i>Nemorhaedus goral</i>	Ghoral	Ghoral
<i>Panthera pardus</i>	Baghera/Bagh	Leopard
<i>Peradoxurus heromaphrodites</i>	Mushak billi	Himalayan Palm Civit
<i>Presbytis entelus</i>	Langoor	Common langoor
<i>Ptyas mucausus</i>	Dhaman	Rat snake
<i>Rattus rattus</i>	Chuha	Common house rat
<i>Rhiniophos affinis</i>	Chamgadar	Bat
<i>Selenarctos thibetanus</i>	Kala bhalu/Richh	Himalayan black bear
<i>Susscorfo cristatus</i>		Indian Wild Bear
<i>Sus scrofa</i>	Jungli Suar	Wild pig
<i>Totera indica</i>	Chuha	Indian Gerbille
<i>Ursus arcots</i>	Lal Bhalu/Richh	Brown bear
<i>Varanus monirer</i>	Goh	Common Indian Lizard
<i>Vulpes vulpes</i>	Lomri	Red fox

B. BIRDS

Scientific Name	Local Name	English Name
<i>Accipiter nusus</i>	Baj	Sparrow hawk
<i>Acridotheres trististris</i>	Maina	Common house maina
<i>Aquila chrysaetos</i>	Chil	Golden eagle
<i>Alectoris chukor</i>	Chakor	Chakor
<i>Catreus wallichi</i>	Cheer	Cheer pheasant
<i>Columba livia</i>	Kabuter	Blue rock pigeon
<i>Columbia palumbus</i>	Kabuter	Wood pigeon
<i>Corvus macrorhynchos</i>	Kauva	Jungle crow
<i>Chforophus simlae</i>	Kathphora	Himalyan wood packer

Cuculus sparviroides
Cuculus saturatus
Dendrocitta formosae
Francolinus francolinus
Francolinus pandicerianus
Gallus gallus
Gyps himalayensis
Huohua nepalensis
Leophura leucomelana
Lophophorus impeyanus
Nucifraga caryocatactes
Parus rubidiventris
Psittacula eupatoria
Pucrasia macrolopha
Pycnotus leucogenys
Scalopax rusticola
Streptopelia chinensis
Tragopan melanocephalus

Papiha
Koel

Kala titter
Titter
Jangali murga
Gidh
Ullu
Kalij
Monal
Chilankra

Tota
Plash
Bulbul

Ghuggi
Zuzurana

Large Hawk Cuckoo
Indian Cuckoo
Himalayan tree Pie
Black partridge
Grey partridge
Red Jungle fowl
Himalyan Griffon vulture
Forest eagle owl
Kalij pheasant
Monal
Himalyan nut cracker
Black Tit
Large Indian Parakeet
Koklas
Bulbul
Wood cock
Spotted dove
Western Tragopan

PART I
SUMMARY OF FACTS ON WHICH
PROPOSALS ARE BASED

CHAPTER-I THE TRACT DEALT WITH

1.1 NAME AND SITUATION This Working Plan deals with all protected forests (both demarcated and Un-demarcated) of Karsog forest division. This division is a part of Mandi district, Karsog sub-division but the administrative boundaries of Karsog sub-division do not coincide with forest division boundaries. Karsog forest division comprises entire Karsog sub-division (Karsog Tehsil) along with some parts of Thunag Tehsil, Nihri sub-Tehsil which drains into Sutlej River. The entire forest division forms the catchment of Sutlej river and the tract lies between latitude $31^{\circ} 13' 43''$ to $31^{\circ} 31' 51.31''$ N and longitude $77^{\circ} 01' 06.52''$ to $77^{\circ} 23' 23.76''$ E. Karsog forest division came into existence in 1978 by separating areas from old Suket Forest Division vide HP. Govt. Notification No. 1-20/69. SF (East) Dated 31-8-78/1st Sep. 1979. It is bounded in the North by Shikari Devi sanctuary, in the East by Deori- Behna Khad and Sutlej river bordering Ani forest division, in the South by river Sutlej which delimits it from Shimla forest division and in the West by the ridge passing through Kamru Nag dropping into Saror Khad joining river Sutlej, separating it from Suket forest division. The Head quarter of Karsog Forest Division is located at Karsog, 120 Km. from Mandi and 110 Km from Shimla via Tattapani.

1.2 CONFIGURATION OF THE GROUND The tract is chiefly mountainous with narrow valleys along the tributaries of river Sutlej flowing through the tract. The main valleys are Karsog and Pangana. The altitude varies from 600m near Tatapani to 3000m above mean sea level near Shikari-Kamru Nag ridge. A series of parallel ridges originate from the main Shikari Devi viz. Raigarh, Magrugarh, Chhattri-Jalori pass which run North-South up to the river Sutlej where these drop sharply in steep slopes. Similarly there are off shoots of main ridges merging in the tributaries of the river Sutlej.

1.2.1 The prominent ridges of the division which form intricate mass of steep, precipitous hills and enclosed valleys are Chindi (Kamasu) Dhar, Maidangarh Dhar, Dhmoon Dhar and Chowasi Dhar.

1.2.2 The tract is drained by Dhanera, Pangna (Bitheri) Chalner, Kotlu, Showad, and Chhiyora (Behna) Khads into the river Sutlej.

1.3 GEOLOGY, ROCK & SOIL The rock sequence in Karsog division ranges in age from Late Archean to Early Pleistocene. The generalized litho-stratigraphy of the division is given in Table 1.1. The lesser Himalayan terrain is constituted of Late Archean to Proterozoic succession represented by Sundernagar, Vaikrita, Kullu and part of Haimanta Group. The salient features of the various lithounits exposed in Karsog division are described as under:

Sundernagar Group It comprises low grade Volcano-sedimentary. The Common 'B' formation is characterized by cross bedded quartzarenite with occasional basic flows.

Vaikrita Group This group is represented by low grade metapelite, carbphyllite and quartzite with calcareous pockets. The Vaikrita group is Divisible into the Morang formation comprising of dominantly pyritous Quartz-schist followed by the Shiasu formation characterized by argillaceous suite.

Kullu Group The Kullu group is divisible into Khamrada, Ghar and Khokan formations in ascending order. The basal most Khamrada is characterized by pyritous carb-phyllite, limestone and quartzite, followed by the gneissic sequence of the Gahr formation which in turn succeeded by the Khokan Formation constituted of meta-argillite suite of chlorite Phyllite and minor Quartz schist.

Tattapani Volcanic It crops out as a thrust bound linear strip forming Southern fringe of Mandi district.

Table 1.1 Lithological Descriptions

Age	Group	Formation	Lithological Description
Recent to Sub Recent			Alluvium lacustrine sediments, hill wash and scree material
Early Paleozoic	Mandi Granitoid		Granite gneiss and biotite gneiss
Vendian	Haimanta	Katarigali	Laminated Slate, Carb-Phyllite and minor platy limestone
		Manjir	Pebby siltstone, grit and diamictite
Mid-Proterozoic [Middle to late Riphean]	Simla	Basantpu	Platy limestone and slate
Middle Riphean		Tattapani Volcanic	Basic flows and Quartzarenite
Mid-Proterozoic (Early to middle Riphean)	Shali	Tattapani	Bedded dolomite and black shale
		Sorgharwari	Pink lime stone with red shade partings
		Khatpul	Massive dolomite with red shale at base
		Khaira	Pink and purple quartzite with red shale partings
		Ropri	Dolomite, red shale and salt grit.
Middle Proterozoic	Kullu	Khokan	Chlorite-phyllite minor quartzite.
		Gahr	Streaky augen gneiss and minor quartzite.
		Khamrada	Carb phyllite and limestone
		Shiasu	Slate, Phyllite and carb-phyllite
Early Proterozoic	Vaikrita	Marang	Pyritous-quartz schist, schist and quartzite
Early Proterozoic/ Late Archean	Sundernagar	B-Formation	Quartzarenite with purple shale

(Source: GSI Chandigarh)

Shali Group The group is divisible into five formations, the basal most being Ropri which is represented by dolomite, red shale and pink salt grit. The Khaira formation comprises cross hedded purple to red quartzite. The Khatpul formation is constituted of massive stromatolitic dolomite while Sorgharwari formation is represented by pink cement grade limestone with Red shale partings. The Tattapani is the upper most lithounit constituted of bedded dolomite grey shale.

Haimanta Group This group is divisible into Manjir and Katarigali Formations. The Manjir is made up of diamictite, pebbly slate. The Katarigali formation comprises dark grey laminated slate, carb-phyllite and occasional limestone.

Mandi Granitoid The Granitoid comprises porphyroblastic granite-gneiss, Homophonous biotite-muscovite granite and leucogranite phases.

Quaternary Deposits The quaternary fills of fluvio-glacial origin form gentle sloping flat ground in Karsog area which now serves as excellent cultivation fields.

In the north corner of the area around Chhatri a folded sequence of metasediments belonging to Vaikrita and Kullu group of rocks are present. The metasediments mainly comprises dark grey slate, micaceous quartzite, calcareous meta siltstone, slate, phyllite and carbonaceous slates. The middle parts of Karsog forest division include Katanda, Pangna and Karsog localities which are generally occupied by biotitic schist and the granitoids occurring with in it.

The areas between Aisindhi and Khannella are occupied by massive dolomite, pink and grey limestone with sporadic shale and quartzite and purple, pale, greenish and grey shale and slate with thin bedded

quartzite. A band of schist and quartzite is present in a belt running in roughly E-W direction between Pangna and Alsindi. Around Tattapani area, massive pink and grey dolomite and phyllite slates are exposed.

1.3.1 SOIL The metamorphosed granite and rocks of outer Himalayas weather into well drained deep loamy to sandy loam soils. These areas bear excellent crops of Deodar of very good quality. However, schist, slates and shales weather into fine grained clays whereas quartzites, limestone and dolomites results in shallow texture soils, which on the whole are very well drained. This bears Chil of poor quality. All type of soils met within the tract are generally suitable for tree growth. Soils in the lower areas are generally sandy loam to loam and poor in organic matter. In open areas with heavy pressure of grazing, the soil is shallow and in many places especially close to habitations and cattle paths, even rocky outcrops are not uncommon.

The soil in this division is broadly classified into brown hill and sub mountain soil. The brown hill soil is sandy loam in texture and acidic in reaction. It is medium in organic carbon, normal in potash but deficient in phosphorus. The sub-mountain soil is loamy in texture and also acidic in reaction but rich in organic carbon, poor in available phosphorus and medium in potash content.

In areas having adequate forest cover especially of deodar, spruce, fir and kail (when on northern slopes) the soils are generally deep to very deep. In deodar and kail forests the soil has adequate organic matter whereas in fir forests humus layer is thick. However, soil in chil forests is poor in organic matter due to repeated burning which makes it friable and thus vulnerable to erosion. The soil under coniferous forests shows an acidic reaction but in lower reaches of sub tropical zone it tends to be neutral. Ban forests are generally accompanied by mature soils of good depth and high water holding capacity and acidic in reaction.

1.4 CLIMATE AND RAINFALL: By virtue of elevation the climate varies from temperate at high elevation to sub-tropical at lower elevation. The tract in sub-tropical zone has very hot summer. Cold to severe cold climate prevails in the high hills in winter. Seasons are well marked. The winter lasts from November to February and moderate to heavy snowfall occurs in high altitude and is characterized by heavy frost in the lower areas. The month of March is cool and bright but temperature rises rapidly from April and the rise continues till the break of monsoon by the end of June or in the beginning of July. Occasional thunder and hailstorms are not uncommon during May & June, which are otherwise dry months.

The monsoon start from the end of June and are fairly good in July and last till mid of September. During these months the areas receive bulk of precipitation of the year. Rain gauges have been installed at Tattapani, Karsog & Chauridhar but no reliable data is available. Table 1.2 summarizes the average rainfall data of Karsog station from 1981-2010. Total rainfall in last thirty years varies from a minimum of 633mm in 1991 to a maximum of 1450.3mm in 1988. However in last ten years the average rainfall has been 894.1 mm as against an average of 972.69 mm for last 30 years (1981-2010). There has been a decrease of about 8% in decadal average rainfall as compared to thirty years average. Number of rainy days in different months of the year based on the last 15 years average (1989 to 2004) for stations in the tract and the adjoining areas has been shown in table 1.3

1.4.1 TEMPERATURE The temperature in different parts of the tract varies according to altitude. The temperature begins to rise from the end of February till June. Temperature is lowest in the month of January. Winter is quite chilly in the temperate zone.

Table 1.2 Rainfall Data of Karsog Station (In mm)

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total

1981	92	375	143.6	23.6	22.2	72.3	204	279.8	49.8	-	46	-	1308.3
1982	104	25	73.8	26	109.2	55.8	131.8	71.5	19.5	11.4	7	27	662
1983	130.7	52	101.9	111	92.2	46.8	113	165	138	76	-	5.5	1032.1
1984	9	152	23	36	12.2	81.2	86.5	106.1	110.8	-	1.4	42.2	660.4
1985	70	21	19.4	NA	36	56	319.7	228.8	109.4	111.4	6	NA	977.7
1986	1.2	55.8	96.3	47.7	110.4	184	156.2	173.9	85	50.9	56.8	21.6	1039.8
1987	52.2	69.1	79	44.6	282	54.9	84.2	74.8	16.3	74	-	6.5	837.6
1988	34.5	69.2	145.9	NA	62	91.6	408.3	375.4	263.4	-	-	NA	1450.3
1989	NA	43.3	67.9	4.1	76	NA	312	187	45	-	75	65	875.3
1990	11	194	224	5	98	145.2	198	199.3	66	15	NA	107	1262.5
1991	29	106	82	73	23	38	58	91	65	-	NA	68	633
1992	198	65	82	33	63	25	242	307	149	-	11	-	1175
1993	105	59	143	13	34	NA	406.2	472	-	-	8	-	1240.2
1994	46.5	125	NA	82.2	110	110	282	220	49.1	7.6	-	28.7	1061.1
1995	41.3	126.6	66	-	11	38.8	334.6	211.9	185	7.6	NA	NA	1022.8
1996	84.6	52.4	129	47	67	136	86.6	183	116.4	35	NA	-	937
1997	35	29.2	66	122.7	116.4	112.1	76.4	356.3	48.3	51.4	86.1	70.4	1170.3
1998	16.4	106	136	97	50	119	106	197	187	149	12	NA	1175.4
1999	51	55	-	NA	136	128	313	106	101	-	-	NA	890
2000	57	76	61	13	102	148	303	63	3	-	3	-	829
2001	5	14.5	76	38	66	192	177	48	7	-	4	11	638.5
2002	38	99	90	87	14	73	14	217	157	8	-	-	797
2003	32	72	111	61	13	88	229	220	67	-	8	38	939
2004	98	5	-	30	41	30	109	145	22	112	-	2	594
2005	50.5	141	2	-	40	160	368	49	119	-	-	-	929.5
2006	102	-	78	35	94	80	170	201	55	17	5	30	867
2007	0	129	196	0	52	57	160	259	89	2	Nil	30	974
2008	104	57	-	28	72	269	149	248	208	10	4	13	1162
2009	23	15	36	39	88	33	110	202	343	0	23	0	912
2010	14	9	18	18	46	188	358	261	173	43	NA	NA	1128
Avg	56.38	82.69	90.26	44.6	71.29	100.45	202.18	197.29	105.07	43.41	22.27	33.29	972.69

[Source: Deptt. of Meteorology, Shimla]

Table 1.3 AVERAGE NUMBERS OF RAINY DAYS IN DIFFERENT MONTHS

Station	Jan	Feb	Mar	Apr	May	Jun	July	Aug	Sep	Oct	Nov	Dec	Total
Karsog	4	4	5	3	5	6	14	12	7	2	1	2	65
Sunni	5	6	6	4	6	7	15	12	7	3	2	3	76

[Source: Deptt. of Meteorology, Shimla]

Temperature data of Karsog is presented here in Table 1.4

Table 1.4 Temperature data of Karsog Station

		Jan	Feb	Mar	Apr	May	Jun	July	Aug	Sep	Oct	Nov	Dec
Average	max	8.7	10.1	10.1	14.0	22.4	20.5	16.1	17.3	14.6	17.5	14.3	10.4
	min	2.2	2.8	3.9	7.6	13.3	16.6	11.8	11.0	9.9	10.6	8.6	5.3

[Source: www.madweather.com]

1.4.2 EFFECTS OF CLIMATE ON FOREST GROWTH

a) Heavy rains in monsoon or pre- monsoon sometimes cause havoc to tree growth which result in soil erosion, landslides and floods.

b) From April to June when temperature is high, the probability of forest fires is very high in Chil areas. Young plants in the nurseries and plantations suffer from persistent drought and large scale mortality is noticed in areas with sandy and dry soils. The natural springs run dry, thus causing a problem of water for raising nurseries.

c) Autumn (September –October) are relatively dry months.

d) All the areas above 1000 m experience severe frost especially in the depressions during winter.

e) High hill areas experience snow during November to February; many plants are uprooted or broken. In young regeneration areas root lifting due to frost is also noticed. However, snow is very helpful for augmenting ground water and is also utilized by the plants.

1.4.3 WATER SUPPLY The main streams and their tributaries originating in the high hills covered by well stocked tracts of silver fir, spruce, deodar, kail & ban oak have perennial water supply. Behna/Chheora Khad, Chairra/Kao Khad and Pangana Khad are the main streams in the tract which are tributaries to Sutlej River.

Streams which originate from dry ridges or low lying chil areas and have inadequate vegetative cover generally get flooded during rains & dry up in summer. The agricultural lands are mostly rainfed except Karsog and Pangna villages with meager irrigation facilities. Flash floods are common almost in all the streams and nalas.

1.5 DISTRIBUTION AND AREA The forests are interspersed throughout the tract and are honeycombed by patches of cultivation. There has been variation in the area figures provided by revenue department vis-à-vis survey sheets from the past working plan. In the plan under revision revenue figures of area have been adopted. The same figures have been taken in this plan also. The total geographical area of Karsog Forest Division is as under (as per revenue record):-

Table 1.5 Geographical Areas of Ranges (in Sq Km)

S.No.	Range	Geographical Area (Sq.Km)
1	Pangana	220.87
2	Karsog	181.51
3	Seri	136.23
4	Magroo	79.26
	Total	617.88

[Source: Revenue record]

However, when the area is calculated through GIS or using Google Earth, the area of the Division comes to be 618km². Area of each beat as calculated using GIS is given in Table 1.6 below.

Table 1.6 Geographical Area of Beats (in ha)*

Range	Block	Beat	Area (ha)	Range	Block	Beat	Area (ha)
Karsog	Bagsad	Mahunag	1048	Magroo	Magroo	Seri Mangarh	1504
Karsog	Bagsad	Dharmour	1909	Magroo	Magroo	Lassi	1605
Karsog	Bagsad	Bakshar	1555	Magroo	Magroo	Thanser	1295
Karsog	Bagsad	Parlog	1691			Magroo Block	4404
Karsog	Bagsad	Sapnot	1697	Magroo	Mahog	Mahog	1833

		Bagsad Block	7901	Magroo	Mahog	Kathaundhar	1389
Karsog	Karsog	Dopha	1762			Mahog Block	3221
Karsog	Karsog	Karsog	2053			Magroo Range	7625
Karsog	Karsog	Kaniand	1570	Pangna	Balindi	Kanda	1085
Karsog	Karsog	Sanarli	1246	Pangna	Balindi	Sarchach	1809
		Karsog Block	6631	Pangna	Balindi	Balindi	937
Karsog	Mamel	Mehandhi	2051	Pangna	Balindi	Restadhar	2221
Karsog	Mamel	Majel	987			Balindi Block	6052
Karsog	Mamel	Mamel	2302	Pangna	Chindi	Belar	1498
		Mamel Block	5340	Pangna	Chindi	Chindi	1632
		Karsog Range	19872	Pangna	Chindi	Dab	1344
Seri	Gowalpur	Sachan	1426			Chindi Block	4475
Seri	Gowalpur	Pokhi	1277	Pangna	Pangna	Surehi	1421
Seri	Gowalpur	Teban	1224	Pangna	Pangna	Pangna	1046
		Gowalpur Block	3927	Pangna	Pangna	Gushal	946
Seri	Richni	Pathrevi	1301	Pangna	Pangna	Begli	1014
Seri	Richni	Seri	1353	Pangna	Pangna	Kutachi	1409
Seri	Richni	Richhni	1251			Pangana Block	5836
		Richni Block	3906	Pangna	Tattapani	Telehan	1911
Seri	Seri	Nanj	1384	Pangna	Tattapani	Alsindi	912
Seri	Seri	Dhamoon	1574	Pangna	Tattapani	Thalli	2745
Seri	Seri	Nihari Naal	1576			Tattapani Block	5569
		Seri Block	4534			Pangana Range	21931
		Seri Range	12367			Karsog Division	61795

*It is proposed to re-organise existing 51 beats into 41 proposed beats.

The whole area has been measured at the time of last revenue settlement. Detailed classification of this is tabulated below:

Table 1.7 Classification of Area

PARTICULARS		NAME OF TENSIL/SUB-TENSIL (Area in ha.)			
(A)	Private Land	Karsog	Nihri	Thunag	Total
i.	Cultivated	11,690.47	694.6	1259.24	13,644.31
ii.	Banjar Jadid	45.98	-	11.63	57.61
iii.	Banjar Kadim	683.95	33.17	7.1	724.22
iv.	Kharlater	1,144.95	95.97	54.58	1,295.50
v.	Gair Mumkin	1037.78	66.86	110.17	1,214.81
vi.	Bani	26.1	1.77	1.49	29.36
	Total	14,629.23	892.37	1,444.21	16,965.81
(B)	Govt. Land	Karsog	Nihri	Thunag	Total
i.	Jungle Mehfuza Mehduda (DPF)	28456	1685	2998	33,139
ii.	Jungle Mehfuza Gair Mehduda (UPF)	892	8	23	923
iii.	Ruta Sarkar (Ghasnis) Pasture land	75	16	47	138
iv.	Charagah Darkhan (Pasture with trees)	5545	541	716	6,802
v.	Charagah Bila Darkhan (Pasture without trees)	2171	94	157	2,422
vi.	Bani	1	-	1	2

vii.	Nurseries	0.3	-	-	0.3
viii.	Gair Mumkin (Unculturable land)	1247	61	89	1,397
	Total	38387	2405	4032	44824
	Grand Total	53015.81	3297.46	5476.06	61789.33

(Source: Revenue record)

The range-wise position of forest area is as under:-

Table 1.8 Range- wise Forest Area (in ha)

Name of Range	DPF's (ha)	U.P.F's (ha)	Total (ha)
Pangna	10,972.69	469.76	11,442.45
Karsog	9,986.97	115.64	10,102.61
Seri	7,487.30	79.83	7,567.13
Magroo	4,692.05	9.81	4,701.86
Total	33,139.01	675.04	33,814.05

The balance UPFs left in this division are small in bits, honeycombed and surrounded by cultivation. 1.5.1 Diversion of Forest Land under Forest Conservation Act, 1980 The developmental works like road construction, hydro-electric projects, installation of industries, construction of building constitute the priority of the Govt. for which, sometimes, forest lands are diverted for non-forestry purposes. In our state, the private land holdings are small and the pressure on forest lands remain for the execution of developmental activities. The forest clearance for the establishment of Kol Dam has been taken at state level. The latest position of other FCA cases of Karsog division (as in August, 2010) is as under:

Table 1.9 Diversion of Forest Land

S.No.	Name of Proposal	User Agency	Extent of forest land to be transferred (ha)	Status
1	C/O Kol Dam Hydroelectric Project 800MW	NTPC Ltd.	84.8635 ha out of total 954.69 ha of the state	Approved vide GOI letter No. 8-227/87-FC dated 11.6.90
2	C/O Katanda-Pokhi road	Xen PWD Karsog		Approved
3	C/O Bagsharh-Shaongi road	Xen PWD Karsog	3	Not approved so far
4	C/O Shanoti-Dhawas road	Xen PWD Karsog	3.36	Not approved so far
5	C/O Chhatrri-Chaplandi-Gattu road	Xen PWD Karsog	2.86	Not approved so far
6	C/O Gadagusain-Bagra-Chatri(now Chajgalla-Surl) road	Xen PWD Karsog	3.08	Not approved so far
7	C/O Dharmour-Shakra road	Xen PWD Karsog	3.27	Not approved so far
8	Magroogalla-Ruhmani road	Xen PWD Sundernagar	2.7	Not approved so far
9	C/O ITI buiding Karsog	Director Technical Education S/nagar	0.49	Not approved so far
10	C/O 5 MW Ani(Behna) Hydro-electric Project	Growel Energy Company Ltd. Chandigarh	2.614	Not approved so far
11	Construction of 33/22KV su station at Patalabehali	HPSEB		Approved in principle.

(Source: DFO Office Karsog)

1.6 Nomenclature of Forests Names of forests remain the same as in the preceding working plan. The system of numbering old DPFs as OD and new as ND has been abandoned and the forests have now been numbered and designated as under:

"D 200 Boh Parala" means demarcated protected forest having a serial number 200 in Karsog division. Similarly, U 10 Jeru means undemarcated protected forest with serial number 10.

The area figures of erstwhile Suket Working Plan remained a point of controversy. The area figures were different for each DPF when compared with (i) Jhuna Singh's report (ii) Revenue settlement figures (1962-68) (iii) 1952-58 Forest Demarcation figures and (iv) Sewal's working Plan figures. In order to remove the controversy about the areas of old DPFs, area figures as given in the revenue record have been adopted and area figures of land revenue settlement have been taken into account.

1.7 STATE OF BOUNDARIES

1.7.1 (Old Mandi State Forests) First settlement took place in 1917 when the forests of Mandi State were demarcated with the pillars of rough dressed stones during preparation of Gorrie's working plan. These forests were again measured at the time of demarcation by the department (1952-58) and all the boundary pillars fixed earlier were located. No boundary register is available showing the number of boundary pillars, distance from pillar to pillar. However, the number of boundary pillars was recorded from the 1:15000 maps prepared by Survey of India.

1.7.2 Old Suket State Forests The Suket State was surveyed in 1919-20 and a revision was carried out in 1937 by Survey of India. The maps pertaining to 1937 survey were prepared on 1:31680 scale but complete set is not available. With the help of Jhuna Singh's Working Plan (1924-53) as corrected by Davis in 1932, Sewal made an effort to locate the forests to show their boundaries on 1:6360 scale survey sheets. DPFs were re-demarcated during departmental demarcation operation (1952-58) and boundary pillars were constructed, *chak* with in forest areas were also demarcated and *chak* pillars were constructed.

1.7.3 The demarcated protected forests of the entire areas were taken in hand during 1983-84 to 1990-91. The boundary pillars have been constructed in all the demarcated protected forests of the division. Boundary pillar registers for all DPFs have been maintained which give the detail of distance from pillar to pillar and location of the pillars.

1.7.4 MAPS Survey of India, prepared maps covering the entire area of Karsog Forest Division during 1965-69 on 1:15000 scale giving details of the boundary pillars. In most of the cases the revenue maps prepared during revenue settlement (1962-68) do not coincide with the survey sheets. This is due to the reason that new DPFs have been constituted by taking into consideration, the old DPFs as the base already entered in revenue record at the time of settlement.

1.8 LEGAL POSITION Karsog forest division consists of forests of Karsog Tehsil, partly of Thunag Tehsil and Nihri sub Tehsil of Mandi district of Himachal Pradesh. The state forests were classified by Wright in 1917 into DPFs, UPFs, and the rights of villagers in the forests were recorded. With the formation of state of Himachal Pradesh, the Govt. of Himachal Pradesh became the owner of all the waste & forest lands with effect from 15.4.48 and the Indian Forest Act was made applicable to these forests vide H.P. Govt. (Forest Deptt.) Notification No. 386-18 dated 25.12.48.

1.8.1 In the erstwhile Suket State comprising Sundernagar and Karsog tehsils the forest settlement was carried out during 1923. The legal position of these forests is more or less identical to that of erstwhile Mandi State forests with effect from 15-4-48 vide notification No. 386-18 dated 25.12.48 vide notification referred to in para 1.8.

1.8.2 All the forest and waste lands have been declared as protected forests vide Himachal Pradesh Govt. Notification No. Ft. 29-241-BC/49 dated 25-2-1952. Now, as per PCCF Memo No. Ft. 48-66/83 (FCA) dated 20.04.10, FCA is applicable on all such lands; (Annexure I). Thus, all the Govt. waste lands existing in this

division are protected forests. All the trees in forests declared protected have been reserved vide Govt. Notification No. Ft. 29-241-BC-149 dated 13.11.1963 w.e.f. 1st January, 1964.

1.9 RIGHTS AND CONCESSIONS Rights and concessions of local people in various DPFs have been recorded in the settlement reports. The state has permitted certain kind of usages (*Bartan*) in the forest, to meet the reasonable domestic and agricultural requirements of the people, in the matter of grazing and forest produce and such usages will be maintained so far as they are compatible with the system of forest conservancy suited to the requirement of state and the people. The *bartans* are appended to cultivated land assessed to land revenue or the land revenue of which has been assigned.

The *bartans* are subject to the condition that *bartardars* will be responsible for the protection of the forests in which the *bartans* are exercised. In case of failure, the rights can be curtailed or suspended. Another condition attached with *bartans* is that, the forests whether demarcated or un-demarcated cannot be burnt to get fresh growth of grass. Grazing, grant of timber, lopping & collection of minor forest produces are some of the important *Bartans* admitted in the settlement report.

GRAZING: The right holders are permitted to graze their cattle, buffaloes, sheep and goat for the whole year without any restriction in the forests, not closed to grazing by any specific order. The forest settlement provides that the rights of the villagers are limited to reasonable agricultural and domestic requirements of the people.

GRANT OF TIMBER: Timber Distribution (T.D.) is a unique policy in the colonial history of forest management. It is a policy that provides every landowner with the right to harvest timber for the construction and repair of their houses. This policy while providing for a basic need of the local population is also the single largest reason for timber harvest in the western Himalayan region. It results in the harvest of 100,000 cubic meters of prime timber till recently before Hon'ble High Court while disposing a PIL directed the State Govt. to rationalize the process as rates for T.D. were fixed at 20% of the market rates at the time of the initial forest settlements, for all species that had a market value at that time. Thus practically while the market rates had increased over 15,000 to even 88,000 times (in case of Fir), state used to charge the original rates till 2005. Since the timber was available at such dead cheap rates, most of it was also mis-used and was sold further at commercial rates.

The state has recently notified H.P. Forest (Timber Distribution to Right Holders) Rules, 2010 for the rationalization of grant of timber. The Facts and Figures thereof are given below:

1. Introduction These rules cover the Timber Distribution (T.D.) Rights for construction and maintenance of residential house, cowshed that too for bonafide domestic use without affecting the other rights contained in the Forest Settlements in operation. Some doubts and misconceptions are uncalled for and are clarified as under.

- Forest centered based on the principle that if the forests will remain then only people will be able to exercise rights namely of Timber distribution (TD). Further these rights are People centered more so rural poor centered.

- The rights recorded in settlement other than Timber distribution (TD) like free grant for last rites of the dead, collection of medicinal herbs, grazing etc. have not been touched upon and would remain to be exercised as they were in the past.

- To have transparency involvement of people in Timber Distribution through their Gram Sabha has been ensured.

2. Rationalization Process Hon'ble High Court before deliberating and deciding the issue under consideration of PIL with them directed the State Govt. to rationalize the timber distribution process which took into account the following aspects

- As the TD is concerned with Land holding in rural areas that too for construction of house/cowshed for domestic purpose the TD in Urban areas has been done away with.

- If the Right Holders have land holding at more than one place then TD will be granted at only one place of the choice of land holder.
- TD will only be enjoyed by original Right Holder and not by those who have purchased land after taking permission under Section 118 of the HP Tenancy and Land Reforms Act, 1972 from now onwards.
- The ratio of TD rates of Chil, Deodar and Kail at the time of Forest Settlement when their rates of TD were initially fixed was 1:5 to 1:8, which has now gone to 1:8,8700 in case of Deodar, 1:30,000 in Kail, and 1:15,000 in Chil, thus requiring rationalization, which has been affected after about more than 100 years.
- The people would be given converted timber near to their place of residence at rate of 30% and 10% of average commercial rates at which timber is sold by HP Forest Development Corporation.

3. Legal position

The various settlement reports mention that *"If the exercise of rights as admitted in any forest, would endanger the existence of forest, the extent to which the rights will be exercisable can be re-determined and should the exercise of rights become detrimental to the exercise of the forests over which these are exercised, the extent to which the rights will be exercisable can be re-determined."*

Yet this option has seldom been exercised in the past for conservation of forests. H.P. Forest Settlement Rules, 1965 have been framed under Section 76 of IFA, 1927. The guiding principle laid down for determining the rights and concessions under these rules are as under:

"All these rights and concessions are meant for the satisfaction of personal bonafide requirements and subject to condition that forests are to be maintained in perpetuity. The right of user of easement is always a limited one; it can never extend so as to destroy the servient estate. The right exists so long as the (servient) property is safe or continues to exist, because if the (servient) estate ceases to exist, the right ceases with it. So while dealing with the claims, the Forest Settlement Officer should see that the forests are not unduly burdened."

Keeping into consideration the powers delegated to the state Govt. under Section 32 of IFA, 1927, based on the guiding principles under HP Forest (Settlement) Rules, 1965 and the orders passed by Hon'ble HP High Court the HP Forest (Timber Distribution of Right Holders) 2010 have been formulated and notified.

These rules in brief contain the following:

4. Quantity.-(1) Timber Distribution shall be granted in converted form from the depots to be specified separately as per scale fixed below:-

For construction of new house = 3 cubic meters; and

For maintenance = 1 cubic meter.

(2) Timber Distribution shall be given from salvage (fallen, dry standing), silviculturally available green trees in the order of preference.

5. Periodicity. - The periodicity for grant of Timber Distribution to the Right Holders will be as under:-

(i) For new construction once in life time or 30 years whichever is later;

(ii) For additions/alterations – once in 15 years; and

(iii) sufferers of natural calamities/fire sufferers: as per actual requirement as recommended by the Sub Divisional Officer (Civil) and after personal verification by the ACF/DFO concerned subject to the grant not exceeding the maximum limit prescribed under rule-4.

6. Rates. - The rates to be charged from the different types of Right Holders for grant of Timber Distribution will be as under:-

(i) Right Holders above poverty line- 30% of the rates at which timber is sold by the Himachal Pradesh State Forest Development Corporation Ltd commercially;

(ii) Right Holders below poverty line- 10% of the rates at which timber is sold by the Himachal Pradesh State Forest Development Corporation Ltd.Commercially; and

(iii) Right Holders suffering from natural calamities- Free of cost.

7. Priority for grant of Timber Distribution - Priority for grant of Timber Distribution shall be given to the Right Holders belonging to Below Poverty Line and then Right Holders above poverty line shall be granted Timber Distribution on first come first served basis.

8. Procedure for grant of Timber Distribution-

i) Application for grant of Timber Distribution, on the form appended to these rules as 'Annexure-I' shall be submitted by Right Holder(s) to the Panchayat concerned after getting necessary remarks from the Patwari concerned.

ii) The Panchayat after ascertaining genuineness of the requirement of the Right Holders shall pass resolution in the Gram Sabha of the Panchayat indicating actual quantity of requirement of Timber Distribution of the individual(s) concerned.

iii) After resolution recommending grant of Timber Distribution is passed by the Gram Sabha of the concerned panchayat, right holders shall submit his Timber Distribution application to the Forest Guard (FG) of the area.

iv) FG shall enter the same in the register maintained for the purpose and issue receipt of the application to the Right Holder.

v) He shall send his recommendations to the Block Officer after ascertaining the genuineness of demand, who in turn shall submit his recommendations to the Range Officer.

vi) After receipt of Timber Distribution application from the Range Officer, the Divisional Forest Officer shall take action for sanction of the Timber Distribution after satisfying himself about the genuineness of the requirement and silvicultural availability of trees/timber in the concerned forest and intimate his decision/ Timber Distribution grant to the Right Holder concerned on the proforma appended to these rules as 'Annexure II'.

vi) A schedule for grant of Timber Distribution shall be framed and notified for publicity to all panchayats and other functionaries in the Forest Division by the Divisional Forest Officer.

9. Time schedule for grant of Timber Distribution: The right holders shall apply for grant of Timber Distribution through concerned Panchayat to the concerned forest guard by 31st March each year which has been extended to 30TH April this year. The application shall be processed and Timber Distribution shall be given to eligible right holders between September to December of the year as per procedure under rule 8 and no Timber Distribution shall be granted thereafter for that year.

10. Depot. - The depots from where Timber Distribution in converted form shall be supplied to the right holders shall be notified by the Divisional Forest Officer every year. Any change during the next year in the place of these depots shall also be notified. These notifications shall be widely circulated up to the Panchayat level by the Divisional Forest Officer. The rates in this respect for various species during 2009-10 were as under:

Table 1.10 Rate of Timber under H.P. Forest (Timber Distribution to Right Holders) Rules, 2010

Species	Average weighted sale (commercial) rate in ₹ of HPSFC Ltd.	Rate per Cum at 30% in ₹	Rate per Cum at 10% in ₹	Estimated cost per standard size	
				For Right Holders above Poverty line	For Right Holders below Poverty line
Deodar	25614	7684	2561	768	256
Kail	15379	4614	1538	461	154
Fir/Spruce	7588	2276	759	228	76
Chil	5775	1733	578	173	58

It is hoped that rates during 2010-11 would be on the similar order.

11. Merit of these rules over previous provisions of T.D. in various settlements

The advantage these rules have provision for grant of TD under various settlements are as under:-

1. These Rules of TD have been integrated and unified for whole of the state.
2. Timber will be available in converted form and near to the place of residence of the people helping them in saving precious time and money during this schedule.
3. The rules are forest centered as well as right holder centered based on the guiding principles of HP Forest Settlement Rules, 1965 as indicated in point 3 which will help in conservation of forests and so also catering to the demand of TD to the present and future generations.
4. The periodicity and quantity has been made based on optional requirement so that forest remains and TD continues to be given in perpetuity.
5. Priority has been given to poor and needy (BPL) followed by other people who need wood in TD.
6. A detailed procedure for grant is enshrined in the Rules itself which is time scheduled for the year.
7. People have been empowered as the application for needy will start from the Gram Sabha.
8. The right holder now has to simply give application duly authenticated by the Gram Sabha of the Panchyat to the FG which will pass through the various channels of the Forest Deptt. and the applicants would get their converted TD at the earmarked depots between September to December.

(iii) **LOPPING:** The right of lopping the trees for fodder and litter has been admitted only in respect of Oak, Fir and Spruce. Heavy and continuous lopping of spruce near the villages is resulting in the death of trees. It is extremely necessary to prohibit lopping of spruce and fir and to restrict the indiscriminate lopping of Ban oak trees.

(iv) **MINOR FOREST PRODUCE** There is privilege/right of cutting of grass, collection/sale of flowers, fruits, medicinal herbs, honey and nargals admitted for the right holders. Besides, they can extract slates, stones for their buildings and earth for plastering. The removal of bark from oak and other suitable species is also permitted for tanning. Extraction of torch wood is permissible from stumps of all species provided hammer mark is kept intact.

1.10 POPULATION The density of human population is generally confined to the lower portion including valley bottoms of the tract while the population is sparse on high hills and in the interior valleys. Main vocation of the inhabitants is agriculture. The population of the area is increasing steadily. The rate of growth of population in Mandi District during this century has been summarized in the following table:

Table 1.11 Population of Mandi District since 1901

Census Year	Total Population	% annual growth rate	Population Density	Forest Cover (sq km)	Per capita forest available (ha)
1901	2,28,721	-	58		
1911	2,36,038	0.31	60		
1921	2,38,378	0.14	60		
1931	2,65,873	1.11	67		

1941	3,03,685	1.42	77		
1951	3,10,626	0.23	79		
1961	3,83,224	2.37	97		
1971	5,15,180	3.4	130		
1981	6,44,827	2.52	163		
1991	7,76,372	2.04	197	1301	0.167
2001	9,01,344	1.61	228	1656	0.184
2011	9,99,518	1.09	253	1673	0.167

[Source: Census of India Website and State of Forest Report, 2009]

The density of population of Mandi District based on 2011 census is 253 per sq.km. The density figures for Karsog Tehsil & part of other tehsils covering Karsog Forest Division are as tabulated below (2001census):

Table 1.12 Population Density, Cultivated and Forest Area of Karsog Division

Name of Administrative Unit	Human Population		Area in Sq.Km		
	Total Population	Density/ Sq.Km	Geographical	Cultivated	Forest
Mandi Distt.	9,01,344	228	3950	1564	1656
Karsog	83,379	157	530	116.90	
Thunag (Part)	10,616	1940	5.47	1.25	
Nihri (Part)	2,584	785	3.29	0.69	

[Source: Panchayat Record]

There are about 460 villages spread over 60 Panchayats in Karsog Tehsil with 15465 households. Out of total population of 83379 in Karsog Tehsil 25423 are SC while 356 are ST. Sex ratio of the Tehsil is 995 as against 1012 for the district (Census 2001).

For higher education, most of the population of this tehsil need to go to Shimla or Mandi.

The Division had 51 beats till now which are now being reorganized according to microwatersheds into 41 beats (map attached). These are spread over 60 Panchayats as given in Table 1.15

Table 1.15: Beat-wise* list of Panchayats in Karsog Division

S.No.	Beat	Name of Panchayats		S.No.	Beat	Name of Panchayats	
		Major Part	Minor Part			Major Part	Minor Part
1	Seri Mangarh	Jhared	Bagrathach	27	Dopha	Khadkan	
2	Thansar	Bareogi		28	Sanarli	Sanarli	Karsog
3	Chaura	Chhatri		29	Kakahan	Karsog	Lower Karsog Dachhehan
4	Lassi	Chhatni		30	Kamand	Matehal	Churag
5	Shagagi	Kakradhar		31	Sapnot	Sapnot	
6	Kathoundahr	Kakradhar		32	Mahun Nag	Mahun Nag	Sarteola
7	Katanda	Seri Katanda	Mahog	33	Parlog	Parlog	Sarteola
8	Mahog	Mahog	Gowalpur	34	Dharmour	Mehran	Kheel, Churag
9	Gowalpur	Gowalpur		35	Bagshar	Bagshar	
10	Pokhi	Pokhi		36	Alsindi	Balindi	Sawindhar
11	Sarahan	Sarahan	Tebban	37	Talehan	Bindla	Bagshar
12	Tebban	Tebban	Sarahan	38	Tattapani	Tattapani	Thalli, Sawindhar
13	Nanj	Nanj	Balidhar	39	Balindi	Balindi	Kanda
14	Dhamoon	Balidhar		40	Kanda	Kanda	Balindi

15	Niharinal	Shaol		41	Belar	Belar	Shorshan, Mashog
16	Khadra	Khadra		42	Shorshan	Shorshan	Belar, Kheel
17	Chauridhar	Chauridhar		43	Karadal	Churag	Mashog
18	Seri	Seri	Kelodhar	44	Chindi	Kalashan	Bakhrot
19	Richhani	Richhani	Kelodhar	45	Gushal	Bakhrot	
20	Kotkosh	Thakuthana		46	Begli	Sorta	Kalashan
21	Pathrevi	Richhani	Pokhi	47	Pangna	Pangna	Surahi, Mashog
22	Mehandhi	Mehandhi		48	Surahi	Surahi	Pangna
23	Kashol	Dabrot		49	Shalog	Kutwachi	
24	Bhanera	Bhanera		50	Kutwachi	Kutwachi	
25	Mamail	Mamail	Kelodhar	51	Machhrot	Kutwachi	Masogal
26	Ghallach	Khadkan					

* The beats listed here are existing, it is proposed to reorganize these into 41 beats.

1.10.1 Education profile (2001 census)

The literacy rate of Mandi district (census 2011) is 82.81%. However, the census data of 2011 for Tehsils is not available and thus literacy rates of 2001 are presented here.

Table 1.13 Literacy percentage and educational Facilities in Karsog

Tehsil	Literacy (%)			No. of educational institutions				
	Total	Male	Female	Primary School	Middle School	Secondary School	Senior Secondary School	College
Karsog	60.9	70.9	50.9	210	50	18	7	1

1.10.2 Health Facilities:

Table 1.14 Health Facilities in Karsog Division

Tehsil	Allopathic Hospital	Child Welfare Centre	Primary Health Centre	Primary Health Sub-Centre
Karsog	1	1	1	28

Based on the average availability of healthcare facilities to population, about 83379 are catered to by a primary health centre while there is a primary health sub-centre available for every 2978 persons.

1.10.3 Animal Population Animal population of the Division as per 2007 census is given in the table below. The total animal population is 120036 which when converted to livestock unit is equivalent to 42963. A kine unit is estimated to consume 20 quintals of dry grass per annum which means the total requirement of fodder is 313630 tons of fodder per annum. Fodder resources are generally supplemented by feeding the cattle in stall from various crops, leaf fodder, tree and bushes etc.

Table 1.16: Animal Population of Karsog Division

S.No.	Tehsil/ Sub Teh	Ox	Cow	Buffaloes	Sheep	Goat	Horses/ donkey	Mules	Total
1	Karsog	27304	41972	1822	13277	23770	370	513	109028
	Previous plan	20755	29702	2888	20740	18580	588	22	93275
2	Thunag (Part)	457	2687	0	3291	2463	38	65	9001
	Previous plan	2481	2192	12	5973	2725	37	0	13420
3	Nihri (Part)	176	715	0	245	850	4	17	2007
	Previous plan	329	713	10	799	1333	103	0	3287
	Total	27937	45374	1822	16813	27083	412	595	120036
	Previous plan	23565	32607	2910	27512	22638	728	22	109982

Difference since previous plan	4372	12767	-1088	10699	4445	-316	573	10054

Since the previous plan period population of sheep has decreased immensely by 10699 but there is increase in number of goats. This poses a threat to plantations as they nibble the plants and eventually such plants die. Thus there is need to protect the plantations in a better way. Seeking local community involvement in plantation protection especially through User Groups may help in this.

1.11 AGRICULTURAL CUSTOMS: The population is mainly rural and depends mostly on agriculture. The agriculture practices are old but people have adopted the scientific agriculture to some extent. The land holdings are invariably small with the result the tract is not self sufficient for good grain production. The extent of irrigated land is insignificant and the people have to depend on monsoon rains.

In some parts of this division, farmers undertake cultivations of potatoes, peas, tomatoes which provide additional income. However, proper terracing is not attempted and on the contrary, cultivation is practiced on steeper gradients with the ridges along the slopes. This results in washing away of top soil in two or three monsoons and depletion of soil fertility. These fields are however kept fallow for a few years to regain fertility.

Apple orchards have become increasingly popular in the tract above 2000 m and are a source of good income. The majority of the people inhabitation these valleys and hills are poor and to supplement their meager income, they work as labourers with forest, public works department, irrigation-cum-public health and block development works.

Fuelwood Requirement: Other Amenities

All villages of the Division are electrified and most of these are connected to the national and state highways and link roads. However, a few villages like Marola and Parlog do not have any approach road. All the villages are supplied with tap water facility and the inhabitants also use spring water, river water and ground water. Major part of the area is covered under the telephone/mobile connectivity.

Roads & Buildings

Existing network of roads in the Division is shown on the Range maps attached.

{Source: Comprehensive CAT plan prepared by NERIL}

Further, bridle paths and roads of Forest Department are given in Annexure II (a) & (b) alongwith the name of beats that they pass through.

List of existing forest buildings is given as Annexure III.

FLORA AND FAUNA

FOREST FLORA

2.1 TREES The important tree species occurring in Karsag Forest Division are Chir pine (*Pinus roxburghii*), Deodar (*Cedrus deodara*), Kail (*Pinus wallichiana*), Spruce (*Picea smithiana*), Fir (*Abies pindrow*), Ban Oak (*Quercus leucotrichophora*), Moru oak (*Quercus floribunda*), Kharsu oak (*Quercus semecarpifolia*). Besides a number of other trees are found in the tract, list of which is given in glossary. A brief summary of description, composition and condition of these species is given here under:

1. **Chir pine (*Pinus roxburghii*):** This species occupies about 42% of the total forest area of the division and is found most commonly on private land as well. All age classes of trees are present but the young trees are dominant. Similarly, the site quality varies from II to III. The regeneration is good and the health of the crop is also good. Karsag division leads in Mandi district as far as resin extraction is concerned.
2. **Deodar (*Cedrus deodara*):** Deodar is found mostly mixed with Kail in this division. This along with Kail occupies, about 22% of the forest area but in mixture it is dominated by Kail (40:60). Regeneration is moderate due to biotic factors. The site quality found is III, II/III mainly. The middle-aged trees are most common as compared to other classes. The health of trees is good in general.
3. **Kail (*Pinus wallichiana*):** It covers 60% area of Deodar-Kail working circle of the plan. Regeneration is moderate to scattered and the site quality is low to moderate (III to II). The health is fairly good but large trees are often hollow and fungal infested. Due to pressure of TD grant on Deodar, this species is expanding in mixture.
4. **Spruce (*Picea smithiana*):** It occurs on higher elevations and is found in very less proportion (about 500 to 800 ha), hence no separate management prescriptions/treatment is suggested for this species. It is being protected as a natural reserve. The site quality is mostly II/III and the density 0.4 to 0.6. The health condition is good although like Kail, large trees are hollow and prone to fungal infections.
5. **Fir (*Abies pindrow*):** It also occurs on higher elevations and is found in very less proportion, hence no separate management prescriptions/treatment suggested for this species. It is being protected as a natural reserve. The site quality is mostly II/III and the condition of crop is good.
6. **Ban Oak (*Quercus leucotrichophora*):** It is a protected species of the state and no green felling is allowed and is subject to heavy lopping near habitations. Amongst the broadleaved species, Ban Oak is most common and occupies about 15% of the total forest area of the division. Regeneration of Ban oak is a problem. The site quality varies from II to III and middle-aged trees are dominant. This species is being protected to maintain/preserve moisture regime of the forest and to meet fodder requirement during lean season.
7. **Moru oak (*Quercus dilatata*):** It is an associate of Deodar-Kail and Spruce forests and is found in less proportion in a forest. This species is protected as such to retain biological diversity of the forest. Like Ban Oak, it is also a protected species.
8. **Kharsu oak (*Quercus semecarpifolia*):** In this division, it is found in very less proportion confining to the upper reaches of Magroo range along with Silver Fir. It is a protected species and is being maintained as such as natural reserve.
9. **Khair (*Acacia catechu*):** In this Division this is mainly found in lower belt along Satluj river in Tattapani and Kotlu areas spread in Pangana and Seri Ranges. The total spread is estimated to be in about 1600 ha area.
10. **Sissoo (*Dalbergia sissoo*):** This is also found in lower belts along Satluj river in Tattapani block. However, its overall spread is lesser in extent.

2.2 GENERAL DESCRIPTION OF THE GROWING STOCK The composition and condition of the crop varies considerably with the altitude and aspects of the tract. Thus the vegetation met within the

tract shows great variation. In the low lying areas of the tract, scrub forests occur and as the elevation rises Chil becomes the dominant species, higher up in the division Deodar appears mixed with oaks and further upwards Kail, Spruce and Fir forests are met with both in mixture and in pure form. According to the general classification of the forests based on H.G. Champion & S.K. Seth's classification of forests types, the following forest types are found here:

Table 2.1 Forest Types of Karsog Forest Division

Major Group	Type group	Sub Group	Forest types
1.Dry tropical	5-Tropical dry deciduous forests	5-B Northern tropical dry deciduous forests	5B/C2 Northern mixed deciduous forests
			5B/DSI Dry deciduous scrub forests.
			5B/S2 Khair sisoo forest
2.Mountane sub- tropical	9-Sub tropical pine forests		9/C1b Himalayan chir pine forests
			9/C1/DS2 Sub tropical scrub forests.
3. Montane temperate forest	12-Himalayan moist temperate forests		12/C1a Ban oak forests.
			12/C1b Mohu oak forests.
			12/C1c Moist deodar forest.
			12/D1d Western mixed coniferous forests.
			12/C1f Low level blue pine forest
			12/C1/DSI Oak scrub.

Northern dry mixed deciduous forest 5B/C2: The scrub forests are mainly found in southern & south western parts of the tract, areas adjoining Tattapani. The forests are generally confined between 600m to 1300m. The canopy is irregular, the trees having poor growth and relatively shorter boles rarely exceeding 10m in length. This type is represented in D 100 Ghanghar. The important species in preponderance are: *Anogeissus latifolia*, *Emblia officinalis*, *Acacia catechu*, *Cassia fistula*, *Dalbergia sissoo*, *Grewia optiva*, *Bauhinia racemosa*, *Terminalia belerica*, *Bombax ceiba*, *Syzygium cumminii*, *Ficus bengalensis*, *Melia azadirachta*. Other associates are *Lannea coromandelica*, *Feronia limonia*, *Casearia elliptica*, *Elacourtya indica*, *Mallotus phillippinensis*, and *Nyctanthes arbortristis*. Shrubs commonly found are: *Carissa spinarum*, *Dodonea viscosa*, *Woodfordia fruticosa*, *Justica adhatoda*, *Murraya koenigii*, *Zizyphus nummularia* etc. *Euphorbia royleana* occurs on rocky out crops and over grazed sites. Climbers commonly met with are *Bauhinia vahlii*, *Pueraria tuberosa*, *Caesalpinia decapetala*.

Northern dry deciduous scrub forests 5B/DSI: It is a degraded stage of Northern dry deciduous forests which is subject to lopping. It is characterized by abrupt broken soil cover of shrubs like *Carissa*, *Randia*, *Dodonea* etc. The typical example of this type is D 223 Tundal bah.

Khair sissoo 5B/S2: This type is represented along river Sutelej in D 100 Ghanghar as a river in fringe vegetation on alluvial deposits which get submerged during monsoon and usually retain moisture throughout the year. The growing stock of khair and sissoo is poor with density of 0.1 to 0.2. The crop is mainly young. The characteristic species are *Dalbergia sissoo* and *Acacia catechu*. The associates are *Moringa oleifera*, *Phoenix sylvestris* and undergrowth consists of *Zizyphus nummularia*, *Justicia adhatoda*, *Murraya koenigii* etc. The air and soil temperatures are high owing to radiations from exposed rocks and sands, Xerophytic grasses like *Saccharum spontaneum* are common in this type.

Himalayan Chir Pine Forests 9/C1 (b): In the tract Chil forests occur between 1200m to 1800m with annual rainfall varying from 800mm to 1400mm. At lower limits the Chil occupies northern slopes and restricts to cooler places but above 1200m Chil occurs in all aspects, although its density and quality on southern & south western slopes and along ridges is rather poor. The best chil forests, in fairly compact blocks, are met adjoining Karsog, Churag & Pangna. Chil occurs in variety of soil formations developed from tertiary sand stone, quartzite, gneiss and shales. Chil occurs on bare rocks and shallow soils where is stunted but attains large dimension & site quality II crops on quartzite.

Most of the chil forests have been felled and give the look of PDI felled area or PB IV. Natural regeneration of Chil is good, well supported by Chil planting. The associates near lower limits are *Lannea coromandelica*, *Pistacia*, *Euphorbia royleana*. The common shrubs found are *Berberis*, *Rubus*, *Carrissa opaca*, *Randia tetrasperma*, *Zanthoxylum alatum*, *Woodfordia floribunda* etc.

Ban oak Forests 12 CI (a): Ban oak forests are widely distributed in the tract and occur between an altitudes of 1000m to 2300m. The occurrence of ban oaks shows a wide altitudinal distribution. Fairly extensive pure patches of ban oak with excellent growth are met with in D 236 Pathrevi, D 237 Katanda, D 261 Garjub and D 259 Lotla. Besides growing in pine compact patches, ban grows in nalas/depressions as an under story in Chil & Deodar forests. The ban has been subject to severe lopping, hackling and felling. The regeneration of ban oak is not satisfactory due to heavy grazing. It is a protected species now. However, dry standing and uprooted ban trees if available, are being worked for extraction of fuel wood and charcoal to meet the requirement of charcoal/fuel wood in the tract.

The common associates of ban oak are: *Rhododendron arboreum*, *Lyonia avalifolia*, *Persea odoratissima*, *Litsea umbrosa*, *Myrica nagi*, *Quercus glauca* etc. In nalas and shady localities deciduous species like *Cedrela serrata*, *Pyrus pashia*, *Aesculus indica*, and *Acer villosum* also get associated. Undergrowth consists of *Berberis lycium*, *Indigofera heterantha*, *Sarcococca saligna*, *Lonicera quinquelocularis*, *Desmodium zillifolium* etc. Herbaceous flora is rich on most Northern slopes and generally consists of *Pilea umbrosa*, *Valerana wallichii*, *Viola* spp., *Arisaema wallichii*, *Salvia glutinosa*, ferns and grasses. The climber frequently met with are *Rubus*, *Vitis himalaya*, *Rosa moschata*, *Hedera helix*, *Clematis montana* etc.

Moist deodar forests (12/CIC): These forests occur generally between 1600m and 2300m elevation and rainfall from 1000mm to 1900mm and form the most valuable commercial forests in this region. On the northern aspects and along nalas deodar descends to even lower altitudes while on southern aspects it ascends to 2600m. The deodar forests occur on all geological formations but have shown excellent development on granite/gneiss. Kail is mixed on hotter situations and drier slopes. Spruce comes up occasionally in the top storey along nalas in this tract as in D 27 Mahasu. Good deodar forests are found in D 27 Mahasu, D 19 Shalog, D 225 Dhamoon and D 234 Sundru etc.

The overall quality of the crop is II/III and average density varies from 0.4 to 0.6. Selective marking of good deodar trees in the past have caused irregular crop. Natural regeneration is fairly good. Due to biotic factors deodar is being replaced by associate Kail. There is generally a paucity of underwood in deodar forests, and where ever present, consists of scattered Ban near its lower and middle zone of distribution and Mohru/Kharsu near its upper limits of distribution. Deciduous broad-leaved trees occasionally met with in the nalas are *Cedrela serrata*, *Ulmus villosa*, *Aesculus indica* etc.

Western mixed coniferous 12/Cid: This is commonly referred to as mixed coniferous forests but also includes pure spruce, spruce-silver fir, spruce deodar and deodar kail formations. This type occurs above the deodar zone between altitudes 2100m and 3000m in the interior of nalas. The trees are often of fine growth and quality II & III. The stocking is fair and for convenience of description of this type, the same is sub divided into the following sub types.

a) Spruce-Deodar Forests: Along the upper limits of deodar zone. Spruce grows mixed with deodar, the former predominates in nalas and in shady places and later mainly along ridges. Kail also comes in such trees along the spurs which are too dry for deodar & spruce. The deciduous broad leaved trees occasionally found are *Aesculus*, *Acer caesium*, *Cedrela serrata* and *Ulmus villosa* etc. The biotic interference plays an important part in determining the proportion of deodar & spruce in these forests. In areas adjoining the villages heavy & indiscriminate lopping has resulted in development of knots in the timber. The composition of undergrowth and herbaceous flora is almost the same as in deodar forests except that it is thicker especially in nalas & mesophytic species

predominate. The crop in this type in the tract is variable but middle-aged trees predominate, the typical example being D236 Pathrevi C2c.

b) Spruce-Kail Forests Spruce & Kail occur in intimate mixture as well as compact pure groups, kail coming on warm situations, dry ridges while spruce confining to cooler places & higher elevations. The typical examples of this type are D 22 Chhadaini Daint, D 297 Surahi.

c) Spruce-Silver Fir forests:-Stocking in these forests is poor and regeneration is deficient. These forests are confined to higher zone between 2500m to 3000m with fir predominating in upper ridges and spruce on the lower limits.

Low level blue pine forests 12 C1f Extensive Kail forests more or less occur pure between 1500m to 2500m extending to high elevation on drier & hotter ridges. The quality of the crop is II to II/III and density varies from 0.3 to 0.6. The crop shows good diameter and height growth. In many cases profuse regeneration of deodar, kail has come up mainly as a result of sowing. On warmer slopes, species like Berberis and Indigofera occur as common undergrowth.

2.3 STATUS OF NATURAL REGENERATION

2.3.1 Chir Pine Forests This species covers more than 40% forest area of the division. The status of regeneration is satisfactory. Only one forest (PB I) viz. D 43 Kaneri C1 (61.30 ha) has been felled during the plan under revision and the progress of regeneration is satisfactory to good. Felling of PB IV (181.38 ha) area has been carried out in the plan period as these forests were fully regenerated. In Chir forests of this division, natural regeneration is not a problem except for the forests located close to habitations. In the plan under revision, 2819.37 ha were kept in PBIV which now has risen to 5206.11 ha which depicts that 2386.74 ha regenerated area has been added. This clearly shows that the status of natural regeneration is more than satisfactory.

2.3.2 Deodar-Kail Forests The forest occupies about 21% of the forest area. The natural regeneration is not a matter of concern in these forests although there has been degradation in the stock due to heavy biotic pressure resulting into fair regeneration in the forest close to habitations. No Deodar-Kail forest has been felled in the plan period. In the plan under revision, 661.86 ha were kept in PBIV which is now 1301.04 ha which depicts that almost equal regenerated area has been added. This clearly shows that the status of natural regeneration is satisfactory.

2.3.3 Fir-Spruce Forests These constitute less than 1000 ha forest area and are not being managed separately. In the plan under revision, these were included in Deodar-Kail working circle but due to its less proportion, these species are being protected. Natural regeneration of these species is in general a problem. Ocularly, the status of regeneration of these species is scanty to scattered.

2.3.4 Oak Forests: Ban Oak is the main species covering about 15% of area. The Oaks are fully protected species of the state. Natural regeneration of oaks is a problem due to indiscriminate lopping (mainly Ban Oak). Lopping leads to poor flowering and seed formation. Seed dormancy, eating of seeds by birds and wild animals aggravate the process of natural regeneration. All the oak forests are being protected to maintain the moisture regime of soil.

2.4. INJURIES TO WHICH CROP IS LIABLE The forests of this division are exposed to various injuries caused by climate, fire, man insects and fungi which are classified as under:

2.4.1 FIRE Fire has caused huge losses to forest wealth in the past. Besides, huge financial loss on account of destruction of timber and green trees, large sums of money is required to restock the fire burnt areas. Further the grazing value and fertility of soil have been destroyed. In case of severe fire it is not possible to restore the original condition and new crop raised in the area is not as good as the destroyed one. The trees which survive after severe fires are unable to restore the original vitality and do not put on normal increment. Besides doing incalculative damage to forest growth, fires result in increased run off and excessive erosion. The fire occurs during the dry months of April to

June and again from September to November. Lack of proper supervision also causes more damage during dry season. The faulty resin tapping (too close resin channels) is another aggravating cause for the death of the trees by burning of cambium layer all around the trees. Largely the guidelines for resin tapping are not being followed and it results in loss of revenue and vitality of trees. The following table summarizes the areas burnt by fire from 1986-87 to 2009-10:

Table 2.2 Forest areas burnt in fire (ha)

Year	Forest area burnt in fire (ha.)		
	UIPF	DPF	Total
86-87	45.00	-	45.00
87-88	25.00	192.00	217.00
88-89 to 90-91	Nil	Nil	Nil
91-92	-	5.00	5.00
92-93 & 93-94	Nil	Nil	Nil
94-95	-	215.00	215.00
95-96	-	1458.00	1458.00
96-97	-	144.00	144.00
97-98	-	57.00	57.00
98-99	-	44.00	44.00
99-00	-	457.00	457.00
00-01	-	480.00	480.00
01-02	-	80.50	80.50
02-03	-	344.00	344.00
03-04	-	352.00	352.00
04-05	-	681.40	681.40
05-06	-	80.00	80.00
06-07	-	62.50	62.50
07-08	-	330.50	330.5
08-09	-	219.00	219.00
09-10	-	1405.06	1405.06
10-11	-	243.5	243.5
11-12	-	195.0	195.0

(Source: Office record DFO Karsog)

Fire management strategy can be prioritized on the basis of incidences of fires in previous years. Number of fire incidences during 1995-2010 has been given here in descending order:

Table 2.3 Fire Incidence in Karsog 1995-2010

S. No.	Beat	No. of incidents	S. No.	Beat	No. of incidents	S. No.	Beat	No. of incidents
1	Kandha	10	18	Beg'i	3	35	Kotkosh	1
2	Alsindi	8	19	Kardal	3	36	Seri	1
3	Tattapani	7	20	Niharinal	3	37	Gowalpur	1
4	Ballndi	6	21	Katanda	2	38	Pokhi	1
5	Chindhi	5	22	Sarhan	2	39	Kathaundhar	nil
6	Mahunag	5	23	Teban	2	40	Sagagi	nil
7	Kashoul	4	24	Talehan	2	41	Serimangarh	nil
8	Kamand	4	25	Chouridhar	2	42	Choura	nil
9	Sanaril	4	26	Gushal	2	43	Lassi	nil
10	Belar	4	27	Pangna	2	44	Thanser	nil
11	Nanj	4	28	Mendhi	2	45	Richni	nil
12	Khadra	4	29	Kakahan	2	46	Dhamoon	nil
13	Mahog	4	30	Mamail	1	47	Saprat	nil
14	Ghaliach	3	31	Bagshad	1	48	Surhi	nil

15	Bhenara	3	32	Parlog	1	49	Kutachi	nil
16	Dopha	3	33	Shorahan	1	50	Salag	nil
17	Dharmour	3	34	Pathrevi	1	51	Machhrot	nil

(Source: Office record DFO Karsog)

2.4.2 Lopping: Ban oak and other low level broad leaved species such as *bihul*, *kimmu*, *khirak*, *siris*, *figus* etc. are lopped very heavily especially near the villages. This is due to the heavy cattle population of the area. Most of the new demarcated protected forests once carried a good crop of broad leaved species, are now turning into blanks due to indiscriminate lopping, hacking of trees for fuel and fodder. Fir is rarely lopped but its associate spruce is lopped and almost reduced to column with practically a little or with no crown. Lopping of spruce is so indiscriminate that, even isolated or small patch of spruce trees, in otherwise pure deodar or kail stands, have also been heavily lopped. Though lopping of kail is prohibited but the same has also been lopped and this subjects it to attack by *Fomes pini*. Chil is also sometimes subject to lopping. Ban amongst the broad leaved trees adjoining the villages is usually lopped twice a year. The ban trees assume gnarled appearance when subjected to repeated lopping and get reduced to pollards or scrubs as in D 237 Katanda, D 236 Pathrevi, and D 259 Lotla etc.

Heavily lopped Ban trees are particularly infested by Indian Gypsy Moth (*Lymantria obfuscata* Walker) and serve as epicenters of the pest population. In deodar attack from fungi is more frequent through openings caused by heavy and indiscriminate lopping esp. during the rainy season i.e. July -August. *Fomes annosus* fungus causes root and butt rot in deodar. In Chil pine areas, Chil is also subject to lopping for firewood. Chil trees of IV to IIB class when lopped are more susceptible to infestation by *Polygraphus longifolia*, a most destructive insect bark borer. Fire incidence and excessive resin tapping aggravates attacks by this insect borer. Heart rot pathogens like *Fomes pini* (Thore) Lloyd also enter through wounds made during lopping of Blue pine trees, a major reason for many rotten trees of kail in blue pine forests. The beetle *Pityogenus scitus* Blanford (Coleoptera: Scolitidae), enters kail trees through lopping wounds, the entrance hole being marked by a thick ring of white and hardened resin. This leads to premature needle fall (starting from the top) and under severe attacks the kail tree can dry up within six months.

2.4.3.1: In the likely event of rising annual temperatures due to climate change, it is expected that disease incidence due to various pathogens mentioned above will increase. It is therefore essential that an effective monitoring protocol for early detection of forest diseases is put in place, perhaps through a long term monitoring arrangement with the HFRI, Shimla. Appropriate preventive action as recommended by scientists, needs to be taken up by the department and can be funded under NPV component of CAMPA.

2.4.3 ILLICIT FELLINGS The damage by illicit felling is very common throughout the tract and quite frequent along the roads. The gist of number of cases detected in the past is given in Table

Table 2.4 Incidence of Illicit Fellings in Karsog since 1986

Year	No. of cases detected	Estimated value of timber Involved(₹)	Year	No. of cases detected	Estimated value of timber involved (₹)
1986-87	1263	38987	1999-00	10	111371
1987-88	1060	94312	2000-01	190	1073359
1988-89	459	67380	2001-02	156	918005
1989-90	316	38747	2002-03	227	1147979
1990-91	353	33230	2003-04	198	1401181
1991-92	90	83049	2004-05	169	1654612
1992-93	127	108464	2005-06	57	227325
1993-94	235	82995	2006-07	58	370502

1994-95	1038	313189	2007-08	34	193676
1995-96	93	106811	2008-09	155	
1996-97	83	280992	2009-10	71	
1997-98	87	240074	2010-11	60	426000
1998-99	134	240074	2011-12	60	254290

(Source: Office record DFO Karsog)

Range wise detail of illicit fellings 2001 onwards has been given in Annexure IV. There appears to be a discrepancy w.r.t. figures given for the years 2001-02 to 2007-08 above. The figures in parentheses are illicitly felled trees taken from Annexure IV for the years 2001-02 till 2010-11; while the other ones as shown by the WPO in the original draft of the WP, are the number of cases detected. It needs to be pointed out, however, that as per details provided and shown in the Annexure IV, over 91 % of the trees shown illicitly cut over these ten years are either saplings or Class V trees and those also mainly of Chil, Deodar and Kail. It is therefore probable that these small trees are being cut to provide support to either apple trees or to cash crops like tomatoes and are not really timber removed for buliding or smuggling outside the area. It may also be noted that the number of trees shown as illegally felled has shown a drastic decline since 1986-87, barring a few years. It would be interesting to explore the reasons behind this trend especially in view of the fact that between 2007 and 2010 no TD grants were made across HP due to a High Court ban?

2.4.4 ENCROACHMENT: This is a serious and contagious issue. A sizeable chunk of forest land is encroached most commonly adjoining private land holding as depicted in Table 2.5:

Table 2.5: STATEMENT SHOWING ENCROACHMENTS IN KARSOG FOREST DIVISION (2011)

Year	Status of Land	Previous Balance		Cases registered during the Year		Total Cases		Evicted Cases	Area in ha	Balance Cases	AREA ha
		No.	Area ha	No.	Area ha	No.	AREA ha				
1994-95	D.P.F.	0	0	11	4.74	11	1.74	3	0.64	8	1.1
1995-96	D.P.F.	8	1	23	4.52	31	5.62	5	0.56	26	5.06
1996-97	D.P.F.	26	5.06	1	0.8	27	5.86	17	2.96	10	2.9
1997-98	D.P.F.	10	2.9	19	2.375	29	5.275	5	1.7	24	3.575
1998-99	D.P.F.	24	3.575	0	0	24	3.545	16	2.442	8	1.133
1999-00	D.P.F.	8	1.133	0	0	8	1.133	2	0.048	6	1.085
2000-01	D.P.F.	6	1.085	1	0.425	7	1.51	0	0	7	1.51
2001-02	D.P.F.	7	1.51	0	0	7	1.51	0	0	7	1.51
2002-03	D.P.F.	7	1.51	1349	154.13	1356	155.64	0	0	1356	155.639
2003-04	D.P.F.	1356	155.64	0	0	1356	155.64	0	0	1356	155.639
2004-05	D.P.F.	1356	155.64	0	0	1356	155.64	568	51.17	788	104.468
2005-06	D.P.F.	788	104.47	0	0	788	104.47	51	8.859	737	95.609
2006-07	D.P.F.	737	95.609	0	0	737	95.609	132	23.24	605	72.365
2007-08	D.P.F.	605	72.365	0	0	605	72.365	2	0.31	603	72.055
2008-09	D.P.F.	603	72.055	16	3.019	619	75.074	584*	68.6	35	6.474
2009-10	D.P.F.	35	6.474	0	0	35	6.474	11	1.474	24	4.999
2010-11	D.P.F.	24	4.999	13	2.479	37	7.478	11	4.004	26	3.474
2011-12	D.P.F.	26	3.474	130	19.196	156	22.670	-	-	156	22.670

*Out of this 563 cases with area 61.811 ha returned to Revenue Authority for taking action at their own level (Source: Office record DFO Karsog)

2.4.4.1: INJURY DUE TO FAULTY RESIN TAPPING & CONSEQUENCES:

There is a big problem with resin tapping. In Chil forests faulty resin tapping is perhaps the biggest threat to the forests. The RILL method was introduced several years ago. This is supposed to be less damaging to the tree if properly carried out. However, inspection of the Chil forests shows that neither the Corporation staff or the Forest staff or the Resin labour of the Contractor has been trained or have a clue of what the Rill method entails. Resin is profitable business for the Corporation which has a vested interest in maximizing yield and in this pursuit the chil trees are virtually being tapped to death, whereas the Rill method was introduced to precisely overcome this problem. In fact there is an incentive for the contractor to maximize resin yield per section as the Corporation pays for resin extracted (by excessive use of acid) even when a limit of 30 quintals per section has been fixed as the maximum permissible yield. There is virtually no checking by the forest staff and damage bills made at the end of the season are more for tokenism than to effectively check faulty tapping.

The result is that the Chil forests are dying. Bad tapping virtually girdles the tree and repeated fires so weaken the stem that sooner than later the tree falls due to wind or in storms. Being a government corporation manned by forest officers on deputation, it is difficult / tricky to take penal action against what are seen as fellow officers / officials. There is no incentive to direct stakeholders to think of sustainable tapping. The Corporation stands to make more money if it properly follows the Rill method by way of many more years of tapping the same tree. Other irregularities like illicit tapping make the scenario worse.

It is clear that many areas like PB I should not be allowed to be tapped and over tapped areas should be given complete rest for the period of this Working Plan.

2.4.5 INJURIES CAUSED BY ANIMALS Animals cause following injuries to crops:-

(a) **Grazing by domestic Animals:** In view of the unrestricted rights of grazing admitted for the local people, almost all the forest areas, except the high lying fir forests, are fairly heavily grazed. The grazing damage not only confines to browsing and trampling affecting young seedling of forest tree species, but also results in stripping hill sides of vegetative cover and consequently increases soil loss. Excessive grazing does great harm to regeneration especially on southern slopes. The overgrazing in chil forests increases soil erosion and leads to reduction in soil fertility and deterioration of site quality. Harmful effects of overgrazing are noticeable in all the chil forests and more so in forests adjoining the habitation. Grazing during rains, especially by buffaloes, pulverizes the soil and compacts it so that it is no longer able to absorb rain and thus increases run-off and soil erosion.

Overgrazing is doing considerable damage in deodar and kail forests also, where it does not let natural regeneration to come up. The damage is increased more on the southern aspect and other sites where site conditions are not very favorable for deodar. On dry overgrazed sites near the villages, deodar is of very poor quality and natural regeneration is conspicuous by its absence. Besides this over grazing is resulting in depletion of the ground cover and in deterioration of site quality.

Spruce forests are also not free from this evil and their more accessible parts are already suffering from overgrazing. Areas of silver fir and spruce away from villages are however, not overgrazed. Harmful effects of excessive grazing are more pronounced in the waste lands, undemarcated forests and in alpine pastures. Continuous overgrazing in these areas has almost completely destroyed the soil cover of good grasses and leguminous plants giving place to coarser grasses and thorny shrubs incapable of affording adequate protection to the soil. Besides the local cattle, the migratory sheep and goats which come for grazing in the lower areas during winter do lot of damage on their way to these areas and back to higher hills for summer grazing.

(b) **Wild Animals:** The damage done by the wild animals in this tract is not appreciable and is only occasional.

2.4.6 Invasive Species Invasive species pose a very serious problem in all altitudes however their distribution in high hills is less. In the lower zone *Lantana camara* and *Ageratum* spp. are actively encroaching upon the open scrub forests and have caused serious threat to forest growth. The distribution of weeds in the division is given in table 2.6. There is no *Lantana* infestation in Magroo Range. The areas having new infestation (about 10%) need to be focused in order to make sure that this does not spread further. *Parthenium* has been reported from Tattapani, Bagsad, Talehan, Pangna, Begli mainly along roads and in *Ghasni*. The total extent is estimated to be 12ha. *Trifolium* and *Ageratum* is sparse in certain pockets of Tattapani, Talehan, Balindi, Sarhan, Gwalpur and Parlog. However, the main concentration is only agricultural fields. As these weeds normally confine to wastelands having grazing pressure they have not actually intruded deep into forests so far. However, they need to be managed now to check their spread and become a problematic weed.

2.4.7 PARASITES *Loranthus* and *Viscum* are commonly found parasites in this division. They do some damage in Ban oak and broad leaved forests of the lower zone.

2.4.8 CLIMBERS These are not very harmful except in scrub forests, where *Bauhinia vahlii* and *Pueraria tuberosa* envelops the trees completely and thereby retard their growth. The commonly found climbers in kail & deodar forests are *Vitis semicordata*, *Rosa moschata*, *Hedera helix* & *Rubus* etc.

2.4.9 FUNGI

(i) *Trametes pinii*: This causes significant damage to kail in this division. The fungus causes decay mainly in the heart wood. The heart wood is stained light pink or brown or reddish, due to which the disease is known as 'red-rot'. *Trametes pinii* in fact, in Kail mainly attacks through trunk wounds caused during lopping which should be prohibited or controlled to minimize infection. In case of severe attack, the loss of timber is enormous.

(ii) *Fomes annosus*: It attacks deodar poles through the roots in badly drained soil and results in their death. The damage due to this fungus is not appreciable and only sporadic casualties have been noticed in this division. As the fungus is soil borne, digging of trench around infected groups of poles, uprooting and burning the infected material will be helpful in controlling this fungus.

(iii) *Peridermium companulatum* & *P. brebis*: These fungi attack the needles of chil and kail respectively and kill them. Slight attack of these has been sporadically noticed in some chil and kail forests.

(iv) *Fusarium* species: It attacks the roots of young deodar seedlings which consequently damp off. Bad drainage & poor aeration are the main causes of this disease. Deodar should, therefore, always be grown in well drained soils. Besides this, damping off in conifer seedlings is also caused by *Pythium*, *Rhizoctonia* & *Phytophthora* spp.

2.4.10 INSECTS Only sporadic insect damage has been noticed in this division. *Ectropis deodarae* some times does appreciable damage to deodar. *Euzophere cedrella* attacks deodar poles and cause damage in the nurseries by cutting the seedlings at the ground level *Platypus bifarmis*, the shoot hole borer of chil, attacks felled and sickly standing chil trees and riddles them with holes. It is quite common in chil forests and greatly depreciates the value of the timber if the conversion is not quickly done. *Ips longifolia* bores kail poles and makes irregular galleries which may result in snapping of these poles in case of severe attack.

Table 2.6 *Lantana* Infestation in Karsog

Range	Block	Beat	Name of Forests	Area (ha.)	Elevation (m)	Latitude (N)	Longitude (E)	<i>Lantana</i> Infestation (%)
Pangana	Tattapani	Tattapani	D 92 Sarour	61.42	826m	31°15'45.3"	77°04'3.9"	33-45%
			D 93 Thagi	52.80	798m	31°15'22.7"	77°4'41.9"	33-45%
			D 94 Tatapani	35.41	694m	31°14'59.2"	77°05'26.4"	33-45%

			D 95 Jeori	46.13	780m	31°15'1.4"	77°05'26.4"	<33%
			D 96 Sajh	27.13	1198m	31°15'58.9"	77°4'27.6"	<33%
			D 97 Seri Sarv	11.43	1331m	31°15'55.2"	77°05'56.3"	33-45%
			D 98 Kidya	140.66	732m	31°14'55.9"	77°06'24.1"	33-45%
			D 99 Braiker	27.30	665m	31°14'45.6"	77°07'43.1"	<33%
			D 100 Ghangoor	111.91	666m	31°14'23.1"	77°07'35"	33-45%
			D 101 Nando	401.50	820m	31°14'16"	77°09'3.8"	<33%
		Balindi	D 74 Perbain	1046.21	1143m	31°17'52.1"	77°04'30.7"	33-45%
			D 79 Mohuru Dhak C II	54.15	1297m	31°17'39.7"	77°07'8.7"	<33%
			D 80 Kandha	116.80	1222m	31°17'44.5"	77°06'23.3"	<33%
Seri	Seri	Nihari	D 214 Jhuanjan	528.52	786m	31°17'32.5"	77°18'1.7"	<33%
		Nanj	D222 Pog CI to CIV	92.58	817m	31°20'15.5"	77°20'45.5"	0.10%
Karsog	Mamail	Mendhi	D 201 Agli Dhar	21.83				<33%
			D 202 Parla Dhartoo C I to C IV	104.40				<33%
			D 198 Dhanyara I	52.55	1199m	31°20'8.5"N	77°14'31.7"	30-45%

2.4.11 INJURIES BY NATURE Due to climatic variations, the following injuries are caused by nature.

(i) **Snow:** Snow damage occurs chiefly at higher altitudes but exceptional heavy snowfall at low elevations also does considerable damage. The congested *kail* crop is more susceptible to snow damage and many trees are uprooted, while several others are top broken, un-thinned deodar plantations also suffer heavily from snow break.

(ii) **Hail and storms:** Hail and storms during summers do not do any appreciable damage in the forests. Strong winds after heavy snow or rain results in uprooting of large number of trees in these forests every year. Hail storms are quite frequent and heavy during March and do appreciable damage in deodar and fir nurseries by killing the young seedlings germinating at that time.

(iii) **Lightening:** The damage due to lightening is not appreciable but solitary trees are sometime killed. In some cases the trees are not killed, top is broken and the bole splits up.

(iv) **Frost:** The damage by frost is confined to lower hills. Frost does little damage to chil, but when it is exceptionally sever the seed production is adversely affected.

(v) **Drought:** Drought conditions prevail in the lower overgrazed areas during May and June and sometimes during October and November also. In case of severe drought, fairly large number of plants dies in the plantation areas, especially on southern, exposed and overgrazed, slopes. Deodar seedlings also die of drought during summer, if there is no sufficient over-head shade. Besides killing young seedling, drought increases fire hazard in chil and other low lying forests.

(vi) **Erosion and landslips:** Soil erosion in the lower overgrazed areas of chil and other miscellaneous forests is doing considerable damage by washing away fertile soil and deteriorating site quality giving rise to poor quality crops. Some of the low lying areas have become so refractory that it is a problem to afforest them satisfactorily. Although land slip problem is not very acute, small landslips are not uncommon in Chil and scrub forests.

CHAPTER II B

FOREST FAUNA

A variety of fauna is found in the tract due to variation in altitudes, topography, climate and vegetation. The important fauna is Leopard or Panther (*Panthera pardus*), Himalayan Black Bear (*Selenarctos thibetanus*), Brown Bear (*Ursus arctos*), Jungle Cat (*Felis chaus*), Leopard Cat (*Felis bengalensis*), Himalayan Pine Marten (*Martes flavigula*), Jackal (*Canis aurs*), Red Fox (*Vulpes vulpes*), Ghoral (*Nemorhaedus goral*), Musk Deer (*Moschus moschiferus*), Kakker (*Muntiacus muntjak*), Indian Wild Bear (*Susscorfa cristatus*), Monkey (*Macaca multata*), Langurs (*Presbytis entellus*), The Giant Indian Flying Squirrel (*Etaurista petaurista*), Indian Hare (*Lepus nigricollis*)

2.5 BIRDS

Himalayan Griffon Vulture (*Gyps himalayensis*), Golden Eagle (*Aquila chrysaetos*), Monal (*Lophophorus impeyanus*), Cheer Pheasant (*Catreus wallichii*), Chakor (*Electors chukor*), Koklas (*Pucrasia macrolopha*), Kaleej Pheasant (*Leophura leucomelana*), Red Jungle Fowl (*Gallus gallus*), Western Tragopan (*Tragopan melanocephalus*), Black Partridge (*Francolinus francolinus*), Wood Cock (*Scalopax rusticola*)

2.6 INJURIES TO WHICH FAUNA IS LIABLE The fauna of the tract is decreasing due to reduction of the habitat as a result of ongoing development activities. The need of growing population is the cause of animal-human conflict. The normal living conditions of the wild life are disturbed which is a matter of concern. The following are the hazardous influences threatening the wild life:-

1. **Development Activities:** - The state is in the development phase and the road, path construction is the main activity which in turn is slowly damaging/destroying the natural habitat. The tendency to expand the cultivations into the forests/ natural habitat of wild life is another cause of animal-human conflict.
2. **Hunting** In spite of complete ban on hunting, the stray incidences of hunting wild animals do take place particularly, when the animals migrate to lower elevations due to unfavorable conditions. The damage to orchards and agriculture crops prompts local people to resort to hunting.
3. **Fires** Forest fires destroy the habitat and the wild animals are trapped, killed. The fires destroy the eggs, young ones in the hollow rocks, dead stumps and nest built in stumps and on ground.
4. **Climatic Conditions** Sometimes the adverse climatic conditions like heavy rains, heavy snow, and prolonged drought affect the wild animals particularly the young ones.

2.7 ANIMAL POPULATION

Langoor census was conducted in the Division in 2005 and two troops with 42 langoores were counted. The census was also conducted in rural, urban areas and in temples, however, no ape was found there.

Table 2.7 Population Estimation of Langoores

Range	Date	No of troops	Male	Female	Young	Unidentified	Total
Karsog	6/16/2005	0	0	0	0	0	0
Magroo	6/16/2005	0	0	0	0	0	0
Pangana	6/16/2005	2	10	12	8	12	42
Seri	6/16/2005	0	0	0	0	0	0
Total		2	10	12	8	12	42

Source: DFO Karsog Office Record

Population estimation of monkeys was carried out in 2003 and twice in 2010 (January, June) and the total count on these three occasions was 2749, 5231 and 7213. This shows a constant increasing trend in monkey population as is elsewhere in the state.

2.8 MAN ANIMAL CONFLICT A look at Annexure V reveals that most of the cases of man-animal conflict pertain to leopard killing livestock at the animal sheds. Habitat degradation, shrinking space and shortage of food often forces the wild animals towards populated areas and it has resulted into the loss of lives of domestic animals as well as property local people. Due compensations were granted to the grieved family. The cases of killing the domestic animal and cattle are reported every year. For the last 10 years around 200 cattle/sheep/goats were killed. An amount of about Rs. 5.50 laths was paid as compensation to the affected. In order to ameliorate the situation, plantation of fruit bearing trees like *Myricana esculanta*, *Quercus leucotrichophora* were generally done in the forest areas.

Few stray incidences of black bear attacking human beings have also been reported in last ten years. Tattapani, Bagshad, Mamail and Karsog blocks have been most affected by these conflicts where the incidences of animal killing have taken place both in cattle shed and forest areas. As a long term strategy, habitat improvement can be done by planting fruit trees in the forest areas. In recent years a few cases of monkey biting have also been reported. As in other parts of the state, monkeys are attracted to towns and other habitation for easy availability of food which is catered to them by piles of garbage lying in open. To address this issue, proper management of garbage needs to be done.

2.9 PROTECTION AND MANAGEMENT OF FAUNA Karsog division is surrounded by Shikaridevi Wild Life Sanctuary which is a part of Protected Area Network of the state.

Shikari Devi Wildlife Sanctuary

Introduction: Shikari Devi Wildlife Sanctuary (213.51sq. kms.) adjoins three forest Divisions namely Karsog, Nachan and Suket falling in Mandi District of Himachal Pradesh in the Western Himalayan region within 1800m to 3300 m above mean sea level. It was declared as Sanctuary under Wildlife (Protection) Act, 1972 in the year 1974. This Sanctuary can be approached by road from Shimla to Sundernagar and further to Thunag and Karsog (208Km) or alternatively from Shimla to Karsog by road (116 km) and finally 12 km on foot. Nearest Railhead and Airport is Shimla.

Flora and Fauna: The area has largely temperate climate. Himalayan moist temperate, Western Mixed Coniferous forests, Kharshu Oak forests, Ban Oak forests, Upper Chir Pine forests, Sub-Alpine forest and Alpine moist scrub are the major vegetation types found in the area which provide variety of habitat types and niche to various types of mammalian and avian fauna. Leopard (*Panthera pardus*) is the main mammalian predator. Besides Leopard other predators include Himalayan Black Bear (*Selenarctos thibetanus*), Himalayan Yellow-throated Marten (*Matres flavigula*), Himalayan Palm Civet (*Paguma larvata*). The potential prey species found are Goral (*Nemorhaedus goral*), Barking deer (*Muntiacus muntjak*). Musk Deer (*Moschus leucogaster*) is also reported to occur. Amongst primates, Common Langur and Rhesus Macaque (*Macaca mulatta*) are also found in the area. The Sanctuary provides refuge to five out of seven species of Pheasants found in Himachal Pradesh, namely Himalayan Monal (*Lophophorus impejanus*), White crested Kaleej (*Lophura l. hamiltoni*), Koklas Pheasant (*Pucrasia maculophya*), Indian Peafowl (*Pavo cristatus*) and Red Jungle Fowl (*Gallus gallus murghi*). Though an exhaustive list of birds has not been prepared but some prominent species include Himalayan Griffon Vulture (*Gyps himalayensis*), Chukor (*Alectoris chukar*), Tickell's Leaf-warbler (*Phylloscopus affinis*), Rufous-streaked Accentor (*Prunella himalayana*), Wall Creeper (*Tichodroma muraria*) etc.

Wildlife Population estimation: Recent population abundance estimation for the key species except Pheasants has not been carried out. However, census carried out in the year 2003-04 reveal wildlife populations: Leopard (6), Himalayan Black Bear (3), Musk Deer (1), Koklas (110), White crested Kaleej (111), Himalayan Monal (123), Indian Peafowl (7) and Chukor (50). Though these figures do not seem to have been determined by following systematic population monitoring methods but can be considered as indicative of presence of these species. Population estimation of Pheasants carried out recently during the year 2009-10 is more methodical. Highest population density of White crested Kaleej (37.29 birds per sq.km) has been recorded followed by other species namely Koklas

(28.62 birds per sq.km), Himalayan Monal (10.64 birds per sq.km), Red Jungle Fowl (10.41 birds per sq.km) and Indian Peafowl (7.49 birds per sq.km).

Pressures on Sanctuary's Resources

The Sanctuary has 113 villages inside with the human population of around 6000. Some villages are located in the surroundings also. Live stock rearing is one of the main occupations besides cultivation. Live stock population figures around 14000 inside and significant number in the surroundings. Apart from this, there are significant number of migratory graziers, who were having permissions previously to graze around 3000 animals mainly goat, sheep, buffaloes, cows and mules which has now been restricted due to the orders of Hon'ble Supreme Court banning all development activities and even removal of timber, fuel wood, grasses etc. inside Protected Areas including grazing. Most of the local populace inside the Sanctuary including some from the surrounding villages are marginal farmers and meet their daily grass, fodder, fuel wood, grazing requirements from the Sanctuary. There is also significant movement of the people inside the Sanctuary due to the famous Shikari Devi shrine and other areas namely Bulah, Devidarh and Budha Kedar.

Eco-Treks; Some Eco-Treks which are fairly used by the visitors are 1) Rajgarh - Khanukhali-12 km, 2) Devidarh - Shikari Devi - 12 Km, 3) Thunag - Shikari Devi - 10 km, 4) Churasini-Bakhrot-13 km, 5) Shankar Dehra - Shikari Devi-18 km.

Human -Animal Conflict: Due to high human and domestic live stock density, there is apparent human -wildlife conflict and reported cases of killing by Leopards. 14 cases of live stock killings by Leopards have been recorded during the last six years in which compensation have been claimed by local people. Though no poaching case has been detected during the last five years but threat to Wildlife cannot be ruled out.

Management Staff

This Sanctuary comes under the administrative control of Divisional Forest Officer (Wildlife), Kullu and Range Forest Officer (Wildlife) Karsog. Though there is a sanctioned strength of 18 Frontline Staff including RFO (1), Deputy Ranger (4) and Forest Guards (13) to manage this sanctuary but presently there are only 14 which includes Deputy Rangers (4) and Forest Guards (10) and rest of the posts are lying vacant.

Rationalization of Boundaries: Under rationalization of Boundaries of Protected Areas in Himachal Pradesh, it has also been proposed to rationalize the boundary of this Sanctuary. Rationalization has been felt necessary owing to the presence of human population inside the notified area largely dependent on Sanctuary's resources and also restrained developmental activities which resultantly led the local populace to become antagonistic to conservation efforts. After proposed rationalization is approved, area of the Sanctuary shall reduce from 213.51 Sq. Kms. to only 30 Sq. Kms. Post rationalization scenario is shown in the Table 2.8 and Table 2.9 below.

Table 2.8. Area Statement

Notified Area (Sq Km)	On Ground Area (Sq Km)	Area to be excluded (Sq Km)	Area to be Included (Sq Km)	Post Rationalization area (Sq Km)
213.51	112.94	83.00	00	29.94

Table 2.9 Post-Rationalization Scenario

Post Rationalization Area (Sq. Kms.)	No. of Villages	Human Population	Cattle Population	Cultivated & Inhabited land (Sq Km)

	Existing	Excluded	Existing	Excluded	Existing	Excluded	Existing	Excluded
30	113	113	6102	6102	14222	14222	13.55	13.55



Photo 1: Inside Sanctuary



Photo 2: Kharsu Oak Forest near Shikari Devi Temple

2.10 MEASURES FOR PROTECTION:-Wildlife tourism is the latest trend being extensively projected in the state. The complete check on poaching through local people participation is the key for protection. The road communication has increased the menace of hunting. The following measures are suggested:-

1. Rrenewal of existing arms licenses and grant of new ones to be judiciously done.
2. Adequate staffing, particularly of FGs is a must for the protection of wild life.
3. Seeking public cooperation and rewarding informers who help apprehending poachers.
4. Addressing the problem of crop damage by wild life on priority.
5. Wide publicity for wildlife protection. Services of retired teachers, ex-servicemen, NGOs should be taken for this onerous task.

CHAPTER III

UTILIZATION OF FOREST PRODUCE

3.1 DEPENDENCE ON FORESTS In View of the increasing human and animal population as discussed in Chapter I, the forest resources are under tremendous pressure and the process of degradation needs to be halted. The indicators of resource degradation include drying up of underground water, depletion of water table and reduction in soil productivity and fertility. The dependence of forest resource is depicted as under:-

- Being rural area, people depend on forests to meet their fuel, fodder requirements.
- Timber to the tune of ₹10 to 15 crore and fuel wood benefit of ₹20 to 30 lac annually is being enjoyed by local people.
- The forest resource is major employment entity of the tract. Annually 3 to 4 lac mandays are being generated by Forest Department. This includes 1.5 to 2 lac mandays generated by Forest Corporation.
- Annual fodder requirement is 313630 tons, part of which is met with from agricultural resources. However, a major part of this is met from forests as heavily lopped trees are found all over the tract. Thus the priority of any plantation programme will be to plant fodder species close to habitation. This will decrease the number of cattle venturing into forest areas.
- The collection of NTFP and further sale also adds to the economy of people, mainly poor. It supplements the family income. In some panchayats, ₹ 8000 to 15000 per family is earned annually through the collection of NTFPs like guchhi, anardana, banapsha.
- Oxygen and water being consumed is priceless. The fixation of carbon is another important contribution.

Thus the forests of the division play a significant role in the rural economy, and its conservation, development, protection on sustainable basis is the need of the hour and a major challenge.

3.2 WANTS OF THE POPULATION People depend upon forests for their requirements of timber for construction & repair of houses and agricultural implements, fuel, grazing, grasses, fodder, fallen leaves for manure, building stone, various medicinal herbs, fruits etc.

3.2.1 TIMBER The timber to right holders is provided under timber distribution (TD) rules framed by the Govt. in consonance with settlement provisions which stands revised now. The market cost of total timber provided during 1986-87 was ₹93.4 lac and has gone up to ₹10.7 crores in 2003-04. The trees were given on very nominal rates as fixed in the settlement report as given in table 3.1 below:-

Table 3.1 RATE IN ₹/TREE OF DIAMETER (in cm)

1. SUKET SETTLEMENT						
Spp.	20-30	30-40	40-50	50-60	60-70	70-80
Deodar	0.37	0.75	1.5	1.5	3	6
Kail	0.25	0.5	0.75	0.75	1	1
Chil	0.19	0.37	0.55	0.55	0.75	0.75
Rai/Tosh	0.25	0.25	0.25	0.25	0.5	0.5
2. MANDI SETTLEMENT						
Deodar	0.25	0.5	1	1	2	4
Kail	0.25	0.25	0.5	0.75	0.75	1
Chil	0.12	0.25	0.37	0.37	0.5	0.5
Rai	0.12	0.12	0.12	0.12	0.25	0.25

The detail of trees granted to right holders during the period 1986-87 to 2003-04 is given in table 3.2

Table 3.2 TIMBER GRANTED TO RIGHT HOLDERS (m³)

Year		Deodar	Kail	Chil	Fir/ Spruce	Misc/Bt	Total	Value (₹)
86-87	Volume	2241	991	611	28	7	3879	93,43,991
	No.	1067	653	608	18	7	2353	
87-88	Volume	2697	1578	649	74	0	4998	1,18,91,070
	No.	1248	832	607	32	0	2719	
88-89	Volume	3798	2735	1139	51	3	7925	1,97,98,425
	No.	1797	1357	1039	23	2	4218	
89-90	Volume	3277	1616	1477	521	2	6893	1,94,63,547
	No.	1477	887	1319	43	1	3727	
90-91	Volume	1567	820	809	16	4	3216	1,22,97,643
	No.	672	358	622	7	6	1665	
91-92	Volume	3576	2301	648	73	10	6607	2,64,29,983
	No.	1493	877	482	24	9	2885	
92-93	Volume	1657	650	925	3	25	3259	2,02,99,816
	No.	633	287	770	1	20	1711	
93-94	Volume	1027	623	530	2	16	2197	1,39,99,186
	No.	374	255	336	1	12	978	
94-95	Volume	3775	2303	2111	18	23	8230	5,72,46,086
	No.	1306	817	1199	5	16	3343	
95-96	Volume	1426	1219	1467	0	3	4116	2,90,43,797
	No.	600	417	1058	0	4	2078	
96-97	Volume	4420	2540	2061	8		9030	7,80,13,837
	No.	1239	863	1185	2		3289	
97-98	Volume	1670	1193	2086	0	4	4953	3,33,03,145
	No.	515	410	1241	0	2	2168	
98-99	Volume	3292	2081	2337	15	16	7742	7,62,14,208
	No.	1074	724	1267	4	11	3080	
99-2000	Volume	3457	2299	2373	13	16	8158	8,90,09,281
	No.	1186	759	1388	5	12	3350	
2000-01	Volume	3284	1908	1078	19	20	6309	8,27,15,827
	No.	963	632	738	5	9	2347	
2001-02	Volume	2493	797	1028	28	0	4347	4,85,23,577
	No.	761	399	609	7	0	1776	
2002-03	Volume	574	296	372	16	0	1260	2,51,25,892
	No.	225	96	190	4	2	517	
2003-04	Volume	2684	1307	1154	52	2	5198	10,73,93,206
	No.	808	432	574	14	1	1829	
2004-05	Volume	4963	2740	1614	47	-	9364	21,64,31,085
	No.	1405	845	829	14	-	3039	
2005-06	Volume	1689	953	721	7	3	3373	6,04,48,939
	No.	511	305	407	2	2	1227	
	Volume	-	25	10	-	36	71	
2006-07								12,06,050
	No.	-	9	7	-	16	32	
	Total	53566	30976	25199	991	189	111221	1038198591
		19354	12214	16475	227	132	48402	

There is change in this policy now and the trees are given in converted form. Due to ever increasing demand of timber, three timber sale depots have come up in Karsog forest division being operated by private individuals. There are 88 saw mills and 22 furniture & joinery shops registered with the division. The list of timber sale depots is given in Table 3.3.

Table 3.3 Timber Sale Depots in Karsog

S.No.	Name and Address	Registration No.
1	Sh. Ram Saran s/o Sh. Khanu Ram village & P.O Bakhrol Tensli Karsog.	1/KSG/2003-04
2	Sh.Bhim Singh Keshri s/o Smt.Keshru Devi village & P.O. Parala Kashout, Tehsil Karsog.	2/KSG/2003-04
3	Sh. Mehar Singh s/o Sh. Shodhu Ram village & P.O. Kao, Tehsil Karsog.	1/KSG/2005-06

3.2.2 FUELWOOD & CHARCOAL: Total number of domestic gas connections in Karsog Forest Division is 15282 (as against 15465 households) while commercial connections are 148. The entire Division is catered by only one gas agency located at Karsog. Total number of refills of domestic gas cylinders in 2010 were 39535 which means about 2.59 refills per connection. An average family would require 6-8 refills in a year to meet all energy needs of cooking. Thus it is estimated that roughly 65% of the need of fuel for cooking is being met with alternate sources mainly from forest.

The estimated requirement of fuel wood and charcoal in the division is estimated to be 5000 and 1200 quintals respectively for domestic use only. The LPG has significantly reduced the requirement of fuel wood but the villagers enjoy privilege of getting free fuel wood from forest and very often resort to heavy lopping and stripping of bark of Ban oak. Indiscriminate felling of Ban oak in the past has left little scope to fell more ban oak trees which is the main source of fuel wood and charcoal in the tract. Ban oak is completely protected species as notified vide letter No. Fts.(F) 13-38/84 dated 11.3.86.

Presently a fuel wood/ charcoal depot is being maintained at Karsog by HPSFC. Previously the fuel wood/ Charcoal were supplied from coppice lots worked by H.P. State Forest Corporation and sold by Forest Department. During 1988 vide letter No. Fts (F) 12-31/83 dated 28-12-87 the sale depots were transferred to H.P. State Forest Corporation. The rates of fuel wood/charcoal (Ban/Moru oaks) are given in table 3.4 .

Table 3.4 Fuel wood rates in Karsog Forest Division

Year	Rate of Charcoal (₹ per quintal) Govt.Deptt.	Rate of Charcoal (₹ per quintal) Non-right holders	Rate of Fuel wood (₹ per quintal) Govt.Deptt.	Rate of Fuelwood (₹ per quintal) Non-right holders
1990-91	369	240	122	80
1991-92	406	264	134	88
1992-93	430	280	150	106
1993-94	430	280	150	96
1994-95	510	382	206	145
1995-96	510	382	206	145
1996-97	637	477	257	181
1997-98	637	477	257	181
1998-99	637	477	257	181
1999-00	700	525	334	217
2000-01	700	525	334	217

[Source: DM, FWD Sundernagar]

3.3 MARKETS AND MARKETABLE PRODUCE: The principal marketable products are timber, resin, firewood, charcoal.

- 1) **TIMBER** Timber of Chil, Kail, Deodar, Fir and Spruce finds ready market in neighbouring states of Punjab and Haryana. Chil timber is in great demand for construction purposes. The demand for Deodar and Kail continues in the form of construction timber of various sizes. The wood of parang (*Acer oblongum*) is in great demand for shuttle and bobbins.

ii) Table 3.5 Timber Extracted By Purchasers/Forest Corporation (in m³)

Year	Nature of Marking	Deodar	Kail	Chil	Rai/Fir	Ban	Braha	OBI	Total
86-87	Green			166					166
	Salvage		532	1155	19.89				1707
	Total		532	1321	19.89				1873
87-88	Green	13	835	348	-				1196
	Salvage	384	1605	2680	36	706		8	5448
	Total	397	2440	3027	36	706		8	6643
88-89	Salvage	2371	5691	1323	1487	277	137	252	11537
89-90	Green		298	471					769
	Salvage	224	341	649	112	317	43		1686
	Total	224	639	1120	112	317	43		2455
90-91	Green			139					139
	Salvage			177		143	43		363
	Total			317		143	43		502
91-92	Salvage		116	348	1				465
92-93	Salvage	1016	2045	209	264				3535
93-94	Green		281	6315	-				6595
	Salvage	342	1533	60	58				1994
	Total	342	1814	6375	58				8589
94-95	Salvage	106	318	681					1105
95-96	Salvage	1109	4499	2378	62				8049
96-97	Salvage	1031	2697	21	841	236	44		4870
97-98	Salvage	355	647	2178	350	19		5	3554
98-99	Salvage	19	637	289	24	94			1064
99-00	Salvage	601	419	977	86				2083
00-01	Salvage	597	2279	60	271				3207
2001-02	Salvage	188	1487	4809	184			812	7419
2002-03	Salvage	286	1369	3114	111				4879
2003-04	Salvage	760	1101	522	598				3140
2004-05	Salvage	319	1038	1845	150	197	26	162	3739
2005-05	Salvage	108	618	1158	573				2456
2006-07	Salvage			1373					1373
2007-08	Salvage	636	152		18				806
2008-09	Salvage			349.6					350
2009-10	Salvage	96		660					756
2010-11	Salvage		61					3	64
2011-12	Salvage	19		904					923
Total		10260	29560	33515	5094	1792	266	1079	81696

[Source : Office record DFO Karsog]

With the construction of roads, economic working of these forests has become easy & with the nationalization of working of forests, H.P. State Forest Corporation Ltd. carries out exploitation of timber which is sold through its timber depots. One such depot is located at Dhanotu (Sundernagar). The total volume of timber removed since 1986-87 year wise is given in Table 3.5.

(iii) SUPPLY OF POLES TO H.P. STATE ELECTRICITY BOARD These were given at specified rates from 1986-87 to 1996-97 in accordance with the approved policy of the state. The detail of trees supplied along with the rates charged are given in table 3.6.

Table 3.6 Trees supplied to HPSEB

Year	Species	No. of trees Girth	Rate (in ₹)	No. of trees Girth	Rate (in ₹)	Total no. of trees	Amount (in ₹)
		15 to 25 cm		26 to 35 cm			
86-87	Deodar	658	50	430	225	1088	129650
	Chil	32	25	269	75	301	20815
	Total	690		699		1389	150465
90-91	Deodar	482	260	519	780	1001	5,30,140
92-93	Deodar	136	315	15	940	151	56,940
93-94	Deodar	434	350	195	1,035	629	3,53,725
94-95	Deodar	163	385	116	1,140	279	1,94,995
95-96	Deodar	8	395	15	1,175	23	20,785
96-97	Deodar	522	435	254	1,290	776	5,59,730

(Source: Office records of DFO Karsog)

iii) **RESIN** Resin is extracted from Chil forests through H.P. State Forest Corporation. Resin so extracted is transported to Resin and Turpentine factories at Bilaspur/Nahan for further processing. The detail of Resin extraction from 1986 to 2005 is tabulated in table 3.7.

Table 3.7 Resin Extraction

Year	No. of Blazes	Resin extracted (Qlt)	Average yield per 1000 blazes (Qtls)	Year	No. of Blazes	Resin extracted (Qlt)	Average yield per thousand blazes (Qtls)
1986	2,16,934	3,340.01	15.4	1998	4,57,216	13,587.91	29.72
1987	1,96,382	4,794.84	24.42	1999	4,42,525	14,454.12	32.66
1988	2,06,537	3,990.33	19.31	2000	4,32,482	15,056.71	34.81
1989	3,31,426	9,938.89	29.98	2001	3,65,794	14,018.69	38.32
1990	3,49,774	13,053.03	37.31	2002	3,90,002	14,405.83	36.94
1991	4,47,612	20,299.37	45.35	2003	3,85,562	11,811.10	31.24
1992	4,42,835	21,636.24	48.86	2004	3,75,681	14,307.83	38.08
1993	5,87,615	23,397.15	39.82	2005	3,58,861	13,643.90	38.02
1994	5,67,472	25,982.43	45.79	2006	3,56,236	14,245.88	38.03
1995	5,66,341	22,934.63	40.5	2007	3,54,835	13,835.02	38.99
1996	5,58,373	19,167.13	34.33	2008	3,18,233	10,737.18	33.74
1997	4,62,940	12,267.52	26.5	2009	2,48,932	8,762.41	35.2
				2010	2,18,864		29.71
				2011	2,29,687		34.11

(Source : DM FWD, Sundernagar)

(iii) **NON TIMBER FOREST PRODUCE** People have rights for collection and sale of medicinal herbs. The important medicinal herbs collected by the local people are *Viola serpens* (Banpasha), *Veleriana wallichii* (Mushkbala), *Dioscorea* spp., *Berberis* spp., *Podophyllum* spp., *Mentha sylvestris*. The NTFP exported in last 5 years is given in table 3.8.

Table 3.8 NTFP Exported from Karsog Forest Division

Year	Name of NTFP exported	Quantity (Quintal)
2002-03	Kail cones	925
	Cedar Rose	45
	Guchhi	8.5
2003-04	Berberis roots	2296
2004-05	Berberis roots	930
2005-06	Berberis roots	2920
2006-07	Berberis roots	500
2009-10	Berberis roots	241
2010-11	Berberis roots	3336

(Source: Office record DFO Karsog)

The medicinal herbs have markets mainly at Amritsar (Punjab) and Delhi. The cones are exported to other parts of the country also.

3.4 DEMAND AND SUPPLY OF FOREST PRODUCE: The demand of almost all forest produce is ever increasing and it definitely has huge pressure on forests. Although the state has imposed ban on green felling yet meeting requirements of the people is a challenge. All the forest produce like timber, fuel wood, NTFP are in great demand. The supply of timber requirement for construction/repair of houses has gone over ₹10 to 15 crores whereas it was ₹60-70 lac in 1985-86. The yield position of PBII, PBIII is on plus side in both Deodar-Kail and Chil working circles. The average sale of timber at HPSFC sale depot Dhanotu is ₹8 to 10 crores per annum. Karsog division is the major resin extraction division of the state however extraction of resin and its impact of health of forests is a debatable issue.

3.5 LINE OF EXPORT: With the network of roads covering the length and breadth of the division, khad floating or river floating has come to a stop and thus the timber is now transported on trucks. Resin is transported by trucks as mentioned above for further processing at Bilaspur & Nahan Rosin & Turpentine factories.

3.6 ROADS The important roads in the tract are given in Table in 3.9.

Table 3.9 Roads in Karsog Forest Division

S. No.	Particular of roads	Total Length (Km)	Length in Karsog division (km)
1	Chhattri-Karsog	146	80
2	Chauridhar-Karsog	127	65
3	Sundernagar-Jhungli-Bakhrot-Tattapani	214	152
4	Mahunag-Churag-Sundernagar	93	36
5	Kotlu-Kelodhar-Sungernagar	160	98
6	Bakhrot-Snari-Kelodhar-Kotlu-Luhli	65	42
7	Kotlu-Katanda	33	33
8	Jachh-Pressi-Pangna	14	14
9	Kheelkufri-Mahunag	10	10
10	Tattapani-Shakra	10	10
11	Seri-Sahot	7	7
12	Chhattri-Gagagosa n	9	9
13	Chhattri-Magrugalla	3	3
	Total	891	559

(Source : Office of Executive Engineer, PWD, Karsog)

3.7 PAST AND CURRENT PRICES: The prices of trees for the last 19 years are given in Table 3.10.

Table 3.10 Market Rate of Green Standing Trees (in ₹/ m³)

Year	Deodar	Kail	Chil	Fir/Spruce	Year	Deodar	Kail	Chil	Fir/Spruce
1988-89	3201	2123	1560	1157	1999-00	15375	13641	5603	6587
1989-90	3761	2441	1716	1273	2000-01	16913	15905	6168	7212
1990-91	4814	3662	2111	1719	2001-02	18608	18608	6779	7934
1991-92	6403	5676	2702	2407	2002-03	20485	18156	7457	8728
1992-93	7890	7000	2875	3365	2003-04	22511	19972	8203	9601
1993-94	8679	7700	3163	3702	2004-05	24762	21969	9023	10561
1994-95	9547	8470	3470	4072	2005-06	27238	24168	9925	11317
1995-96	10502	9317	3827	4479	2006-07	29600	27600	10600	13200
1996-97	11562	10249	4200	4927	2007-08	33389	32232	10600	13200
1997-98	12707	11274	4630	5419	2009-10	44031	38044	15372	17271
1998-99	13978	12401	5093	5961					

(Source: Office record DFO Karsog)

3.7.1 The market rates of green standing trees of broad leaves are as presented in Table 3.11.

Table 3.11 Market Rate of Green Standing Broad leaved Trees

SPP.	Rate per cum (₹)		
	2006-07	2007-08	2009-10
Ban Oak	18000	18000	18000
Shisham	10100	14492	21663
Sal	8200	9990	10839
Sain		8200	11229
Kokath	3200	4099	5254
Eucalyptus		5481	6076

(Source: Office record DFO Karsog)

3.7.2 The rates for sale to non-right holders and other departments for different species are fixed by Govt. The comparative rates for 1993-94 vis-a-vis 2007-08 are shown in Table 3.12.

Table 3.12 Rates of Conifer Timber for Non-right holders

Dia. Class	Deodar(₹/Cum.)		Kail(₹/cum.)		Chil(₹/cum.)		Fir/Spruce(₹/cum.)	
	93-94	2007-08	93-94	2007-08	93-94	2007-08	93-94	2007-08
V	442	3472	560	2933	144	625	289	1940
IV	1546	10451	1470	9057	316	2321	952	4726
III	5965	24341	4130	22305	805	5989	3049	12210
IIA	12372	51486	8610	48412	2099	12349	5559	24895
IIB	20766	83873	17850	82412	4312	23585	9328	39521
IA	30929	125643	26460	126833	7561	37524	13615	62964
IB	44184	165609	37590	171378	11356	47488	18656	84770
IC	56335	203673	52150	206478	15697	62275	24120	109019
ID	56335	236962	52150	241289	15697	75589	30176	135445
IE	-	313155	-	318291	-	91255	-	154163

(Source: Office record DFO Karsog)

3.7.3 For broad leaved species, the rates for sale of green standing trees to non-right holders and other departments for 2007-08 are shown in Table 3.13.

Table 3.13 Rates of Broad leaved Timber for Non-right holders

Dia-class	Ban Oak	Shisham	Sal	Poplar	Mis. BL	Eucalyptus
	(₹/cum)	(₹/cum)	(₹/cum)	(₹/cum)	(₹/cum)	(₹/cum)
V	1800	927	1199	632	660	625
IV	6390	2551	3576	1728	889	1710
III	15804	6768	8022	2770	2308	2741
IIA	28800	14159	12298	3324	4550	3289
IIB	45216	22071	31089	3324	6780	3289
IA	59364	32824	44835	3324	9522	3289
IB	69120	-	62238	3324	12121	-
IC	84024	-	-	-	-	-
ID	100080	-	-	-	-	-
IE	119646	-	-	-	-	-

(Source: Office record DFO Karsog)

CHAPTER IV

ACTIVITIES OF FOREST CORPORATION

The exploitation works of the forests are executed through state owned H.P. State Forest Corporation Ltd. In respect of Karsog forest division, the exploitation of timber and extraction of resin are assigned to the forest corporation.

4.1 HARVESTING / EXPLOITATION OF TIMBER Only dry and fallen trees referred to as salvage are handed over to Divisional Manager, HPSFC Ltd. Sundernagar who has jurisdiction over this division. The position of last 5 years is given in Table 4.1.

Table 4.1 Salvage Removals Since 2001 from Karsog Forest Division

Year	Nature of Marking	Deodar	Kail	Chil	Ral/Fir	Ban/ Mohru	Braha	OBL	Total
2001-02	Salvage	188	1487	4809	184			812	7419
2002-03	Salvage	286	1369	3114	111				4879
2003-04	Salvage	760	1101	522	598				3140
2004-05	Salvage	319	1038	1845	150	197	26	162	3739
2005-06	Salvage	108	618	1158	573				2456
2006-07	Salvage			1373					1373
2007-08	Salvage	636	152		18				806
2008-09	Salvage			350					350
2009-10	Salvage	96		660					756
2010-11	Salvage		61					3	64
2011-12	Salvage	19		904					923
Total		2412	5825	14734	1633	197	26	977	25904

(Source: Office records of DFO Karsog)

The HPSFC Inturn gets the exploitation work executed through contactors called Labour Supply Mates (LSMs). The employment to skilled, semi-skilled and general is provided almost throughout the year except in winter months. On an average 2.7 mandays per cum of standing volume handed over to forest corporation are generated. If the total standing volume in a year varies from 3000 to 5000 cum then the total mandays generated would be 8000 to 13500.

4.2 EXTRACTION OF RESIN: Karsog is one of the main resin extraction divisions.

The information of last 5 given in Table 4.2.

Table 4.2 Resin Extraction in Karsog Forest Division

Year	No. of Blazes	Resin extracted	Average yield per thousand blazes (Qtls)
2002	3,90,002	14,405.83	36.94
2003	3,85,562	11,811.10	31.24
2004	3,75,681	14,307.83	38.08
2005	3,58,861	13,643.90	38.02
2006	3,56,236	14,245.88	38.03
2007	3,54,835	13,835.02	38.99
2008	3,18,233	10,737.18	33.74
2009	2,48,932	8,762.41	35.2
2010	2,18,864		29.71
2011	2,29,687		34.11
Total	27,88,342	1,01,749	35.40

(Source: Office records of DFO Karsog)

On an average 480 mandays per annum are generated per section of resin tapping. In addition 700 to 1000 muledays are also generated for carriage of resin annually. Hence overall 1.5 to 1.75 lac mandays are generated annually of which about 60% labour is local and rest sourced from outside.

4.3 FUELWOOD AND CHARCOAL DEPOT One fuel wood cum charcoal depot is being maintained at Karsog which caters to the needs of Karsog town only. Although it provides timber to the residents it is a liability to the Department. The information of last 5 years is given in Table 4.3.

Table 4.3 Forest Produce sold at Fuelwood and Charcoal Depot

Year	Forest Produce	Forest Produce sold (quintals)	Amount realized	Overheads (Rs.)	Profit/Loss
2002-03	Fuel wood(BL)	51.5	11176	133692	Loss
	Charcoal	51.16	37246		
2003-04	Fuel wood(BL)	220.68	64737	143361	Loss
2004-05	Fuel wood(BL)	46.65	10245	152874	Loss
2005-06	Fuel wood(BL)	25	6625	165082	Loss
	Total	394.99	130029	595009	

[Source: Office records of DFO Karsog]

4.4 MARKETING OF FOREST PRODUCE Timber extracted from this division is marketed through sale depot Dhanotu. The annual sale turnover is between 8 to 10 crores and the Karsog division contributes to only 8 to 10 %. The resin is processed and further sold through Nahan and Bilaspur factories.

CHAPTER V

FIVE YEAR PLANS

5.1 GENERAL The forests of the division have been managed for getting sustainable yield. The silvicultural fellings were aimed at making the forest uniform and the regeneration achieved through natural means. Till the early seventies, the emphasis was on planting commercially important species such as deodar, kail, chil, fir, spruce etc. Growing demand of forest produce in the state especially that of timber resulted in focus on large scale plantations of commercially important species. Although the plantation programme started from I Five Year Plan but it gained momentum from III Plan onwards. The Plan wise management of forests is depicted as under:

5.2 I FIVE YEAR PLAN (1951-56):- After the merger of states in 1949, the forests were densely stocked and exploited commercially thereafter. Deodar and Chil working circles were constituted and worked. Fuel and fodder working circle to meet local demand and protection working circle to fulfill conservation objectives were created. There is nothing on record to show the silvicultural system which was adopted. The year-wise revenue and expenditure of the erstwhile Suket Forest Division is tabulated as under:

Table 5.1 Expenditure and Reenue of Suket Forest Division during First Five Year Plan

Year	Revenue(₹)	Expenditure(₹)	Surplus(₹)
1951-52	457325	112366	344959
1952-53	366721	119805	246946
1953-54	453360	112172	341208
1954-55	503431	162514	340917
1955-56	367994	170431	197537

(Source: Suket WP by Pande & Sharma)

5.3 II FIVE YEAR PLAN (1956-61) During this period, the Deodar forests were exploited for revenue with emphasis on regeneration by mainly natural means. Sewal and Gorrie did not prescribe regeneration fellings in Chil forests. The artificial regeneration in the form of patch sowing and planting has been carried out in Chil and Deodar forests. The slow pace of regeneration was primarily due to fire, uncontrolled grazing and poor protection. In 1960-61, 307559 cft. Conifers were removed in erstwhile Suket division, earning surplus revenue of ₹ 1066550.

5.4 III FIVE YEAR PLAN (1961-66):- The commercial working of all conifer species was continued with thrust on natural regeneration. Table 5.2 gives the yield (in cum) of deodar, kail, fir, spruce and chil during the plan period.

Table 5.2 Yield (in m³) of Conifers during III Five Year Plan

Year	Deodar	Kail	Chil	Fir/Spruce	Total
1961-62	5615	4259	83005	1448	94327
1962-63	2545	1283	149	447	4424
1963-64	4716	2451	152	4107	11426
1964-65	7127	4098	306	1369	12900
1965-66	12022	3898	398	4083	20401
Total	32025	15989	84010	11454	143478

(Source: Suket WP by Pande & Sharma)

5.5 IV FIVE YEAR PLAN (1969-74) The total growing stock of coniferous species in the forests allotted to Regular and Chil Working Circle during 1966-67 when enumerations were completed comes to 26.81 lac m³. Table 5.3 gives total growing stock of all the species, total removal and percentage of the growing stock removed during the plan period.

Table 5.3 Growing Stock and Removals from Forest during IV Five Year Plan

Year	Total growing stock m ³	Yield removed m ³	% of Growing Stock Removed
1966-67	26,81,000	53,867	2.00%
1967-68		37,556.14	1.00%
1968-69		50,825	1.80%
1969-70		83,607	3.10%
1970-71		55,745	2.00%
Total		2,81,600.14	

(Source : Suket WP by Pande & Sharma)

For the period 1966-67 to 1970-71 average 2.1% of the growing stock was removed, which is on the higher side. Pande and Sharma revised the working plan from 1971 onwards and calculated the deviation of less removal to the tune of 167438.36 cum in Regular working circle (Deodar-Kail forests) and less removal of 1912.89 in Chil working circle. The Plantation Working Circle was created. This working circle comprised the areas fit for raising plantation of valuable and economically more important species. The area allotted to this working circle was 1931 ha. in Karsog Division. In addition to this U.F.s, plantation areas were also allotted to this working circle. Year wise plantation programme for 15 years was given and plantation series were formed.

5.6 V FIVE YEAR PLAN (1974-78) The emphasis had already shifted to raise plantations on blank degraded forests. The year wise plantation programme adopted was as given in Table 5.4 below.

Table 5.4 Plantations Raised from 1974-78 in Karsog Division

Year	Area planted in Karsog range(ha)	Area planted in Seri range(ha)	Total Area Planted
1974	221	150	371
1975	199.5	83.6	283.1
1976	131	-	131
1977	180.4	38.8	219.2
1978	102.8	42.9	145.7
	834.7	315.3	1150

(Source: Suket WP by Pande & Sharma)

5.7 VI FIVE YEAR PLAN (1980-85) With the launching of social forestry programme, the focus shifted towards raising of fuel, fodder, small timber and grasses to meet the domestic needs of rural communities. Year wise plantations raised in Karsog division are given in Table 5.5 below:

Year	Area planted (ha)	Year	Area planted (ha)
1980-81	369.5	1983-84	316.5
1981-82	396.75	1984-85	893
1982-83	308	Total	2283.75

(Source: Pande & Sharma WP)

5.8 VII FIVE YEAR PLAN (1985-90) The social forestry works were in full swing, main emphasis being on raising fuel, fodder, small timber and grasses to meet the domestic needs of rural communities. The year wise plantations raised in Karsog division are tabulated below.

Table S.5 Plantations Raised from 1985-89 in Karsog Division

Year	Area planted (ha)
1985-86	945
1986-87	1139
1987-88	1535
1988-89	789
1989-90	754.5
Total	5162.5

(Source: Karsog WP by P S Guleria)

5.9 VIII FIVE YEAR PLAN (1990-95) The JFM approach started in the division and the forestry activities were implemented under departmental schemes and under ODA project. As ban on green felling continued, the objective remained afforesting denuded/degraded forests. The constitution of forest development committees and their participation in planning and implementation was sought.

5.10 IX FIVE YEAR PLAN (1995-2000) The activities of ODA/DFID continued in the pilot phase and in the C & D phase. The works of afforestation, soil conservation, entry point activity started by the VFDCs and microplan process learnt and executed. Sanjhi Van Yojna started on the principles of JFPM. Here again the focus remained on restocking/regeneration of degraded forests.

5.11 X FIVE YEAR PLAN (2000-2005) Both the JFM programmes DFID & SVY created mass awareness about forestry but the focus was again on raising plantations besides soil works and entry point activities. The contribution in works to the tune of 5 to 15 % was desired but could not be pursued properly. CAT Plan of Kol Dam was also implemented with emphasis on afforestation & soil, water conservation.

Table S.6 Plantations Raised from 2001-05 in Karsog Division

(Source: Office record DFO Karsog)

Year	ha	Year	ha
2001-02	484	2004-05	489
2002-03	251	2005-06	1062
2003-04	345	Total	2631

CHAPTER VI

STAFF AND LABOUR SUPPLY

6.1 STAFF POSITION The detail of staff sanctioned and in position in respect of Karsog Forest Division as on 1.3.11 is as under :-

Table 6.1 Staff Position of Karsog Forest Division as on 01.03.11

S.No	Category	Sanctioned strength	Existing strength	Variation
1	Class-I D.F.O.	1	1	-
2	Class-I A.C.F.	1	1	-
3	Class-II Range Forest Officer	6	3	(-)3
4	Dy. Ranger	15	18	(+)3
5	Forest Guard		46	(-)9
6	Superintendent	1	1	-
7	Sr. Assistant	3	3	-
8	Jr. Asstt./Clerk	7	4	(-)3
9	Driver	-	-	-
10	Patwari	-	-	
11	Class IV Khalasi/Peon	11	13	(+)2
12	Chowkidar	8	10	(+)2
13	Mali	9	12	(+)3
14	Syce	1	1	-
15	Forest Worker	110	96	(-)14
16	Cleaner	-	1	(+)1
17	Dak Runner	-	1	(+)1

{Source: Office of DFO Karsog}

6.2 EXECUTIVE CHARGES The division consists of four ranges viz. Pangna, Karsog, Seri and Magroo.

6.3 LABOUR SUPPLY For departmental works, local labour is available in sufficient number throughout the year except during sowing and harvesting of agricultural, horticultural crops and local fairs. The forest corporation also engages labour locally for timber exploitation and resin tapping works but about 40% labour comes from outside the forest division. The daily wagers are being regularized as per Govt. policy. In Karsog division, 46 persons have been regularized so far. Nearly 100 daily wagers are regularly working in the division for whom work is being provided. Nearly 200 to 500 other persons also work as casual labour in seasonal forestry works annually.

6.4 WAGE RATES The wage rate of labour has been increased manifold. The wage rate for normal unskilled labourer was ₹ 20 per day in 1990 which is now ₹ 120 per day (June, 2011)

CHAPTER VII

PAST SYSTEM OF MANAGEMENT

The state of Suket is believed to have been founded in 770 AD (1150 AD as per the Gazetteer) by one Vira Sena or Bir Sen. After having systematically subjugated many petty chieftains in the area, Bir Sen selected a site in Surhi *illoqua* at about 5000 ft. called Pangana (the present Pangana Range HQ), where he built a palace and made it the capital of the State. Towards the middle or end of the thirteenth century, in the reign of Madan Sen, the capital of Suket was shifted to a place "Lohara" in the Balh plains, situated between present day Mandi and Sundernagar. Later in the time of Kartar Sen c. AD 1520, the Raja shifted his place of residence to a palace built above the "taramari" forest. Below here he built a town and called it Kartarpur (after himself), now called Purana Nagar, two miles north of the present day Sundernagar. *Interestingly, there exists at present a "Torambari" forest (a DPF) located right above the present Forest Training Institute at Sundernagar!* In AD 1820, during Bikrama Sen's reign, William Moorcroft travelled through the hills on his way to Kullu and Ladakh. He was probably the first European to visit Suket. Moorcroft records "They had never yet beheld a European, and curiosity brought crowd after crowd to look at the *Sahib-log*, until it was dark. Night set in with a thunderstorm, and in the darkness we were disturbed by the singular howling of the hyenas, which approached our encampment, and are said to be common here." In 1839, Suket was visited by Mr Vigne, the traveller, on his way back from the Inner Mountains. He observes that the Balh valley near Mandi "contracts to quiet well-wooded and romantic glen such as may often be seen in England." (Excerpted from "The History of the Panjab Hill States, J. Hutchinson; J. Ph Vogel, Lahore, 1933)

7.1 GENERAL The history of management of Karsog Forest Division can be divided into seven periods:

- i) Period of early management (Pre 1917)
- ii) Regular organization of forests (1917-36)
- iii) J. Singh's Working Plan (1924 - 40); this was not approved
- iv) Sewal's and Corrie's Working Plan (1936-56)
- v) Annual Plan of Operation. (1957-70)
- vi) Pande and Sharma's Working Plan (1971-86)
- vii) P.S. Guleria's Working Plan (1991-2000)

7.2 PERIOD OF EARLY MANAGEMENT (Suket State Forests) It is reported (in the Gazetteer, 1904) that between 1881 and 1891, the population of Suket dropped and that the main reason cited was that a large number of Suketis had migrated to adjoining Mandi State and other areas as forest labour, implying that in that decade there was apparently large scale felling of forests in the region. This is corroborated in R. Macglagan Gorrie's WP for Mandi State Forests (1937 to 1956) wherein he records, "in that year (1880) the Raja granted a 10 year lease to Mr. Thelwall, and this was taken up by a commercial concern called the Mandi Forest Company. Actually considerably more than the allowance was felled, 10,000 trees being removed from the Sutlej forests alone in the last two years of the lease."

The following are the chief forests of the State of Suket (c. 1900 AD)

Table 7.1 Forests of Suket State

No.	Name of Forest	Principal Trees
1	Dhamaun	Kelu, Kail, Rai, Tos
2	Sen	Kelu, Chil
3	Dosha	Kelu, Kail
4	Gharol	Chil
5	Kamana	Chil, Kelu
6	Kamrah	Kelu
7	Reog	Kelu

There are no figures available as to the area, etc. Besides the above there are extensive tracts of waste containing less valuable trees and small patches of deodar, chil, etc. There is no record of the people's rights in forest land. The greater part of the State waste is open to grazing; the people can take dry and fallen trees and shrubs for firewood from all except certain reserved tracts. For building purposes trees are given by the Rajah on payment of a low rate, e.g. 8 to 12 annas for a rai or tos; Rs 1-8-0 to Rs 2 for a kail or chil; and Rs 4 for a deodar. All trees of the more valuable species such as kelu, kail and chil even though standing on privately owned land belong to the State and cannot be cut without permission of the Rajah. The State further lays claim to all specially large trees of the less valuable kinds such as tun etc., which are reserved for State buildings. The State takes half the produce of mango trees in Dehr ilaka.

There is no attempt at regular conservation; the Tahsildars and Kardars of Kothis exercise a general supervision; in Tahsil Karsog there are about 40 rakhas whose pay varies from 13 annas to three rupees per month, plus food, and in Balh there is darogha who receives Re 1-8-0 and food. This staff is untrained and the forests receive no skilled attention.

The waste (land) belongs to the State, but the people are allowed to graze their cattle over it, and there is no scarcity of fodder. In return, the State collects dues; in Karsog, each house pays one ser kachcha of ghi annually; in Balh for each buffalo that calves, the owner pays 4 or 5 sers pakka of ghi. This is known as kar Chompri. On sheep and goats a tax (ginakeri) of Rs 2 to Rs 4 per hundred is levied. Besides the above for each pony, camel or mule that passes through the State, a grazing fee of 2 annas is collected.

The State exports rasaunt (berberry - dried roots of *Berberis* spp.) - still a major NTFP export - dried violets (banafsha), millet, honey, ghi, walnut trees bark (dandaasa) and deodar turpentine (?) / wood oil?

The zaminband shows the area cultivated in Karsog to be 3100 rupees, in Balh to be 2081 khars and in Dehr to be 374 khars, the total cultivated area is 5555 khars (44,450 acres / 17780 ha) distributed among 7633 revenue payers, paying Rs 74495 land revenue annually, (1904).

[From: PUNJAB STATE GAZETTEERS, VOLUME III A: MANDI & SUKET STATES, LAHORE, 1908]

In Suket forests, departmental work was started in 1885 when felling on fairly large scale was carried out, especially in deodar forest along Suket-Mandi border. No attempts were made to introduce any scientific management in State forests. The marking operations were carried out by State Darogas and other State Kaddars to mark the trees up to the limit already agreed upon. The sole criterion for determining yield was the net revenue desired by the Durbar from time to time; subsequently felling was carried out at intervals. Up to 1912 felling were probably done on a reasonable scale. Excessively heavy felling was carried out between 1912 and 1919 when many of the forests were worked over 3 times during a short span of 7 years.

Heavy felling was suspended in 1919 by Commissioner of Jullundur and Mr. H.M. Glover, the then Divisional Forest Officer; Bushahr Division was deputed to report on the condition of forests. He undertook a short tour of some of the important forests and reported that most of the marketable trees had already been felled or marked for felling. He recommended that most of the markings should be cancelled as soon as the suggested felling had been completed and the entire forests given complete rest from 1921 onwards until a simple working plan could be drawn up. Mr. J. Singh, IFS in his preliminary working plan report in 1923 observed that "It can be said without any doubt that as timber producing reserves, the productive capacity of such forests has been greatly spoiled by indiscriminate markings and felling.

7.3 J. SINGH'S WORKING PLAN (1924 to 1953) There were four working circles formed. The area under each Working Circle is given in Table 7.2.

Table 7.2 Working Circles during J. Singh's Working Plan

S.No.	Working Circle	Area (in ha)
1	Deodar Working Circle	7314.8
2	Chil Working Circle	16510
3	Selection Working Circle	6475.6
4	Fuel Working Circle	5978
	Total	36278.4

The then CCF of Punjab did not accept the working plan and in his letter of June, 1926 directed the state that "Pending the introduction of the Working Plan, the demarcation of the forest should be proceeded, but felling for export should not be permitted". Mr. A.D. Blacheck, CCF informed the Agent to the Governor General at Lahore that the plan was unsuitable, for the needs of the forests and declined to accept any responsibility for any untoward results which might follow from the adoption by the state of the present working plan. After protracted correspondence, the working plan was received by the Darbar during 1927 unsanctioned. However, the fellings continued in utter dis-regard of the advice of the CCF which was seriously viewed by the Punjab Government. At the instance of Punjab Government of India sent Mr. Davis, Instructor F.R.I. Dehra Dun in 1931 to respect and report on conditions of Suket forests much against the wishes of the Darbar. In his reports to Inspector General of Forests, Mr. Davis wrote "the majority of working plan prescription were not brought into force and further heavy felling took place between 1925 and 1931. The fellings partly of dead trees killed in 1921 fires, but large part of them was of green trees including most of remaining deodar, kail and chil that was possible to sell. Deodar and kail was marked down to 35 cm or even to 30 cm. diameter and in some cases even lower. The trees were removed quite regardless of silvicultural requirements and future regeneration of the forests, the object of fellings being to obtain as much of revenue as possible". Selective fellings were again carried out in 1933 on an extensive scale over all important deodar and chil forest with the result that these were completely depleted of large size trees. During the period 1920-21 to 1937-38; 67217 trees having a volume of 53.056.70 m³ of deodar, kail, chil and fir and 67217 bamboos were removed.

7.4 SEWAL'S PLAN (1941-1970): On the recommendation of Mr. Davis, Mr. Sewal was appointed to prepare the working plan for the period 1941 to 1970, in which following working circles were formed:

Table 7.3 Working Circles during SEWAL'S Working Plan

S.No.	Working Circle	Area (in ha)
1	Deodar Working Circle	8,069
2	Chil Working Circle	14,616
3	Protection working Circle	4,606
4	Fuel and Fodder Working Circle	6,898
	Total	34,189

However, this working plan was suspended during 1953 as it was decided to amalgamate it with Gorrie's Working Plan.

7.5 EX- MANDI STATE FOREST Not much is known about the history of these forests prior to 1880.AD. In 1917, Mr. H.L. Wright undertook regular forest settlement of Mandi State. Wright also prepared a working plan for a period of 20 years from 1918 to 1937. The working circles formed in Wright's working plan are given in Table 7.4.

Table 7.4 Working Circles during Wright'S Working Plan

S.No.	Working Circle	Area (in ha)
1	Deodar Working Circle	7978.5
2	Thinning Working Circle	1212.9
3	Spruce Working Circle	421.8
4	Chil Working Circle	221.5
5	Fuel Working Circle (None in Suket Division)	
6	Un-Regulated Working Circle	52.2
	Total	9886.9

7.6 GORRIE'S WORKING PLAN (1937) Wright's working plan was revised by Gorrie, one year earlier than the expiry of Wright's Plan. The following Working Circles in Gorrie's WP(1937) was constituted:-

Table 7.5 Working Circles during Gorrie's Working Plan

S.No.	Working Circle	Area (in ha)
1	Concentrated Regeneration Working Circle	4,873.37
2	Selection Working Circle	4,736.80
3	Chil Working Circle	631.8
4	Protection Working Circle	407.8
5	Fuel Working Circle	0
	Total	10,649.77

7.7 PERIOD OF ANNUAL PLAN OF OPERATION From 1957 to 1970 works had been carried out under annual plan of operations. Fellings were carried out on *ad hoc* basis which were approved by the competent authority from time to time. Fellings as detailed below in table 7.6 have been carried out.

7.8 RESULTS OF MANAGEMENT FOR THE PERIOD 1957-1970

Deodar Forests There is nothing on record to show the system which was adopted while carrying out markings for regeneration purposes. Field inspections reveal that single tree advance growth was retained in addition to advance growth occurring in patches. From 1957 to 1970, such markings were carried out over 1,241.2 ha. Regeneration operations were taken in hand till 1970 and 809.3 ha. were brought under regeneration. Advance growth was retained over 130.24 ha., natural regeneration has come up over 234.9 ha bearing all stages of regeneration viz. poles, saplings, seedlings and recruits. Out of 234.89 ha., 29.28 ha. are fully stocked, 171.85 ha. are moderately stocked and 33.76 ha. are poorly stocked. Artificial regeneration operation in concentrated and consistent manner was started only from 1963.

7.9 CHIL FORESTS Sewal and Gorrie did not provide any regeneration felling in chil forests. Seeding markings started from 1965 onwards. There is nothing in record to indicate the marking rules. Inspection of the forests reveals that besides retention of advance growth occurring in patches single tree advance growth was also retained. Till 1970 seeding felling were done over an area of 1,110.4 ha.

Table 7.6 Fellings carried out during Annual Plan of Operations

Deodar Regular Working Circle							
Year	Type of Marking	Area (in Ha)	No. of Comps worked	Year	Type of Marking	Area in Ha	No of Comps worked
1957	Seeding	156.7	2	1965	Thinning / imp	263.4	6
	Thinning / imp	333.1	8	1966	Seeding	76.3	2
1958	Thinning / imp	469	3		Thinning / imp	475.3	11
1959	Thinning / imp	220.3	4	1967	Seeding	62	1
1960	Seeding	84.3	1		Thinning / imp	504.8	7
	Thinning / imp	28.6	1	1968	Seeding	170.2	3
1963	Seeding	70.8	2		Thinning / imp	409.4	7
	Thinning / imp	578.6	7	1969	Seeding	168.4	4
1964	Seeding	14.2	1		Thinning / imp	381.9	11
	Thinning / imp	140.7	3	1970	Seeding	248.1	2
1965	Seeding	208.2	3		Thinning / imp	1,103.60	17
Chil Working Circle							
1957	Thinning / imp	432.1	7	1967	Seeding	233.6	2
1958	Thinning / imp	61.6	1		Thinning / imp	1,092.90	8
1959-1964	Only snow damaged trees were marked all over the Division				Thinning Improvement	1968	
1965	Seeding	200.5	3	1969	Seeding	360.8	4
	Thinning / imp	1,160.20	16		Thinning / imp	1,378.90	16
1966	Seeding	122.3	1	1970	Seeding	122.7	2
	Thinning / imp	517.7	7		Thinning / imp	233.7	16

7.9.1 Yield: The following table gives the yield of deodar, kail, fir/spruce and chil removed:-

Table 7.7 Removal of Conifers

Year	Deodar (m3)	Kail (m3)	Chil (m3)	Fir/ Spruce (m3)	Total (m3)
1960-61	4347	2520	334	1508	8709
1961-62	5615	4259	83005	1448	94327
1962-63	2545	1283	149	447	4424
1963-64	4716	2451	152	4107	11426
1964-65	7127	4098	306	1369	12900
1965-66	12022	3898	398	4083	20401
1966-67	19337	7096	19220	7664	53317
1967-68	95	11052	4935	12168	28250
1968-69	7580	14616	22014	6616	50826
1969-70	12826	17140	38464	15178	83608
1970-71	4193	30459	11425	9669	55746

The total growing stock of coniferous species in the forests allotted to Regular and Chil Working Circle during 1966-67 when enumerations were completed comes to 26.81 lac m3. Table 7.8 gives total growing stock of all the species total removal and its percentage of the growing stock removed:

Table 7.8 Growing Stock and Removals from 1966-70

Year	Total growing stock m3	Yield removed	Percent of the growing stock
1966-67	26,81,000	53,867	2.00%
1967-68		37,556	1.00%
1968-69		50,826	1.80%
1969-70		83,607	3.10%
1970-71		55,745	2.00%
Total		2,81,600	

Average for the period 1966-67 to 1970-71 comes to 2.1% of the growing stock which is on the higher side.

7.10 PANDEY & SHARMA'S WORKING PLAN (1971-1986): Pande & Sharma revised the working plan and the prescription of draft Working Plan were however followed from 1971 onwards with modifications as were incorporated from time to time till the draft was approved. Following working circles were constituted.

Table 7.9 Working Circles during Pandey & Sharma's Working Plan

S.No.	Name of Working Circle	Area in ha.		Total
		Karsog Division	Suket Division	
1.	Regular Working circle	11,056.2	5,605.1	16,661.3
2.	Chil Working Circle	14,897.3	1,309.2	16,206.5
3.	Fuel Working Circle	871.1	1,311.8	2,182.9
4.	Protection working Circle	2,470.3	4,818.6	7,288.9
5.	Protection working Circle	1,930.1	2,929.7	4,859.8
6.	Grazing (overlapping)	-	-	-
Total		31,225.00	15,974.4	47,199.4

7.10.1 REGULAR WORKING CIRCLE:

(a) **GENERAL:** Area where deodar, kail either pure or intimately mixed and found fit for being worked under shelter wood system was included in this working circle. Some spruce forests on

easier slopes and mixed with deodar/kail have also been allotted to this working Circle. Rotten Kail under Selection Working Circle and spruce forests of protection working circle was modified form of concentrated Regeneration Working Circle of Gorrie's Plan. A total enumeration of all important species was carried out up to 10cm dia in all DPFs and important UPFs. Rotation of 120 years with 4.P.B's and 30 years regeneration period was envisaged. Allotments were made to P.B.I & II and rest of the forests were allotted to PBU. A felling cycle of 15 years was prescribed. Following areas were allotted to P.B.I.

- i) All P.B.I. forests of Gorrie's Plan where regeneration was deficient.
- ii) Forests included in adhoc plan of operations since April, areas proposed to be replaced with deodar.
- iii) Mature/maturing areas & predominantly diseased kail areas proposed to be replaced with deodar.
- iv) Areas around orchards to meet the requirements of packing cases.

(b) Area allotment: The area under different P.B.s under present Karsog Working Plan was is given below:

<u>P.B.I</u>	<u>P.B.II</u>	<u>P.B.U.</u>	<u>Total (ha.)</u>
1315.4	1998.6	3689.2	7003.2

Definite felling programme for main fellings in P.B.I. areas was not framed. It was left to the discretion of DFO to select any P.B.I area out of the enlisted areas & carry out markings after obtaining approval from C.F. Felling programme for P.B.U. areas was however laid down for carrying out thinning-cum-improvement fellings.

The yield has been calculated on the basis of i) Von Mantel formula (ii) Increment method & (iii) Hufnsgal's formula. The total growing stock inclusive of UPFs has been taken into account while calculating yield. The yield was to be regulated for a 5 year period when it was to check within 10% of one year's prescribed yield. Total deviation in respect of one single year could not be more than 20% of the prescribed annual yield. Yield for all the major species was prescribed.

1. Entire growing stock inclusive of UPFs was taken into account while calculating yield even though UPFs were never included for working. The distribution of yield into P.B.I and P.B.U appears unrealistic. Sufficient P.B.U. areas were prescribed & actually felled during the period. The yield apportioned was only 15% of the total prescribed yield.
2. Allotment of immature stands was made to P.B.I.

(c) Results of working P.B.I.: An area of 793.4 ha. Of the 1315.4 ha. allotted to P.B.I. was prescribed for felling. The seeding felling in some of the forests have been too conservative. This resulted in patchy regeneration. Corrective markings e.g. in case of O.D. 26 Chhohara C.II had to be carried out to help induce regeneration.

1. From the description of compartment history files, it is evident that at one stage there were proposals of keeping selection working circle also. But in the approved working plan there is no selection working circle and the forests which were to be kept in selection working circle have either been kept in Regular working circle or in Protection working circle. Obviously this has resulted in faulty allotment of different P.Bs.

2. While calculating the yield entire growing stock inclusive of U.Fs was taken into account but in allotment only D.P.F.s have been considered and allotment to periodic block/prescription for working in case of U.P.Fs has not been done.

3. Though the forests to be felled in P.B.I during the currency of the plan were listed but their year wise sequence of felling was not given which resulted in felling of unequal area during different years.

4. Considering the Suket and Karsog Forest Division, an area of 3223.7 ha. was prescribed for felling in 15 years only. This means that 20% of the total working circle was prescribed for felling in 15 years while it should have been only 12.5% keeping in view 120 years rotation.

5. The yield in P.B.U fixed arbitrarily was reduced to 25% of P.B.I yield.

6. The volume of C.I and C.2 taken for calculation of yield was rather higher as compared to similar forests elsewhere.

7. Improvement felling cum thinning were prescribed for each year. However, subsequently certain conditions were imposed by C.C.F before the forests were allowed to be thinned. Some of the forests prescribed for Improvement felling did not fulfil the conditions laid down and as such thinning was not done. Only salvage marking and removals to meet the demand of poles for HPSEB were done. The net accumulated result of various factors after 15 years of working has given the following yield position as on 31.3.1986:-

Table 7.10 Devlation (In m³)

P.B.	Deodar	Kail	Chil	Flr/Spruce	Total
P.B.I	(-) 118765.62	(-) 67436.30	(-) 730.36	(-) 8130.50	(-) 268541.80
P.B.II	(+) 18935.80	(+) 20100.98	(+) 410.37	(+) 3621.47	(+) 43068.62
P.B.U	(+) 22776.85	(+) 31663.21	(+) 4854.74	(-) 1258.97	(+) 58035.82
Total	(-) 77052.98	(-) 15652.13	(+) 4534.75	(-) 79268.00	(-) 167438.36

7.10.2 CHIL WORKING CIRCLE

(a) General This working circle coincides almost with Chil Working Circle of Gorrie's & Sewal's WP and includes large areas of chil which were kept in Deodar Working Circle of Sewal's Plan. An area of 1309.2 ha. was allotted to this WC. Rotation was kept at 90 years with regeneration period of 30 years and three periodic blocks. Definite allotment of areas to all the three P.B.s was done. Total enumeration in 10cm.dia classes was done down to 10cm. Area in P.B.I and P.B.II was about 25% in each of the total WC and remaining about 50% was P.B.U forests. Yield in this circle was also calculated on the basis of Von Mantal's formula, Increment method and by Hufsnagal's formula. Thinning-cum-improvement felling was prescribed in P.B.I and P.B.U prescribed was as follows (m3):-

Table 7.11 Thinning-cum-Improvement felling In Chil Working Circle

Species	P.B.I	P.B.U	Total
Chil	5600	840	6440
Kail	740	110	850
Deodar	240	35	275

RESULT OF WORKING OF CHIL WORKING CIRCLE After the creation of Karsog Forest Division in 1978, majority of the forests of this working circle have been transferred to Karsog Forest Division. All the forests in this working circle have been worked and regeneration is satisfactory and the yield position is as under (m3).

Table 7.12 Devlation (In m³)

P.B.	Deodar	Kail	Chil	Spruce	Total
P.B.I	(-) 2312.25	(-) 3445.76	(-) 33907.75	(+) 82.92	(-) 39582.84
P.B.II	(+) 1244.12	(+) 2141.00	(+) 8145.81	(+) 3.30	(+) 11534.23
P.B.U	(+) 3683.46	(+) 2485.02	(+) 19917.17	(+) 50.07	(+) 26135.7
Total	(+) 2615.33	(+) 1180.26	(-) 5844.77	(+) 136.29	(-) 1912.89

7.10.3 FUEL WORKING CIRCLE

(a) **GENERAL** This working circle was corresponding to fire wood felling series of Fuel and Fodder working Circle of Sewal's working plan. Area allotted was 1311.8 ha. These forests were worked under coppice with standard system and a rotation of 30 years for coppice and 90 years for standard was prescribed. Felling cycle of 30 years was adopted.

(b) **RESULT OF FUEL WORKING CIRCLE** Most of these areas which were allotted to this working circle were situated very near the habitation and therefore had lot of biotic interference. As a result of this, the forests felled during the currency of plan and also before that have not been able to coppice in the desired manner.

7.10.4 PROTECTION WORKING CIRCLE

(a) **GENERAL** This working circle includes demarcated protected forests having precipitous terrain, ban areas requiring rest for recuperation and un-demarcated protected forests bearing open crop of broad leaved species. An area of 7288.9 ha. was allotted to this working circle and complete rest was prescribed. Out of this an area of 2470.3 ha. falls in Karsog Division. In addition to this, forests were earmarked for carrying out artificial regeneration.

(b) **RESULT OF WORKING OF PROTECTION WORKING CIRCLE:** As a result of prescription of working plan, some good plantations have been established in some of these forests. With the creation of Karsog and Suket Forest Divisions, there is very little area left in this division for plantation.

7.10.5 PLANTATION WORKING CIRCLE

(a) **GENERAL** This working circle comprised the areas fit for raising plantation of valuable and economically more important species. The area allotted to this working circle was 4859.8 ha. out of which 1931 ha. falls in Karsog Division. In addition to this UPFs and plantation areas were also allotted to this working circle. Year wise plantation program for 15 years was given and plantation series formed. Indication of choice of species was also made.

(b) **RESULT OF WORKING PLANTATION WORKING CIRCLE** As a result of prescription of this working circle, plantations have been raised over a large tract as prescribed in the working plan. However, the fate of most plantations in terms of survival, as sample checked in April 2011, presents a pretty dismal picture.

7.11 CRITICAL APPRAISAL OF P.S. GULERIA'S WORKING PLAN (1986-2000):

7.11.1 REGULAR WORKING CIRCLE

7.11.1.1 GENERAL CONSTITUTION, CHARACTER AND VALUATION OF THE CROP All DPFs allotted to Pande and Sharma's working plan and also some newly created DPFs were included in this working circle. These forests are situated on easy to moderate slopes bearing mixed or pure Deodar, Kail, Spruce and Fir forests. The total area of this working circle was 7086.2 ha.

7.11.1.2 The forests on the whole have all age classes but there is an overall preponderance of middle aged trees. The forests are fairly well stocked except on southern-slopes or forests adjoining habitations. The whole area of this working circle was stock mapped on 4" = 1 mile scale. General site quality was II/III. The density was estimated by ocular method. The average density varies from 0.3 to 0.7 average being 0.5. Total enumeration of all the conifer species and some important broad leaved species was carried-out in 10 cm dia. classes.

7.11.1.3 METHOD OF TREATMENT The forests were to be managed under Punjab Shelter wood System with selection marking on broken ground and also retention of compact groups of advance growth up to 30 cm dbh and not less than 0.25 ha. as part of future crop. Natural regeneration supplemented by artificial regeneration where ever necessary was to be relied upon. The rotation of 120 years in conformity with the scheme of Rotational Closure was adopted. The regeneration period of 30 years was fixed and four periodic blocks were constituted with a specific allotment.

7.11.1.4 YIELD: Yield was of two types viz:

1. Main yield: - All felling from PB I and felling of trees IIA and above from PB IV constituted main yield.

2. Intermediate yield: - It was from the cleaning/thinning from PB III.

7.11.1.5 CALCULATION OF YIELD The yields were calculated on the basis of i) Von Mantel's Formula ii) Blandford and Simmon's Formula and iii) Hufsnagel's Formula. Entire growing stock was taken into account while calculating the yield. The yield prescribed in different periodic blocks of different species was as under:-

Table 7.13 Removal of Conifers

Species	PB I	PB II	PB IV	Total
Deodar	6480	1500	850	8830
Kail	3340	950	600	4890
Fir/Spruce	1190	350	400	1940
Chil	-	100	30	130
Total	11010	2900	1880	15790

7.11.1.6 STATUS OF REGENERATION Due to the ban imposed on green felling in H.P., no forests were worked during the plan period except during 1993-94. The regeneration operations were therefore, limited to the PB I area of Pande and Sharma's plan only.

7.11.1.7 SOWING AND PLANTING PB I areas after seeding felling, subsidiary felling and debris burning were to be taken up for planting immediately.

7.11.1.8 CULTURAL OPERATIONS Cultural operations such as slash disposal, weeding, cleaning and bush cutting were suggested after main felling.

7.11.1.9 CONTROL BURNING Control burning in Regular Working Circle is not a practice. The fire lines are to be kept clear of the inflammable material.

7.11.1.10 CRITICAL APPRAISAL OF WORKING

1. The yield position on 31.3.01 is in deficit overall, however, it is on plus side in PB II and PB III which is on account of salvage removals and marking of trees in TD. The deficit position is due to the ban on felling of green trees.

2. As no felling was carried-out, proper openings that would have been created as a consequence of seeding felling for regeneration, were lacking. Therefore, no regeneration operations were undertaken.

3. There are large number of regenerated Deodar areas in PB I and PB IV in the working circle, which require immediate removal of the over wood and corrective marking. However, this silviculture requirement remained wanting, for allowing regeneration to set in over the entire areas in such forests.

4. The yield prescribed from the PB III was 2900 m³. In addition to the requirement of right holders for timber, the supply of electricity poles were also to be met from PB III areas.

The yield position as on 31-3-01 (deviation in m³) indicating the results of last 15 years working is given as Table 7.14:

Table 7.14 Deviation (in m³)

PB	Deodar	Kail	Chil	Fir/spruce	B.L.	Total	Position as on 31.3.11
PB I	-72043.775	-44060.824	+91.580	-16300.171	+2039.060	-130274.110	-234956.14
PB II	+11837.243	+8831.632	+469.900	+4751.517	+310.050	+26200.342	+33798.58
PB III	+165.281	+4263.331	+1747.369	+7229.980	+175.410	+13580.371	-3781.16
PB IV	-10853.229	-7634.710	-370.319	-5884.937	+42.350	-24700.845	-42134.90
Total	-70984.480	-38600.571	+1938.530	-10203.611	+2566.870	-115194.242	-247013.62

7.11.2 CHIL WORKING CIRCLE

7.11.2.1 GENERAL CONSTITUTION, CHARACTER AND VALUATION OF THE CROP All the pure and nearly pure chil forests of this Division were allotted to this Working Circle. The total area of this working circle was 12340.92 ha. The forests on the whole are under stocked, vastly variable in density and normal distribution of age class is lacking except PB IV and PB III areas. Young to middle aged trees predominate and mature trees are rather scattered in them. The whole area of this working circle was stock mapped on 4"=1 mile scale. General site quality was III. The density varies

from 0.2 to 0.6. Total enumeration of chil and some important B/L species was carried-out in 10 cm dia classes down to 20 cm dbh for whole working circle.

7.11.2.2 METHOD OF TREATMENT The forests were to be managed under Punjab Shelter wood System with the retention of compact groups of well grown poles up to 30 cm dbh not less than 0.2 ha. in extent as advance growth. Natural regeneration supplemented by artificial regeneration wherever necessary, was to be relied upon. The rotation of 100 years was adopted. Four periodic blocks were constituted with specific allotment. The regeneration period of 25 years was therefore adopted.

7.11.2.3 CALCULATION OF YIELD Yield in this circle was also calculated on the basis of von Mantel's, Increment method, and by Hufsnagal's formula. Thinning cum improvement felling was prescribed in PB III. The yield in PB I, PB III and PB IV was prescribed as follows:

Table 7.15 Removal of Conifers from Chil WC

Species	PB I	PB III	PB IV	Total
Deodar	300	-	130	430
Kail	300	-	230	530
Chil	3500	400	2500	6400

7.11.2.4: Area of 1116.32 ha was to be felled under regeneration fellings. On account of ban on green fellings, which was relaxed only for one year, 61.30 ha? was felled during 1993-94, the balance area remained unworked. Because of openings created as a result of marking for TD and salvage removals, the regeneration has come up very well and is satisfactory. As regards PB IV 2571.27 has been to be felled, against which 206.19 was actually felled due to the reason stated above. These removals were done during 1993-94.

7.11.2.5 SOWING AND PLANTING 322.20 ha planting was prescribed but 901.80 ha. was planted.

7.10.2.6 STATUS OF REGENERATION The regeneration status in the forests which were worked during plan period is satisfactory.

7.11.2.7 CULTURAL OPERATIONS Subsidiary silvicultural operations were suggested in PB I areas where 40 ha. was gone over under this operation. Cleaning and pruning was done over the same area as well. Cultural operations were suggested in PB IV where 51 ha. was tackled under this operation.

7.11.2.8 CONTROL BURNING The control burning was followed and fire lines maintained as per availability of funds as per recommendations.

7.11.2.9 CRITICAL APPRAISAL OF WORKING

1. The yield position as it stood on 31.3.01 is deficit in PB I and PB IV and is on plus side in PB II and PB III, on account of salvage marking and removal in TD. The deficit position is due to the ban on felling of green trees. However, there is overall deficit of 46115.879 m³ in this working circle.
2. No green fellings in PB I, PB III, PB IV were carried-out during the plan period except during 1993-94 when the ban was relaxed only for one year. PB I area felled was OD 43 Kaneeri C-1 =61.30 ha. In PB IV the areas felled were as below: 1. OD 42 Charkufari C-II - 58.12 ha; 2. OD 232 Sarandha C-II-31.45 ha; 3. OD 82 Devi Kot C-I - 91.73 ha; 4. OD 180 Tikkaridhar C- Ia - 24.89 ha.
3. There are large number of regenerated Chil areas in PB I and PB IV in the working circle, which require immediate removal of the over wood. However, this silviculture requirement remained wanting, for allowing regeneration to set in these patches.
4. The Chil forests prescribed under PB III should be left to meet the demand of right holders. No thinning cum improvement felling programme therefore needs to be prescribed for PB III areas. These forests should be left to meet the demands of right holders for timber.
5. Resin tapping by rill method should be adopted as per recommendation of Resin Advisory Committee, where tappable diameter has been suggested to be kept at 40 cm and above and also dilution of acid concentration has been increased. The deviation as on 31.3.01 is as under:-

Table 7.16 Deviation (in m³)

PB	Deodar	Kail	Chil	Fir/spruce	B.L.	Total	Position as on 31.3.11
PB I	-2177.394	-566.290	-39272.934	+5.976	+75.848	-41936.802	-78571.05
PB II	+1519.325	+834.700	+5293.334	+535.070	+42.350	+8224.779	+12746.73
PB III	+3416.224	+4317.980	+9599.862	+70.810	+163.180	+17578.056	+20863.77
PB IV	-1414.418	-1238.300	-27333.500	+0.906	+3.400	-29981.912	-55010.25
Total	+1353.737	+3348.090	-51713.240	+612.762	+282.770	-46115.879	-99971.70

7.11.3 PLANTATION WORKING CIRCLE

7.11.3.1 GENERAL CONSTITUTION This working circle comprises young plantations, blanks and areas which are under stocked with miscellaneous scrub species. All new DPFs on easier slopes and devoid of vegetation have been put in this working circle. The total area of this working circle was 7840.49 ha. Stock maps have been prepared on 4"-1 mile scale. Site quality of areas was not ascertained. No enumerations were carried-out.

7.11.3.2 METHOD OF TREATMENT Culturable blanks were to be planted with suitable species. In the vicinity of habitation, species capable of yielding fuel, fodder and fruit trees were suggested. The year-wise, range wise plantation raised during the plan under revision is tabulated as under:

Table 7.17 Plantations Raised from 1985-1999

Year	Pangna	Karsag	Seri	Magroo	Total
1985-86	249.5	246	213	237	945
1986-87	340	330.5	310	158.5	1139
1987-88	382	460	320	373	1535
1988-89	272	168	217	132	789
1989-90	354.5	95	260	45	754.5
1990-91	195	66	135	21.5	417
1991-92	304	298	281	216	1099
1992-93 to 1998-99: No plantations carried out or not shown in record.					
1999-00	146	170	108	116	540

7.11.3.3 CRITICAL APPRAISAL:

1. Most of the area is Lantana infested in lower parts. The prescriptions for tackling such areas have not been followed due to financial crunch resulting the spread of these weeds and poor survival of plantations in such forests.
2. Areas which have established and are required to be transferred to respective working circles.
3. The plantation programme suggested in the plan was not followed strictly due to the administrative and financial problems. However, some good plantations of Chil were raised over large tracts as prescribed in the working plan. 2547.64 Ha. was prescribed for planting, against which 2538.10 ha. was planted up. Tending operations over 777.45 ha. were prescribed, against which only 18 ha. was tackled.

The yield position as on 31-3-01 is as below:

Table 7.18 Yield from Plantation Working Circle

Species	Yield (in m ³)
Deodar	+387.638
Kail	+1092.410
Fir/spruce	+578.700
Chil	+252.613
B.L.	+2786.592
Total	+5097.953

The deviation as on 31.3.11 is +6493.96 m³

7.11.4 PROTECTION WORKING CIRCLE

7.11.4.1 GENERAL CONSTITUTION, CHARACTER AND VALUATION OF THE CROP The working circle

included DPFs having precipitous terrain and Ban areas requiring rest. An area of 4965.61 ha. was allotted to this working circle. The entire area has been stock mapped on 4"-1 mile (1:25840) scale.

7.11.4.3 CRITICAL APPRAISAL:

1. Deviation statement for the years 2000-01 shows that total excess removals from this W.C. is 2889.327 m³ although no yield was prescribed from the W.C. This removal is only on account of salvage removals and to meet legitimate requirements of local right holders.
2. The planting programme laid down in the plan was not strictly followed. However, against a prescription of 1855.99 ha., 1176.85 ha. was planted.
3. No tending operations were attended to in case of existing plantations. Nothing was prescribed to assess the survival percentage of plantations carried-out during the plan period.
4. It would have been better, if blanks of 5 ha. to 10 ha. and more wherever possible could have been carved out as sub-compartments.
5. The position of deviation as on 31.3.01 is as under: -

Table 7.19 Deviation (in m³)

Deodar	+394.306
Kail	+1083.310
Fir/spruce	+263.642
Chil	+986.112
B.L.	+161.957
Total	+2889.327

The deviation as on 31.3.11 is +4273.02 m³

Survival in Last 10 years plantation in Karsog Forest Division (1999-2000 to 2007-08)

Last 10 years plantations of Karsog Forest Division were sample checked. One Block where maximum plantation (in area) has been done, was selected in each of the four ranges. Three, five, seven and nine years old plantations were selected from 3 blocks namely Tattapani, Bagsad and Seri. The plantations in Magroo Range were not sample checked.

In Tattapani Block, about 60% of the total plantations were checked. The survival percentage ranges from 10-48%. Damage caused by fire is clearly seen in some plantations where the fire has reduced the survival % even down to 9.36% in 2 ha plantaion in ND-97 Seri Serp in Tattapani. Further the heavy infestation of Lantana and *Dodonea viscosa* add to the problem. Most of the plantations were away from habitation so there was less incidence of grazing except for a few areas which were along the road. *Shisham* and *Daru* have shown better survival in some plantations. It was noticed that where *Punica granatum* was under shade, it has attained lesser height than in open areas.

In most of the plantations of Bagsad block, the prime species chosen for plantation was Deodar irrespective of zone and aspect. The survival % in Deodar plantations ranges from 17-19% only with exceptionally good 74% in 1 ha area planted in 2007-08 while exceptionally bad (6%) in 5 ha area also planted in 2007-08. Better survival was attributed to protection by local people and hence no grazing pressure. Extent of damage caused by fire can be gauged from the fact that a single incidence of fire has completely damaged 13 ha plantation of 2001-02 in Nagetha in Mahunag beat where none of the 9000 Chil plants were found surviving. However, one plantation of Daru showed survival of 26.4% in the same Range. (Details as per annexure VI)

In Seri block of Seri Range a total of 12 plantations were carried out during 2001-02, 2003-04, 2005-07 and 2007-08. Out of these only one randomly selected was checked. It was done in the year 2001-02 on an area of 3ha with Deodar, Ban, Daru, Chil, Shisham, Kachnar etc. The survival % was 15.54.

The average survival of 9 year old plantation was 14.31%, of 7 year old plantation was 24.14%, of 5 year old plantation was 32.83% and of 3 year old was 30.89%.

7.11.5 GRAZING (OVERLAPPING) WORKING CIRCLE

7.11.5.1 GENERAL CONSTITUTION AND CHARACTER This working circle overlaps all other working circles. In addition to this, it also includes all the NDPFs, charagah darakhtan and bila darakhtan.

7.11.5.2 METHOD OF TREATMENT: Due to continuous heavy incidence of grazing, the grazing grounds/pastures are deteriorating. The rotational closure was not suggested. The measures suggested for improvement of these pastures include removal of weeds, application of fertilizer, rotational grazing and introduction of enforcement of existing grazing rules.

7.11.5.3 MISC. REGULATIONS: For controlling the over grazing and for preservation of these pastures, misc. regulations were suggested which included restriction on grazing rights, introductions of better breed of sheep, reduction of animals, strict enforcement of existing grazing rules.

7.11.5.4 CRITICAL APPRAISAL:

The method of treatment and regulatory measures prescribed were necessary and sufficient. The measures to treat these pastures in accordance with the prescribed method and sequence have not been taken up during the plan period primarily due to financial reasons. Also the regulatory measures such as improvement of cattle stock were not backed by a sound cattle improvement plan, by the Forest Department for want of such provision in the budget. The systematic introduction of legumes and grasses of better variety have not been attempted, leaving these grasslands impoverished. Short rotation closures to improve the production of biomass were also not attempted. In a nutshell these grasslands were not given due attention during the working plan mainly due to administrative, financial and technical constraints.

7.11.6 FUEL WORKING CIRCLE

7.11.6.1 GENERAL CONSTITUTION: This working circle comprised Oak and Scrub forests except areas transferred to Shikari Devi Wild Life sanctuary. Few areas were from other forests and some NDPFs were newly included in the working circle.

The position of deviation as on 31.3.01 is as under: -

Table 7.20 Deviation (In m³)

Deodar	+144.406
Kail	+548.900
Fir/spruce	+20.087
Chil	+164.510
B.L.	+119.324
Total	+997.227

The deviation as on 31.3.11 is +1611.19 m³

7.11.6.2 CHARACTER OF VEGETATION The forests have Ban with an admixture of Rhododendron arboreum, Lyonia, Myrica esculenta, Q.glauca. Chil has come up in badly lopped Ban portion. The objectives of management have been to cater to firewood and charcoal needs of Karsog township and to protect the hill sides from erosion and environmental degradation. Middle aged and over mature Ban trees are in predominance while younger age classes are deficient. Area of the working circle is 983.38 ha. The area of working circle was stock mapped on 1:15000 scale. The stocking density on the whole is poor due to the reason of heavy lopping. Important species like, Deo, Kail, Chil, Fir/spruce were enumerated. Silvicultural system adopted was coppice with standard. Proportion of important B.L. species like, Oak, Walnut, Maple, Bird Cherry, Carpinus were proposed to be increased by way of plantation. Rotation of 30 years for coppice and 90 years for standards was adopted. Felling cycle of 30 years corresponding to coppice age was kept. Yield of fuel wood 2000 qtls., charcoal 600 qtls. was estimated. Method of executing fellings was laid down. Method of subsidiary silvicultural operations was indicated. Provision for regulating grazing and grass cutting was indicated. Closure for 15 years after felling was highlighted. Stress was laid on restricting lopping of Ban and also measures against fire hazard. Taking Ban for agricultural implements by the right holders was also indicated in a manner that the forests are not adversely depleted of the growing stock.

7.11.6.3 CRITICAL APPRAISAL Against a planting programme for 815 ha. laid down, 212.90 ha. was planted. The weeding, cleaning and other cultural operations were not carried-out for want of funds. The control over lopping of Ban trees as envisaged was also not enforced, resulting in depletion of growing stock. On account of heavy pressure of grazing and non-effective regulation on grazing, the

younger age classes of valuable species have not been found to be encouraging against a calculated annual prescription of 67.55 ha.

7.11.7 SOCIAL FORESTRY (OVERLAPPING) WORKING CIRCLE

The working circle was constituted with participatory approach in mind and included DPFs, UFs, Charagah darakhtan, Charagah bila darakhtan, Roads, Nallahs, Kuhals, Private lands and Ghasanies etc. The objective was to raise species yielding fuel, fodder, and small timber and fruit plants for meeting the day-to-day needs of local inhabitants and also to clothe the degrading areas. The working circle was mooted under National Forestry Project during 1985-86, which was for a period of 5 years. There were components like, Van Lagao Rozi Kamao, Community plantations, farm Forestry, Private land planting, Tree tenure for poor and landless, Departmental planting, Fuel saving devices etc. The choice of species was listed out. 20 ha during 1990-91 and 418 ha during 1991-92. was tackled under Van Lagao Rozi Kamao component. Up to 1990-91, the achievement made was as shown in Table 7.22.

Table 7.21 Plantation in Social Forestry (Overlapping) Working Circle

i)	Raising of seedling for distribution	66,85,000 plants.
ii)	Private waste land planting	116.5 ha.
iii)	Tree tenure for poor and landless	52,900 plants (2 ha.)
iv)	Community wood lot (self help)	31 ha.
v)	---do--- (rainfed)	2134 ha.
vi)	Departmental planting	205.5 ha.
vii)	Silvi pastoral	37 ha.

With the above particulars, it would be seen that the working circle had been able to fulfill the objectives to a large extent.

7.11.8 WILDLIFE (OVERLAPPING) WORKING CIRCLE

The working circle was constituted for highlighting necessity of wild life conservation and data collection. It overlaps all the working circle of the working plan. The wild life of upper and lower belts have been listed, problems connected with wild life management have been listed, statements of forests transferred to Wild Life Sanctuary have been given, acts prohibited with relation to shooting, hunting of wild life have been enumerated. The prevention, control and extension measures to be taken by DFO (T) and Chief Wild Life Warden have been listed. Reference of study measures and data collection in respect of musk deer and panther, other animals and birds have been highlighted. Scope for scientific study and research has been indicated.

Since the prescriptions of the working circle are by and large of recommendatory nature and have not been quantitatively laid down, it will not be possible to critically analyze the effect of constitution of the working circle in conserving and increasing the wild life. However, by personal knowledge and informal interaction with local population, it can be confidently recorded that there is marked increase in the wild life population, which actually is attributed to stiff enforcement of poaching, hunting and snaring of wild animals and bird's rules. The ban on hunting imposed by the Govt. is having a very effective result on the protection of wild life.

7.12 STATEMENT SHOWING REVENUE & EXPENDITURE (Rs) The royalty of trees sold to Forest Corporation and resin blazes and related payments are adjusted at HOD level and are not reflected here. The revenue directly deposited in the account of DFO Karsog has been depicted in Table 7.23.

Table 7.22 Statement Showing Revenue and Expenditure

YEAR	REVENUE (₹)	EXPENDITURE (₹)	VARIATION (₹)
1991-92	6,42,032	1,32,97,061	-1,26,55,029
1992-93	1,56,729	70,33,862	-68,77,133
1993-94	6,09,341	1,33,47,148	-1,27,57,807
1994-95	10,77,775	1,62,78,719	-1,52,00,944
1995-96	13,54,990	1,71,55,602	-1,58,00,612
1996-97	7,85,980	2,04,20,695	-1,96,34,715

1997-98	15,23,946	1,99,93,346	-1,84,70,400
1998-99	7,16,388	2,52,13,960	-2,44,97,572
1999-00	5,84,674	2,63,38,620	-2,57,53,946
2000-01	12,17,445	2,08,55,345	-1,96,17,900
2001-02	12,70,431	1,76,37,000	-1,63,66,569
2002-03	11,55,651	1,74,90,914	-1,63,35,263
2003-04	2,08,24,007	1,95,42,460	+12,81,547
2004-05	20,00,720	2,66,53,310	-2,46,52,590
2005-06	67,29,154	4,70,00,520	-4,02,71,366
2006-07	27,21,654	2,85,86,204	-2,58,64,550

(Source: Office Recrd OFO Kardog)

CHAPTER VIII

STATISTICS OF GROWTH AND YIELD

8.1 GENERAL Following records were consulted to arrive at the statistics of growth and yield:-

- i) The yield and statistics of growth for Deodar & Chil by Howard.
- ii) Volume and out turn tables for Blue-pine by H.G. Champion, I.D. Mahendru and P.N.Suri.
- iii) Volume tables and diameter growth curve for spruce by Seth and Luhani.

8.2 VOLUME TABLES It was not considered necessary to collect local statistical information *de-novo* since such data was collected during the preparation of working plan under revision. As such the volume table for coniferous species as tabulated in expiring working plan of Pande & Sharma is good enough, are reproduced and will be adopted in this working plan.

Table 8.1 Local Volume Table

Diameter classes (In cm)	Volume of stem timber (m ³)							
	Deodar		Kail		Chil		Silver Fir	
	Vol.	Age (Yrs.)	Vol.	Age (Yrs.)	Vol.	Age (Yrs.)	Vol.	Age (Yrs.)
10 to 20	0.056	31	0.080	24	0.500	23	0.086	43
20-30	0.196	51	0.210	37	0.110	39	0.283	66
30-40	0.756	65	0.590	49	0.280	53	0.906	87
40-50	1.568	83	1.230	62	0.730	67	1.652	109
50-60	2.632	101	2.550	75	1.500	82	2.772	132
60-70	3.920	120	3.780	92	2.630	97	4.046	155
70-80	5.600	140	5.370	111	3.950	113	5.544	179
80-90	7.140	156	7.450	130	5.460	127	7.168	201
90-100	7.140	174	7.450	155	5.460	143	9.128	223
100 & over	7.140	-	7.450	-	5.460	-	9.128	-

8.3 DIAMETER GROWTH To determine the rate of diameter growth, exercises were conducted during the course of field works, for carrying out analysis by selecting random stumps of each coniferous species and the figures in each case were compared with stumps analysis figures as given in Pande and H.C.Sharma's working plan. It has been concluded and established that the data of the expiring working plan for the stump analysis is sufficiently accurate. Therefore, the same has been adopted for this working plan.

8.3.1 The rate of growth of the 5 coniferous species as tabulated by Pande and H.C.Sharma's working plan is also reproduced below. This table will be made applicable to this working plan.

Table 8.2 Number of Years to Reach DBH(O.B.) for Conifers

DBH(O.B.) cm	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95
Deodar	23	31	40	51	58	65	75	83	93	101	111	120	129	140	147	156	165	174
Kail	18	24	31	37	43	49	55	62	68	75	81	92	101	111	122	130	145	155
Chil	15	23	30	39	45	53	60	67	75	82	89	97	105	113	120	127	135	143
Spruce	26	36	45	55	64	73	82	92	101	111	109	130	138	150	157	167	177	186
Silver Fir	32	43	55	66	77	87	100	109	123	132	145	155	167	179	190	201	213	223

The crops of Karsog Forest Division are open, the rate of diameter growth is much higher than corresponding figures of even aged regular crops dealt with in Multiple yield tables.

8.3.2 RECRUITMENT PERIOD From the rate of growth summarized in table 8.3.1, the recruitment period from the lower class to the higher diameter class for different species works out as under:

Table 8.3 Recruitment Period for Conifers

Spp.	V to IV	IV to III	III to II A	II A to II B	II B to IA	IA to IB
Deodar	20	14	18	18	19	20
Kail	13	12	13	13	17	19

Chil	16	14	14	15	15	16
Spruce	19	18	19	19	19	20
Fir/Spruce	23	21	22	23	23	24

8.3.3 MORTALITY RATE(VALUE OF Z) It is not possible to work out the value of 'z' for approach class in case of Kail with the help of yield table as the number of trees per Acre for quality II crops with an average diameter of 65 Cms is not available in the yield tables of Kail. The value of 'z' for Kail and Deodar have, therefore, been derived from the Multiple yield tables of Deodar which are given below:

Table 8.4 'z' Value for Various Thinnings

Diameter classes	Percentage mortality for different grade of thinnings			Average value of 'z'
	D	D/E	E	
From 40-50 cm to 50-60cm	27	25	24	25
From 50-60cm to 60-70 cm	27	26	25	26

But in Karsog Forest Division, the crops are irregular and under stocked, the mortality rate will therefore, be lower than that worked out above from the yield tables. Therefore, it will be quite safe to adopt the above figures in the working plan. For adoption in this working plan, the value of 'z' from IIA to IIB and from IIB to IA diameter class is taken to be 25.

8.4 QUALITY CLASS ASSESSMENT The quality class of all the coniferous species was assessed by height and diameter (converted to age) measurements of two trees in each compartment sub-compartment and by comparing the same with those of standard quality classes as given in Multiple yield table for the respective species. The quality class thus determined has been recorded in the compartment history files.

8.5 DENSITY Density of all the compartments/sub- compartments which have been enumerated has been calculated by basal area method. As regards other un-enumerated compartments, it has been assessed by ocular estimates and is recorded in the respective compartment history files.

8.6 ENUMERATIONS Complete enumerations of all coniferous and broad leaved species has been carried out in 10 cms diameter classes down to 10 cm diameter except for the forests of Protection Working Circle and Plantation Working Circle.

8.7 STOCK MAPS All the protected forests (both demarcated & un-demarcated) have been stock mapped on 1:15000 scale. The stock maps have been filed in the compartment history files. The minimum area to be shown in the map has been taken.

8.8 VOLUME OF OAK For ascertaining the volume of each diameter class of tree of Ban oak during the preparation of working plan of Suket Forest Division, which is adjoining area of tract is adopted. The weight of trees of each diameter class & extracted fuel wood, charcoal are tabulated below as Table 8.5.

Table 8.5 Volume and Weight of Ban Oak in Various Diameter Classes

Diameter class	Volume (m ³)	Weight of Fuelwood extracted (Qtl)	Weight of charcoal extracted (Qtl)
20-30	0.26	2.99	0.49
30-40	0.73	8.39	1.38
40-50	1.36	15.64	2.58
50-60	1.52	17.48	2.88
60-70	2.09	24.03	3.96

- i) One cubic meter of fuel wood of Ban oak weighs 11.50 Qtl.
- ii) The out turn of charcoal is to be taken as one quintal for 6 quintal of fuel wood.

8.9 COMPARISON OF GROWING STOCK: The comparison of actual growing stock with normal growing stock has been done for deodar as under:

(a) From table 11 of multiple yield table for Deodar (Site quality II) and 'D' grade of thinning, the normal growing stock has been worked out by the following formula:-

Normal growing stock per Acre = $n(mn + m.2n + m.3n + \dots + m.u/2)$

Here 'n' stands for 10 yearly intervals in the yield table 'u' for rotation.

mn, m.2n, m.3n for growing stock at ages of 'n' years interval.

Normal growing stock per Acre

$$= 10/120 (700 + 2200 + 3900 + 5350 + 6500 + 7000 + 8550 + 9450 + 10250)/$$

$$= 4114 \text{ cft, per Acre.}$$

$$= 116.522 \text{ m}^3 \text{ per Acre.}$$

$$= 287.93 \text{ m}^3/\text{ha.}$$

Actual growing stock: {Enumeration results shown as Annexure-XII}

Area of Deodar-Kail Working Circle Enumerated = 3198.08 ha

Volume of Deodar worked out using local volume table = 677037.938 cum

Actual growing stock of Deodar = 211.70 cum per ha.

(b) According to table 42 of the Multiple yield for Deodar, the normal growing stock of the crop.

(i) Above 12" diameter for 120 years rotation, quality II and D grade of thinning is 3674 cft/Acre.

(ii) For the same rotation, quality class and grade of thinning, the normal growing stock is 4114cft/acre as per Table 34(Multiple Yield Tables). The difference is 4114-3674= 440cft. This is volume below 12"diameter.

(iii) Table 11 for quality II and D grade thinnings reveal volume of stem timber below 8" is 20% of that when the average crop diameter is 8-12". Hence stem timber volume of 8-12" is 352 cft(20% of 440) minus 440 cft. The normal growing stock above 8" is 3674+352-4026 cft/acre=9948 cft/ha=281cum/ha. The actual growing stock after carrying out enumeration in Deodar-Kail working circle per ha is 211.70 cum.

CHAPTER IX

CAPITAL VALUE OF THE FORESTS

9.1 GENERAL It is very difficult to ascertain the exact value of forests especially when intangible benefits derived from these renewable resources are taken into account. However, present capital value has been estimated on the basis of value of land, growing stock of various species and other non timber forest produce.

9.2 ESTIMATION OF CAPITAL VALUE In case of Deodar-Kail Working Circle and Chil Working Circle, the degree of estimation can be said to be reasonably accurate as total & partial enumerations were carried out. Capital value of forests allotted to Protection Working Circle is based on enumeration by sampling and thus the growing stock and estimated value is subject to some degree of variation. The capital value of forests is worked out as under:-

A. FOREST LAND

Total area	33,139.02 ha
Cost of land per ha	₹ 100,000
Total value	₹ 3,31,39,02,000

B. GROWING STOCK The present capital value of trees has been estimated by applying market rates for the year 2007-08. The estimation of capital value of growing stock of various species is given on next page.

Total Value of tree species (A)	= ₹ 59,087,422,491
Non Timber Forest Produce & Wild Life (B)	= ₹ 5,00,00,000
Total Capital Value of forests (A+B)	= ₹ 59,087,422,491

The above estimate of the capital value of forests includes only tangible benefits such as production of wood, medicinal herbs, grasses etc. It does not include indirect benefits like their significant role in water conservation, stabilization of terrain, influences on local climate and rainfall, aesthetic value and the benefits conferred on agriculture, socio-economic support for rural communities. It is not possible to reckon these values in monetary terms.

Table 9.1 Value of Conifers

Dia Class	Deodar (No.)	Rate for 2007-08 (in ₹)	Value (₹)	KAIL (No.)	Rate for 2007-08 (in ₹)	Value (₹)	Fir Spruce (No.)	Rate for 2007-08 (in ₹)	Value (₹)	Chil (No.)	Rate for 2007-08 (in ₹)	Value (₹)
V	267191	3472	927687152	279532	2933	819867356	60367	1940	117111980	2272020	625	1420012500
IV	127003	10451	1327308353	122980	9057	1113829860	34540	4726	163236040	879177	2321	2040569817
III	76713	24341	1867271133	62809	22305	1400954745	18579	12210	226849590	255636	5989	1531004004
IIA	58305	51486	3001891230	43053	48412	2084281836	12371	24895	307976045	117480	12349	1450760520
IIB	40465	83873	3393920945	32568	82417	2684156856	9061	39521	358099781	58666	23585	1383637610
IA	30493	125643	3831231999	23620	126833	2995795460	6675	62964	420284700	28057	37524	1052810868
IB	19735	165609	3268293615	15108	171378	2589178824	5038	84776	427101488	11736	47488	557319168
IC	11667	203673	2376252891	8043	206478	1660702554	3515	109019	383201785	3786	62275	235773150
ID & >	7437	236962	1762286394	4361	241289	1052261329	2987	135445	404574215	1280	75589	96753920
	639009	905510	21756143712	592074	911102	16401028820	153133	475496	2808435624	3627838	267745	9768641557

Table 9.2 Value of Broadleaved Trees

Dia Class	Ban (No.)	Rate for 2007-08 (in ₹)	Value (₹)	Shisham (No.)	Rate for 2007-08 (in ₹)	Value (₹)	Poplar (No.)	Rate for 2007-08 (in ₹)	Value (₹)	Miscellaneous (No.)	Rate for 2007-08 (in ₹)	Value (₹)
V	210256	1800	378460800	141	927	130707	500	632	316000	178333	660	117699780
IV	100574	6390	642667860	35	2551	89285	410	1728	708480	81296	889	72272144
III	46591	15804	736324164	1	6768	6768	282	2770	781140	36057	2308	83219556
IIA	26440	28800	761472000				145	3324	481980	15344	4550	69815200
IIB	15018	45216	679053888				33	3324	109692	5518	6780	37412040
IA	8515	59364	505484460				22	3324	73128	2768	9522	26356896
IB	5381	69120	371934720				9	3324	29916	2446	12121	29647966
IC	2902	84024	243837648									
ID & >	2307	100080	230884560									
Total	417984	410598	4550120100	177	10246	226760	1401	18426	2500336	321762	36830	436423582

PART II

FUTURE MANAGEMENT

DISCUSSED AND PRESCRIBED

CHAPTER-I

BASIS OF PROPOSALS

1.1 General Forests constitute an assemblage of versatile natural resources. A very large section of our rural and remote area population depends on forests for their sustenance needs. The urban populations which may not be in the proximity of forests also indirectly depend on forests and derive innumerable benefits from them. Forests provide environmental and productive services.

Forests of Himachal Pradesh are very important, being integral part of Himalayan Eco-System. They have been instrumental in the economic development of vast Indo-Gangetic plains in particular the Sutlej-Ganga basin. The forests of HP have undergone a sea change in the past few decades and are presently under a great stress. They have been venerated as an entity but over-used as a resource.

Forestry in the present times has undergone striking changes. The focus of management has shifted from production to conservation. Non-timber forest produce has come to the forefront of forestry management. The role of local people in protection and management of forests has grown from strength to strength. Joint Forest Management has taken a formal shape. The decentralized planning process for area specific forest management approach has resulted in formulation of micro plans.

Himachal Pradesh Forest Policy 1980 envisages meeting the requirements of local right-holders while giving importance to watershed management. Similarly National Forest Policy 1988 emphasizes on efficient utilization of forest produce and maintaining substitution of wood and to meet the requirements of fuel wood, fodder, minor forest produce and small timber of the rural and tribal population. It further emphasizes on creating a massive peoples' movement with the involvement of women for achieving these objectives and to minimize pressure on existing forests.

1.2 Objectives of Management General objectives of management of forests of Karsog forest division are as under:-

1. To preserve the hill slides against denudation and erosion so as to ensure equitable flow of water in the streams and rivers that originate from these hills.
2. To improve moisture regime of soil, maintain water table and recharge ground water.
3. To fulfill the *bonafide* domestic and agricultural requirements of the local people especially poorest of the poor for timber, fuel, grass and grazing
4. To conserve, sustain, protect and improve the quality and stocking of the existing forests through participatory forest management
5. To optimize the carrying capacity of pasture and grass lands through increased investment, silvicultural research and regulation of grazing techniques
6. To ensure systematic development and exploitation of Non Timber Forest Produce that is found in the tract and to increase their productivity by artificial means wherever possible.
7. To identify fauna which is getting extinct or dwindling fast in numbers and suggest measures aiming at conservation & rehabilitation of natural habitat and gene pool while also combating man-animal conflict
8. To increase the size of carbon sinks so as to reduce green house effect.

1.3 Constitution of Working Circles Keeping in view the objects of management outlined in para 1.2, the following working circles have been constituted:

1. Deodar-Kail Working Circle
2. Chil Working Circle
3. Protection Working Circle
4. Plantation (Overlapping) Working Circle
5. Non Timber Forest Produce (Overlapping) Working Circle
6. Participatory Forest Management (Overlapping) Working Circle

7. Wild Life Management (Overlapping) Working Circle

8. Pasture and Grassland Improvement (Overlapping) Working Circle

9. Forestland Protection & Conservation (Overlapping) Working Circle

1.3.1 Deodar-Kail Working Circle The forests bearing pure Deodar, Kail in pure crop or in mixture with Chil, Raj/Fir have been allotted to this working circle. Such forests are situated on moderate to steep slopes. Efforts will be made to restore the species composition and regenerate the area using artificial and natural means.

1.3.2 Chil Working Circle The forests bearing Chil in pure crop or in fair proportion with Deodar-Kail have been allotted to this working circle. The established plantations of Chil of the previous plan have also been included.

1.3.3 Protection Working Circle This working circle includes all the forests which are located on steep to precipitous slopes, on broken terrain comprising conifers, ban oak or open crop of broad leaved species which was subjected to indiscriminate hacking in the past and requires rest for recuperation. These forests are mainly situated on difficult, precipitous and erodible terrains and form the catchments of River Satluj and other perennial streams. It includes such areas of Fuel Working Circle of the plan under revision as are situated on difficult terrains and warrant protection from future degradation. It also included such areas of Plantation Working Circle of the plan under revision as are still degraded, understocked with culturable & unculturable blanks requiring protection for insitu soil and moisture conservation.

1.3.4 Plantation Overlapping Working Circle This working circle includes such areas which are devoid of vegetation, carry open crop or have young plantations or crop which still needs protection. Only such areas have been taken in this working circle which has site factors favourable for raising successful plantations.

1.3.5 Non Timber Forest Produce (Overlapping) Working Circle This is an overlapping working circle and is constituted to ensure systematic development and exploitation of non timber forest produce that occur or can be introduced in this division. It will include all the areas which have high potential for raising NTFP through natural or artificial regeneration techniques.

1.3.6 Participatory Forest Management (Overlapping) Working Circle This working circle includes the forest areas near the habitations where active participation of the local people has been taken in the past along with potential new areas. The experience gained from social forestry, ODA, DFID, SVY projects have been incorporated to enlist the potential *panchayats* /villages where JFM approach can be successfully implemented. The selected forest areas are mostly DPFs situated near habitations that have become degraded, UPFs and wasteland that are in small bits, honeycombed, surrounded by cultivation and are left out after demarcation and settlement.

1.3.7 Wild Life Management (Overlapping) Working Circle It is an overlapping working circle and the management plan for preserving existing wild life is prepared. The provisions of Wild life Protection Act, 1972 are to be enforced and the man-animal conflict reduced.

1.3.8 Pasture and Grassland Improvement (Overlapping) Working Circle This is an overlapping working circle including all the low altitude grazing areas and high altitude pastures. This working circle primarily aims to augment the fodder resource.

1.3.9 Forestland Protection & Conservation (Overlapping) Working Circle This overlapping working circle includes areas having problems like invasive alien species; frequent fires, encroachment, illicit felling etc.

1.4 Working Circle, Their Areas and Distribution The statement showing the areas (in ha) by ranges is given here under:-

Table 1.1 Area Statement - Working Circles (Ha)

Range	Deodar Kail WC		Chil WC		Protection WC		Total	
	DPF	UPF	DPF	UPF	DPF	UPF	DPF	UPF
Pangna	1742.36	0	4881.48	1.80	4348.85	467.96	10972.69	469.76
Karsog	1102.39	0	5468.62	50.80	3415.96	64.84	9986.97	115.64
Seri	1410.07	0	2941.94	0	3135.29	79.83	7487.30	79.83
Magroo	2752.21	0	468.12	9.81	1471.73	0	4692.06	9.81
Total	7007.03	0	13760.16	62.41	12371.83	612.63	33139.02	675.04
G.Total	7007.03		13822.57		12984.46		33814.06	

All other Working Circles are overlapping and thus their range wise area is not given here.

1.5 Reasons for Constitution of Working Circles The forests have been allotted to various working circles on the basis of the physiography, growing stock, managerial requirements to meet specific objectives as enlisted in detail in chapters ahead.

1.6 Blocks and Compartments The addition and alteration of compartments/sub-compartments based on the composition of crop and treatment required has been made in the plan under revision and no further division is required. Invariably the natural features like ridges, nallas, and paths form the boundaries. The nomenclature of the forests has been changed, the old/new DPFs which were designated as OD & ND in the plan under revision have been now designated as D only. However the number of forests remains unchanged.

1.7 Enumerations Complete enumeration in PB I, PB IV and partial enumeration (twenty per cent) in PB II, PB III of earlier Deodar-Kail & Chil Working circles have been carried out. In Protection Working Circle, 5% stratified random sampling has been carried out for the enumeration process based on their composition, elevation, soil conditions etc. Area was estimated by graphical method from the stock maps. The total growing stock of the main species is given below:

Table 1.2 Summary of Enumeration Results

Species	V	IV	III	IIA	IIB	IA	IB	IC	ID	Total	Volume (Cum)
Deodar	259,062	1,23,688	74,921	57,157	39,740	29,965	19,296	11,592	7,390	6,22,801	6,50,589
Kail	2,60,565	1,14,947	57,956	40,157	30,919	22,466	14,320	7,850	4,239	5,53,418	4,53,295
Rai/Fir	52,316	30,473	15,518	9,817	6,719	4,751	3,290	2,002	1,596	1,26,483	1,28,414
Chil	22,67,729	8,77,268	2,54,147	1,16,520	58,205	27,850	11,589	3,755	1,272	36,18,335	5,99,884
Taxus	97	177	62	35	18	5	1	0	2	397	266,351
Ban	1,74,766	88,280	39,194	21,333	11,705	6,612	3,912	2,058	1,526	3,47,423	1,69,243
Mohru	406	350	324	273	116	71	10	3	0	1,553	1682
Kharsu	630	422	432	292	162	33	5	3	2	1,981	1796.7
Khancr	260	228	251	244	144	167	145	108	135	1,687	1535.328
Poplar	500	410	282	145	33	22	5	4	0	1,401	553.659
Walnut	83	33	21	22	22	12	15	6	1	215	157.086
Jamun	742	496	274	230	50	36	53	38	22	1,941	885.505
Shisham	141	35	1	0	0	0	0	0	0	177	15.651
Safeda	5	56	34	9	1	2	0	0	0	107	47.889
Arli	145	67	0	0	0	0	0	0	0	212	23.384
Khair	85	4	0	0	0	0	0	0	0	89	6.053
Bamboo	102	0	0	0	0	0	0	0	0	102	
OBL	1,57,738	72,259	32,074	13,948	5,119	2,638	1,465	551	315	2,86,107	77,769
Total	31,75,372	13,87,193	4,75,491	2,80,189	1,52,952	94,630	54,127	27,970	16,506	55,64,429	20,92,189
Percent	57.07	21.49	8.55	4.11	2.79	1.70	0.97	0.50	0.30	100.00	

1.8 Stock Mapping The stock maps of all forests have been taken from Survey sheets 1:15,000 scale and have been placed in their respective compartment history files.

1.9 Period of Working Plan It has been decided to extend the plan period of the current plan. The revised plan period shall be 2012-13 to 2026-27 and the period from 2000-01 to 2011-12 shall be treated as gone over and deemed to be covered under the plan under revision. Wherever applicable, data has been researched and provided upto 2010-11.

The yield position of all the working circles of the plan under revision has been updated and latest figures of position up to 31st March, 2011 included. The updated information in respect of position of forest clearance cases, forest fires, illicit felling, encroachment, timber granted to right holders, timber lots, resin b lazes, NTFP extraction, plantations raised etc. has been incorporated. Internal review of the plan is proposed in 2019-20.

CHAPTER-II

DEODAR-KAIL WORKING CIRCLE

2.1. GENEREAL CONSTITUTION This working circle covers all the Demarcated Protected Forests situated on comparatively moderate slopes and having Deodar and Kail as the principal or predominant species and which are fit for working under system of concentrated regeneration fellings. Most of the forests allotted to Regular Working Circle in the previous plan have been assigned to this working circle except for the forests having Fir-Spruce as the predominant species. In addition, the established Deodar-Kail plantations/regeneration of 2.5 mts. and above taken in the plantation working circle or Chil working circle in the plan under revision are also allotted to this circle.

2.2 GENERAL CHARACTER OF THE VEGETATION The forests of this working circle have mainly Deodar and Kail either pure or in mixture. Spruce and Silver Fir are confined to cool, shady and higher locations. The proportion of Fir-Spruce increases on the Northern aspects and in upper reaches. Chil forms admixture with Deodar-Kail in the lower portions and warmer localities. The younger age classes are dominant (70%) in this working circle. The pace of regeneration is satisfactory. The stocking is fair 435 trees per ha have been recorded including broadleaved associates and per ha volume being 398 Cum. The associates of Deodar-Kail besides Fir-Spruce are, *Texus*, Ban, Moru, Kharsu oaks, Khanor, Poplar, Walnut, Birdcherry, Nettles, and *Rhododendron* etc.

2.3 AREA AND ALLOTMENT This working circle covers 7007.03 ha Demarcated Protected Forests. The detail of forests and compartments constituting this working circle is given in Appendix. The range wise distribution of area is as under:-

Table 2.1 Area Statement of Deodar-Kail Working Circle

Range	DPFs(Ha)	UPF	Total(Ha)
Pangna	1742.36	0	1742.36
Karsog	1102.39	0	1102.39
Seri	1410.07	0	1410.07
Magroo	2752.21	0	2752.21
Total	7007.03	0	7007.03

2.4 SPECIAL OBJECT OF MANEGEMENT The special objects of management are:

1. To meet the bonafide requirements of the right holders for timber, fuel wood, fodder, NTFP etc.
2. To restock either naturally or artificially areas with deficient regeneration.
3. To obtain sustained yield of timber suited to the market demand.

2.5 BLOCKS AND COMPARTMENTS No change in the size/number of the compartment/sub-compartment has been done.

2.6 FELLING SERIES The division as a whole being one unit, there will be only one felling series.

2.7. ANALYSIS AND VALUATION OF CROP:

2.7.1 STOCK MAPS The stock maps of all forests have been prepared from survey sheets on 1:15000 scale and placed in respective compartment history files. The abstract of areas under various species is enumerated in the statement given below:

Table 2.2 Area under various species in Deodar-Kail Working Circle (Ha)

Range	Deodar	Kail	Rai/Fir	Chil	Oaks	B/L	Blank	Total
Pangna	1005.34	361.28	106.37	106.89	117.75	30.82	13.91	1742.36
Karsog	255.98	221.51	114.44	64.89	206.20	218.95	20.42	1102.39
Seri	365.11	406.80	55.13	39.32	207.05	205.28	131.38	1410.07

Magroo	1068.13	831.17	340.68	33.67	205.37	269.12	4.07	2752.21
Total	2694.56	1820.76	616.62	244.77	736.37	724.17	169.78	7007.03
Percent	38.46	25.98	8.80	3.49	10.51	10.33	2.43	100

2.7.2 SITE QUALITY The site quality of Deodar-Kail forests varies from II to III, the average being II/III. The site quality of individual compartments/sub-compartments has been indicated in the compartment history files. The crop in PB I is having mature, over mature and young trees. The crop in PB II and PB III areas is young, middle-aged to mature whereas the PB IV has very young crop. Due to heavy felling in the past, the proportion of young age classes is significantly higher. The percentage of each diameter class for Deodar-Kail has been worked out and in comparison to the normal distribution is as under:

Table 2.3 Percent Distribution of Various Class Trees of Conifers

Diameter Class(cm)	Class	Age (in years)	Percent distribution		Age (in years)	Percent distribution	
			Deodar	Actual	Kail	Actual	Normal
10 to 20	V	31	39	43	24	41	43
20-30	IV	51	19	21	37	19	21
30-40	III	65	12	14	49	11	14
40-50	IIA	83	9	10	62	8	10
50-60	IIB	101	6	8	75	7	8
60-70 & over	IA & over	120	12	6	92	11	6

2.7.3 DENSITY The density of the forest has been occularly estimated for each compartment/sub-compartment. An ideally fully stocked forest having no gap in the canopy has been given the density of 1.0 and the decimal figures were adopted for forests with less than full density. On the whole forests are moderate to well stocked and the average density varies from 0.3 to 0.8.

2.7.4 ENUMERATIONS The total enumeration of all conifer and broad leaved species down to 10 cm in all areas allotted to PB I & IV in the previous plan but partial enumeration (twenty percent) in areas assigned to PB II & III was carried out. The details of enumerations are given in Appendix II, whereas the summary of enumeration results is given below:-

Table 2.4 Summary of Enumeration Results (Deodar-Kail Working Circle)

Species	V	IV	III	IIA	IIB	IA	IB	IC	ID	Total	Vol (Cum)
Deodar	2,17,082	1,08,491	68,050	52,418	37,180	28,653	18,649	11,339	7,270	5,49,132	6,14,539
Kail	1,55,644	73,118	42,580	32,052	25,724	19,309	12,734	7,187	3,981	3,72,359	3,82,526
RainFr	52,245	30,428	15,491	9,801	6,714	4,746	3,287	2,002	1,591	1,26,305	1,29,240
Chil	25,641	11,059	6,215	3,816	1,973	1,243	715	265	87	51,014	17,999
Taxus	97	177	62	35	18	5	1	0	2	397	266
Ban	79,593	32,170	16,183	9,084	6,037	3,476	2,341	1,336	1,034	1,51,254	80,206
Mohru	406	350	324	273	116	71	10	3	0	1,553	1682
Kharsu	630	422	432	292	162	33	5	3	2	1,981	1797
Khancr	280	228	251	244	144	167	146	108	139	1,687	1535
Poplar	469	389	276	145	33	22	5	4	0	1,343	550
Walnut	63	32	21	22	22	12	15	6	1	213	155
Jamun	742	496	274	230	50	36	53	38	22	1,941	885
OBL	76,431	35,654	16,975	7,464	3,542	2,072	1,221	455	262	1,44,076	44,523
Total	8,09,323	2,93,044	1,67,134	1,15,876	81,714	59,845	39,182	22,746	14,391	14,03,255	12,74,902
Percent	43.42	20.88	11.91	8.25	5.82	4.26	2.79	1.62	1.05	100.00	

2.7.5 SILVICULTURAL SYSTEM The forests will be managed under Indian Irregular Shelter-wood System, also called Punjab Shelter-wood System with fixed Periodic Blocks. The advance growth (up to 30 cm height) of compact groups of 0.2 ha and more shall be retained as part of the future crop. After felling natural regeneration will be supplemented with sowing, planting. The young congested regeneration in PB IV shall be thinned/cleaned. Thinning and improvement fellings shall be carried out in PB III areas. No felling will be done in PB II except for removal of dead, dry, uprooted and fallen trees.

2.7.6 CHOICE OF SPECIES The efforts will be made to encourage economically important species suitable to the locality. The forests in this working circle have predominantly Deodar either pure or in mixture.

2.8 EXPLOITABLE DIAMETER It has been calculated that trees of 60 cm diameter and above, give maximum outturn in the shape of sleepers/scantlings which is in much demand in the market. The exploitable size is therefore fixed at 60 cm both for Deodar and Kail.

2.9 ROTATION AND CONVERSION PERIOD:

2.9.1 CONVERSION PERIOD The conversion period of 120 years has already been adopted. The forests are under the process of conversion to uniform.

2.9.2 ROTATION Deodar and Kail take 111 & 91 years respectively to attain an average diameter of about 60 cm, the size suitable for getting economically suitable sizes like sleepers/scantlings. Therefore, a rotation of 120 years corresponding to 60 cm diameter at breast height has been adopted.

2.10. REGENERATION PERIOD This is the period considered necessary for complete regeneration of a natural crop. Based on the past experience, the regeneration period of 30 years is fixed as this period is sufficient for Deodar regeneration to establish and also satisfy the requirements of the closure scheme.

2.11 FELLING CYCLE The felling cycle of 15 years has been adopted which also corresponds to the period of the plan.

2.12 DIVISION INTO PERIODIC BLOCKS With the conversion period of 120 years and regeneration of 30 years, the area of this working circle is divided into four Periodic Blocks with definite allotment. The allotment to different periodic blocks has been done on the following considerations:-

2.12.1 PB I This periodic block comprises of forests having more or less mature crop fit for carrying out seeding felling. This includes the forests prescribed for felling in the plan under revision but could not be felled and the new forests transferred from PB II after completion of regeneration period. Also the felled PB I areas of previous plan which could not be regenerated due to one reason or the other and require immediate, continuous support by artificial means are included in this category. This also includes the forests which are very open, degraded with regeneration status very low.

2.12.2 PB II The forests having middle-aged to mature crop or crop approaching maturity have been allotted to this periodic block.

2.12.3 PB III The forests having young to middle-aged crop either in uniform manner or intimate mixture with fair number of mature trees scattered all over.

2.12.4 PB IV The forests of felled PB I areas of expired plans which are completely regenerated and require immediate removal of over wood. In addition, the forests which were in plantation/protection working circles in the previous plans having established plantations are also allotted to this periodic block.

On the basis of aforesaid analysis, the extent of forest areas allotted to each periodic block is tabulated as under. However, the forest wise details is given in Appendix IV.

Table 2.5 PB Wise Allotment Deodar-Kail Working Circle

Range	PBI (Ha)	PBII (Ha)	PBIII (Ha)	PBIV (Ha)	Total (Ha)
Pangna	437.98	1010.8	27.48	266.1	1742.36
Karsog	194.14	626.48	237.4	44.37	1102.39
Seri	624.48	746.36	0	39.23	1410.07
Magroo	1035.92	525.24	239.71	951.34	2752.21
Total	2292.52	2908.88	504.59	1301.04	7007.03

2.13 REGULATION OF YIELD The yield from this working circle will include removals (seeding felling) from PB I, removal of seed bearers (final felling) in PB IV and thinning cum improvement fellings in PB III. No fellings have been prescribed in PB II except for removals of salvage trees. Given below is the volume calculation of conifers based on enumeration result as read from Local Volume Table given in Chapter VIII of part I.

Class	Deodar	Volume	Kail	Volume
V	217082	12156	155644	12451
IV	108491	21264	73148	15361
III	68050	51445	42580	25122
IIA	52418	82191	32052	39424
IIB	37180	97858	25724	65596
IA	28653	112320	19309	72987
IB	18649	104435	12734	68381
IC	11339	80960	7187	53543
ID	7270	51907	3981	29659
Total	549132	614536	372359	382524

The yield has been calculated using Von Mantel's formula

Thus using Von Mantel's formula,

$$\text{Annual yield} = (2 \times \text{G.S.}) \div r$$

Where G.S. = Growing Stock r = Rotation period of the crop

Thus, the annual yield of Deodar will be $(2 \times 614536) \div 120 = 10242$ cum or say 10000 cum

Similarly, annual yield of Kail will be $(2 \times 382524) \div 120 = 6375$ cum or say 6000 cum

The yield will be shared in the ratio of 85:15 from PB I (Seeding felling) & PB IV (Final Felling) for both species.

Yield calculation for fir and Spruce is not being done. They are present in very small patches and need to be preserved, keeping in view their poor regeneration status. At times, green trees are marked in pretext of salvage removal. To guard against this, no yield of fir and spruce is calculated and prescribed.

2.13.1 CHECK OF YIELD BY INCREMENT The annual increment put up by the crop in this working circle has been worked by adding up the volume increment put up in each diameter class. The formula can be expressed as:-

$$V_1 = \sum v_i \times l_i$$

Where V_i is the volume increment put up by the volume of all the trees of a species and

It is the increment percentage for the same diameter class for species. The volume increment is calculated as under :-

Species	IV	III	IIA	IIB	IA	IB	IC	ID	Total
Deodar	108491	68050	52418	37180	21653	18649	11339	7270	332050
Vol. factor	0.196	0.756	1.568	2.632	3.32	5.6	7.14	7.14	
Volume Cum	21264.24	51445.80	82191.42	97857.76	112319.80	104434.40	80960.46	51907.80	602381.64
CAI %	3.52	2.82	2.27	1.82	1.56	1.27	1.14	0.86	
Incr.Vol.Cum	748.50	1450.77	1865.75	1781.01	1752.19	1326.32	922.95	446.41	10293.90
Kail	73148	42580	32052	25724	15309	12734	7187	3981	216715
Vol. factor	0.21	0.59	1.23	2.55	3.78	5.37	7.45	7.45	
Volume Cum	15361.08	25122.20	39423.96	65596.20	77988.02	68381.58	53543.15	29658.45	370074.64
CAI %	3.81	2.92	2.47	1.8	1.57	1.24	1.20	0.88	
Incr.Vol.Cum	585.26	733.57	969.33	1180.73	1218.90	847.93	642.52	260.99	6439.23

Incremental volume of Deodar, Kail is 10294 Cum & 6439 Cum respectively, thus the prescribed yield specie-wise and over all removals is at par with the annual increment put by the species.

2.14 PROVISION IN CASE OF NATURAL CALAMITIES In case of damage due to natural calamities, the forest should be transferred to PB I for restocking and instead, an equivalent area of PB I, in which the regeneration fellings are still to be undertaken should be relegated to the PB II.

2.15 CONTROL OF YIELD The yield will be of two types, the main yield and Intermediate yield.

2.15.1 MAIN YIELD The seeding fellings including secondary/corrective fellings shall constitute the main yield. The final fellings of PB IV will also constitute the main yield.

2.15.2. INTERMEDIATE YIELD The removals in the form of cleaning, thinning and improvement fellings executed in PB III, PB V shall count towards the intermediate yield. The yield/removals from PB III shall however, be disposed off by meeting the right holders demand for timber, agricultural implements etc.

2.15.3 CONTROL All removals of whatsoever nature from V class (10 cm) and above shall count towards the prescribed yield. The yield will be controlled by volume. A deviation of $\pm 25\%$ in the annual yield is allowed in the prescribed yield for this working circle provided the commutative deviation checks within $\pm 10\%$ for each 5 years interval and should remain within $\pm 5\%$ for the plan period. In case the deviation exceeds the limit, then the felling will be deferred for the period the deviation is liquidated. The yield prescription for PB II is not binding and will depend upon the sanitation conditions of the forest. Any deviation will have to be got approved from the competent authority.

2.16 METHOD OF EXECUTING FELLINGS IN PB I In PB I there will be mainly two regeneration fellings viz; seeding and final. For the execution of such fellings, the following rules are laid down:-

1. The average distance of seed bearers should be 16-18 metres in case of Deodar, 18-21 metres in case of Kail and 12-15 metres in case of Fir/Spruce. The number of mother trees per hectare, comprising I and II class should be 45-60 for Deodar, 39-35 for Kail, 50-60 for Fir/Spruce.

2. In mixed forests of Deodar and Kail, the marking should aim at judicious manipulation of the canopy, so that Deodar regeneration gets an edge over Kail. This may be achieved by retaining more seed bearers of Deodar than Kail. Thereafter, the canopy should be drastically opened so that Kail regeneration fills up the blanks unsuitable for Deodar.

3. In forests where Deodar-Kail are found mixed with Spruce and Silver Fir, every effort is to be made to increase the proportion of Deodar-Kail. Fir-Spruce may be marked heavily in such forests in favour of Deodar-Kail.

4. The seed bearers preferably IIB and IA class trees should be healthy, tall, well grown with clean bole and wide, spreading crown. These should be as far as possible evenly distributed.

5. The secondary/corrective fellings are more or less same as seeding fellings, the only difference being that as a result of fellings in the past, regeneration might have come up in some groups and therefore, the fellings have to be heavier.

6. The compact groups of healthy and vigorous growing poles up to 30 cm d.b.h. but not less than 0.2 hectare in extent and 0.7 or more in density shall be retained as part of future crop. Such groups should be shown on map by the marking officer and a note to this effect entered in the respective compartment history files so as to ensure that such groups are not inadvertently felled in subsequent fellings. Thinnings in such groups should be light.

7. All badly shaped, suppressed or isolated poles and middle-aged trees will be marked.

8. On steep and precipitous portion of the forests, marking on selection principles will be carried out.

9. The marking should not be done on the banks of nallas, top of land slip/slide and at places where there is danger of soil erosion.

10. The marking should start from the top of the forest proceeding down hill; each forest shall be marked to its full silvicultural capacity.

11. The final fellings will be carried out only if the regeneration is fully established.

12. The broad leaved trees should not be felled indiscriminately. It is desirable to retain these trees for fodder supply and soil and water conservation. All the oak species are to be retained to maintain the moisture regime of soil. However, the inferior broad leaved trees interfering with the growth of main species or important/valuable broad leaved trees may be removed.

2.17 SEQUENCE OF FELLINGS IN PBI Due to ongoing moratorium on green felling, a felling programme of 15 years with felling PB I & IV areas in alternate years is proposed which may be modified according to policy and need. However, if the deviation from this is inevitable or necessary, it shall be fully explained and revised felling programme shall be got approved from the competent authority. In case the yield obtained is more than the prescribed one, some of the forests be deferred for fellings to subsequent years. The felling programme for PB I area is given below:

Table 2.6 FELLING PROGRAMME FOR PB I AREAS

Year	Name of Range	Particulars of Forest	Area (ha)	Yield in M3 Deodar Kall		Total	Nature of Felling
2012-13	Pangna	D 15 Rakni C1	10.49	1150	-	1150	Seeding
		D 27 Mahasu C3c	20.34	6800	350	7150	--do--
	Magroo	D 267 Shagoradhar C2	31.19	-	6150	6150	--do--
		Total		7950	6500	14450	
2014-15	Pangna	D 23 Barnog W	53.33	9000	-	9000	--do--
	Karsog	D 188 Kandhi C3a	22.73	-	1150	1150	--do--
	Magroo	D 255 Shagach C3c	18.29	-	4000	4000	--do--
	Total			9000	5150	14150	
2016-17	Pangna	D 23 Barnog W	53.33	9000	-	9000	--do--
	Karsog	D 188 Kandhi C3b	27.12	-	4950	4950	--do--
	Magroo	D 255 Shagach C3c	18.29	-	1000	1000	--do--
	Total			9000	5950	14950	
2018-19	Pangna	D 23 Barnog W	53.33	11000	-	11000	--do--

	Seri	D 226 Khadra C4b	41.31	200	3250	3450	--do--
		D 254 Sursan C3	58.42	-	1300	1300	--do--
	Magroo	D 255 Shagach C3c	18.29	-	850	850	--do--
		Total		11200	5400	16600	
2020-21	Seri	D 225 Dhamoon C2a	32.23	9400	-	9400	--do--
	Magroo	D 255 Shagach C3d	15.22	-	5000	5000	--do--
		Total		9400	5000	14400	
2022-23	Pangna	D 27 Mahasu C2c	36.38	11300	-	11300	--do--
	Magroo	D 255 Shagach C3d	15.22	-	3500	3500	--do--
			52.64	-	2450	2450	--do--
		D 259 Lotla C2a					
		Total		11300	5950	17250	
2024-25	Magroo	D 273 Lassi W	67.40	12500	6200	18700	--do--
		D 255 Shagach C3d	15.22	-	-	1000	--do--
		Total		12500	6200	19700	
2026-27	Karsog	D 171 Dopha-II C2	15.88	-	13500	13500	--do--
	Seri	D 225 Dhamoon C2b	57.31	9950	-	9950	--do--
	Magroo	D 292 Siri Narain C1	44.15	4000	2650	6650	--do--
		Total		13950	16150	30100	
Total				84300	56300	140600	

2.17 .1 SEQUENCE OF FELLINGS IN PB IV The sequence of fellings in PB IV areas is given as under :-

Table 2.7 FELLING PROGRAMME FOR PB IV AREAS						
Year	Range	Forest	Area (Ha)	Deodar	Kail	Total
2013-14	Magroo	D 259 Lotla C3a	32.78	1500	1500	3000
		Total		1500	1500	3000
2015-16	Magroo	D 255 Shagach C1c	36.41	1000	3000	4000
		C3a	20.51	600	1500	2100
		Total		1600	4500	6100
2017-18	Pangna	D 26 Chohara C4a	39.33	3000	2500	5500
		Total		3000	2500	5500
2019-20	Karsog	D 188 Kandhi C5b	26.32	1500	2500	4000
		Total		1500	2500	4000
2021-22	Seri	D 227 Charog C1	39.23	1000	1000	2000
	Magroo	D 266 Laharishill C2	19.62	1500	1000	2500
		Total		2500	2000	4500

2023-24	Pangna	D 22 Chandanident C1	62.12	5000	2500	7500
	Magroo	D 259 Lotla C3c	56.88	100	1500	1600
			Total	5100	4000	9100
2025-26	Magroo	D 262 Kathaundhar C3a	80.38	3000	2000	5000

			Total	3000	2000	5000
Grand Total				18200	19000	37200

2.18 MISCELLANEOUS REGULATIONS :

2.18.1 GRAZING Except for regeneration areas which shall remain closed to grazing till these are fully stocked, the grazing right-holders and nomadic graziers as admitted in the settlement report will not be restricted in other areas.

2.18.2 GRASS CUTTING There will not be any restriction on grass cutting outside regeneration areas until the plants are at least one metre high. Thereafter, the grass cutting may be permitted but it should be ensured that no plants of forest trees are cut along with grass.

2.18.3 LOPPING Kail and Spruce are lopped for litter and oaks for fodder. Lopping of Kail and Spruce should be stopped as it makes the trees susceptible to diseases and reduce the yield. The indiscriminate lopping of Oaks should be stopped.

2.18.4 PROVISION FOR RIGHT HOLDERS No forests have been exclusively reserved to meet right holders demand and it will be met from the forests in which such rights have been admitted in the settlement keeping in view the policy.

2.18.5 FIRE PROTECTION Deodar and Kail are fairly susceptible to fire. All the forests of this working circle will be strictly protected from fires. Young Deodar plantations and regeneration areas require special care and complete protection from fire. Special precautions are necessary in the areas adjoining Chil forests. The public co-operation is the key for fire protection and sincere efforts in this regard are required to be made. The forest floor should be swept clean of needles and debris.

CHAPTER- III

THE CHIL WORKING CIRCLE

3.1 GENERAL CONSTITUTION This working circle covers all such areas having Chil as the main crop and established Chil plantations fit for management under Punjab Shelter-wood System. The total area under this working circle is 13790.60 ha.

3.2 GENERAL CHARACTER OF VEGETATION Chil is the predominant species in all the forests allotted to this working circle. In the depressions and on the Northern aspects, ban oak forms the main associate along with *Rhododendron arboreum*, *Lyonia ovalifolia*, *Pistacia integerrima*, *Prunus puddum*, *Pyrus pashia*. Deodar and Kail are also mixed in the upper limits of these forests. In the lower extremities, Chil is found mixed with *Olea cuspidate*, *Dalbergia sissoo*, *Albizzia* spp. The forests are generally fairly to moderately stocked. Most of the forests of this working circle are situated in the vicinity of habitations and as such they have to bear the heavy demand of right holders for timber, fuel-wood, litter and grazing. Invariably selective fellings have been done all over these forests in the past to satisfy local demand. The result has been that the stock of mature trees had gradually diminished. The crop is irregular with preponderance of younger age classes and deficiency of higher age classes. Natural regeneration of Chil is generally good, at places profuse also.

3.3 SPECIAL OBJECTS OF THE MANAGEMENT The special objects of management are: -

1. To meet bonafide requirements of the right holders for timber, fuelwood, grass and grazing.
4. To restock/improve the stocking of forests both by natural and artificial means.
5. To protect these forests from fire and the ever increasing biotic influences as these are situated near habitations.
6. Consistent with the above to obtain sustained yield of timber and resin per unit area.

3.4 AREA AND ALLOTMENT The distribution of area by Ranges is given here under:-

Table 3.1 Rangewise Allotment of Area

Name of Range	Area of forests(ha)		
	DPFs	UPFs	Total
Pangna	4881.48	1.80	4883.28
Karsog	5468.62	50.80	5519.42
Seri	2941.94	-	2941.94
Magroo	468.12	9.81	477.93
Total	13760.16	62.41	13822.57

3.5 BLOCKS AND COMPARTMENT The division of forests into compartments /sub-compartments remained unchanged.

3.6 ANALYSIS AND VALUATION OF THE CROP:

3.6.1 STOCK MAPS The forests of the working circle have been stock mapped on 1:15000 scale, giving necessary details about the crop and other prominent features. The stock maps have been placed in respective compartment history files.

Table 3.2 Area under various species in Chil Working Circle (Ha)

Range	Chil	Deodar	Kail	Ral/fir	Oaks	B/L	Blank	Total
Pangna	4138.77	88.36	215.13	0.09	224.41	100.86	115.66	4883.28
Karsog	4679.40	67.94	138.00	0.41	249.98	254.86	128.83	5519.42
Seri	2461.49	26.87	155.37	0.04	135.21	93.28	69.68	2941.94
Magroo	306.31	54.06	74.52	0.02	21.67	10.17	11.18	477.93
Total	11585.97	237.23	583.02	0.56	631.27	459.17	325.35	13822.57
Percent	83.82	1.72	4.22	0	4.56	3.32	2.36	100

3.6.2 SITE QUALITY AND AGE CLASSES The site quality ranges from II to III, the average being II/III.

Table 3.3 Percent Distribution of Various Class Trees of Conifers

Diameter Class(cm)	Class	Age (in years)	Percent distribution	
			Actual	Normal
10 to 20	V	23	62	48
20-30	IV	39	24	23
30-40	III	53	7	12
40-50	IIA	67	3	8
50-60	IIB	82	1	5
60-70 & over	IA & over	97	1	4

3.6.3 DENSITY The density of each compartment and sub-compartment has been determined ocularly and mentioned in the compartment history files. It varies from 0.2 to 0.8, the average for working circle being 0.5.

3.6.4 ENUMERATIONS Total enumerations were carried out in PB I and PB IV areas of the previous plan. All the conifers and broad leaved trees down to 10 cm d.b.h. were enumerated. In PB II and III areas, partial enumerations (twenty percent) were conducted. The detail of enumerations appears in Appendix II and also in compartment history files. A summary of the enumeration results is given below:-

Table 3.4 Summary of Enumeration Results (Chil Working Circle)

Species	V	IV	III	IIA	IIB	IA	IB	IC	ID	Total	Volume (Cum)
Chil	22,42,088	8,66,209	2,47,932	1,12,704	56,232	26,607	10,974	3,490	1,185	35,67,321	5,81,884
Deodar	41,980	15,197	6,871	4,739	2,560	1,312	647	253	110	73,669	36,050
Kail	1,04,921	41,799	15,376	8,105	5,194	3,157	1,586	663	258	1,81,059	76,769
Rainu	71	45	27	16	4	5	3	0	7	178	173,991
Ban	96,173	54,110	23,011	12,255	5,669	3,136	1,591	722	502	1,98,169	89,036.76
Shisham	141	35	1	0	0	0	0	0	0	177	15,651
Salaca	5	56	34	9	1	2	0	0	0	107	47,889
Wahut	0	1	0	0	1	0	0	0	0	2	1,871
Poplar	31	21	6	0	0	0	0	0	0	58	9,826
Amia	145	67	0	0	0	0	0	0	0	212	23,384
Khair	85	4	0	0	0	0	0	0	0	89	6,053
Bambo	102	0	0	0	0	0	0	0	0	102	
OBL	81,307	36,605	15,099	6,484	1,577	556	244	96	53	1,42,031	33,245.67
Total	25,66,049	10,14,149	3,08,337	1,44,312	71,238	34,785	14,945	5,224	2,217	41,61,174	8,17,264.1
Percent	61.66	24.37	7.4	3.46	1.7	0.83	0.36	0.12	0.1	100	

3.7 SILVICULTURE SYSTEM The forests of this working circle shall be managed under the Indian Irregular Shelterwood System called Punjab Shelterwood System with fixed periodic blocks. The compact group of healthy and vigorously growing pole crop up to 30 cm dbh, at least 0.2 ha. in extent with a density not less than 0.7 ha. will be retained as a part of the future crop. The precipitous and rocky bits of forests will be worked on selection principles Thinnings and improvement fellings shall be carried out in forests allotted to PB III. In PB IV forests, cleaning, thinnings shall be carried out along with final felling/removal of over wood. No fellings shall be done in PB II areas except for salvage removals.

3.8 REGENERATION PERIOD Under favourable conditions, the regeneration will establish itself in 15 years, however, under adverse conditions; it may extend beyond 30 years. Thus on conservative side, the regeneration period of 25 years is taken.

3.9 ROTATION AND CONVERSION PERIOD Conversion period of 100 years has been adopted. The forests being in state of conversion, rotation of 100 years has been adopted. At this age the trees, in this locality attain diameter of 60 cm and above. The trees of this size are suitable for economical conversion into sizes most in demand for timber and for resin tapping.

3.10 EXPLOITABLE SIZE The exploitable size is therefore fixed at 60 cm d.b.h. corresponding to age of 100 years.

3.11 FELLING SERIES The division as a whole being the unit of control, there will be only one felling series.

3.12 FELLING CYCLE A felling cycle of 15 years corresponding to the period of plan is adopted.

3.13 DIVISION INTO PERIODIC BLOCKS
With a rotation of 100 years and regeneration period of 25 years, the forests in this working circle are divided into four fixed periodic blocks. The condition of crop in four periodic blocks is described as under:-

PB I The forests having comparatively mature stocking due for felling, felled areas of past which could not be regenerated with sparse over wood, plenty of blanks, degraded area with scattered over wood and some regeneration are allotted to this periodic block.

PB II The forests approaching maturity have been allotted to this periodic block.

PB III The forests having poles to middle-aged crop have been allotted to this periodic block.

PB IV The forests having young crop have been allotted to this working circle. The established plantations and successfully regenerated areas have been included in this periodic block. On the basis of aforesaid analysis, the extent of areas allotted to each P.B is summarized as under:-

Table 3.5 PB wise Allotment to different Ranges

RANGE	PB I	PB II	PB III	PB IV	TOTAL
PANGNA	1402.41	1000.27	231.54	2249.06	4883.28
KARSOG	1361.78	2078.41	240.61	1838.62	5519.42
SERI	846.79	1105.74	85.77	903.64	2941.94
MAGROO	58.04	195.27	9.81	214.81	477.93
TOTAL	3669.02	4379.69	567.73	5206.13	13822.57

3.14 CALCULATION OF YIELD The yield from this working circle will comprise yield from the seeding fellings in PB I, final felling in PB IV, thinnings & improvement felling in PB III. No yield is prescribed for PB II except for the removal of salvage trees.

Given below is the volume calculation of conifers based on enumeration result as read from Local Volume Table given in Chapter VIII of part I.

Class	Chil	Volume
V	2242088	112104
IV	866209	95282
III	2417932	69421
IIA	112704	82274
IIB	560232	84347
IA	26607	69977
IB	10874	42952
IC	3490	19055
ID	1185	6470
Total	3567321	581882

The yield has been calculated using Von Mantel's formula

Thus using Von Mantel's formula,

$$\text{Annual yield} = (2 \cdot GS) \div r$$

Where G.S. = Growing Stock r = Rotation period of the crop

Thus, annual yield of Chil will be $(2 \cdot 581882) \div 100 = 11637$ cum or say 10000 cum

The yield shall be shared 60:40 from PB I (Seeding Felling) & PB IV (Final Felling).

3.14.1 CHECK OF YIELD BY INCREMENT The annual increment put up by the Chil trees of this working circle has been worked out by the following formula:-

$$\text{Volume increment} = \sum v_i \times l_i$$

Where v_i is the volume of a particular class and l_i is the volume increment put up by the same d.b.h class in one year. The detailed calculations are as under:-

Species	IV	III	IIA	IIB	IA	IB	IC	ID	Total
Chil	866209	247932	112704	58232	26607	10874	3490	1185	140137
Vol factor	0.11	0.28	0.73	1.5	2.63	3.95	5.46	5.46	
Volume Cum	95282.99	69420.96	82273.92	87348	69976.47	42952.30	19055.40	6470.10	469780.08
CAI %	4.35	3.28	2.49	2.08	1.41	1.01	0.57	0.78	
Inc Vol Cum	4144.81	2277.01	2048.62	1754.44	900.67	423.92	164.64	50.47	11880.68

Total volume increment = 11880.68 cum, hence yield prescribed is within limit.

3.15. CONTROL OF YIELD The yield will be of two types, the main yield and intermediate yield.

3.15.1. MAIN YIELD The seeding fellings including secondary/corrective fellings shall constitute the main yield. The final fellings of PB IV will also constitute the main yield.

3.15.2. INTERMEDIATE YIELD The removals in the form of cleaning, thinning and improvement fellings executed in PB III, PB IV shall count towards the intermediate yield. The yield/removals from PB III shall however, be disposed off by meeting the right holders demand for timber, agricultural implements etc.

3.15.3 CONTROL OF YIELD All removals of whatsoever nature from V class (10 cm) and above shall count towards the prescribed yield. The yield will be controlled by volume. A deviation of $\pm 25\%$ in the annual yield is allowed in the prescribed yield for this working circle provided the commutative deviation checks within $\pm 10\%$ for each 5 years interval and should remain within $\pm 5\%$ for the plan period. In case the deviation exceeds the limit, then the felling will be deferred for the period the deviation is liquidated. Any deviation will have to be got approved from the competent authority.

3.16 METHOD OF EXECUTING FELLINGS IN PB I In PB I there shall be only fellings viz; seeding, secondary and final fellings. The object is to restock the felled areas by natural or artificial means and to open up the canopy sufficiently to get optimum growth conditions for the incipient regeneration already existing. The principles contained in Punjab Forest Leaflet No. 2 will be the guidelines for marking officers:-

1. While carrying out marking for seeding fellings about 20-25 trees of IIB and over per hectare shall be retained as seed bearers. The trees of IIA & IA can also be retained if the trees of IIB are not available. The seed bearers should be healthy, tall, well grown with clean bole and wide, spreading crown. These should be as far as possible evenly distributed.

2. The secondary/corrective fellings are more or less same as seeding fellings, the only difference being that as a result of fellings in the past, regeneration might have come up in some groups and therefore, the fellings have to be heavier so that the groups of young crop are opened up sufficiently to afford advantage of optimum growth.

3. The compact groups of healthy and vigorous growing poles up to 30 cm d.b.h. but not less than 0.2 hectare in extent and 0.7 or more in density shall be retained as part of future crop. The advance growth

shall not be opened up for regeneration, however, over wood would be removed completely from the patches of established advance growth.

4. The marking over rugged and steep slopes will be conservative and at difficult places from where growing stock can not be extracted and artificial regeneration can not be carried out, the marking will be carried out on selection principles.

5. All badly shaped, suppressed or isolated poles and middle-aged trees will be marked.

6. Except when silviculturally required, the broad leaved trees should not be felled. It is desirable to retain these trees for fodder supply and soil and water conservation. All the oak species are to be retained to maintain the moisture regime of soil. However, the inferior broad leaved trees interfering with the growth of main species or important/valuable broad leaved trees may be removed.

7. The marking should start from the top of the forest proceeding down hill; each forest shall be marked to its full silvicultural capacity.

8. The final fellings will be carried out only if the regeneration is fully established i.e. over 3 metres in height.

9. Dense groups of pole crop retained as advance growth shall be thinned/cleaned along with main fellings.

10. All the trees likely to damage advance regeneration when felled should be lopped before fellings.

3.17 SEQUENCE OF FELLINGS IN PB I Due to ongoing moratorium on green felling, a felling programme with felling PB I & IV areas in alternate years is proposed which may be modified according to policy and need. A felling programme has been prepared for the working plan period. The felling programme for PB I area is given below. The yield shown is just estimation. The markings are to be carried out strictly on silvicultural principles.

Table 3.6 Felling Programme for PB I Areas

Year	Name of Range	Particulars of Forest	Area(ha)	Yield of Chh In Cum	Nature of Felling
2019-20	Pangna	D 24 Barnog W	26.14	2000	Seeding
		D 62 Kuns C3	32.89	4350	--do--
		Total		6350	
2021-22	Seri	D 224 Mambli C2	14.53	200	--do--
		C3	12.34	900	--do--
		D 228 Bhundashill C1a	3.44	150	--do--
		C1c	13.9	800	--do--
		D 254 Sursan C1	31.8	550	--do--
	Magroo	D 256 Jagol C1b	24.93	2450	--do--
		Total		5050	
2023-24	Pangna	D 63 Paniaru W	99.81	6000	--do--
		Total		6000	--do--
2025-26	Pangna	D 61 Sorsan C1	45.68	800	--do--
		D 62 Kuns C1	24.65	1000	--do--
		C2	17.08	1250	--do--
		D 63 Paniaru W	99.81	4000	--do--
		Total		7050	

3.18 METHOD OF EXECUTING FELLINGS IN PB IV The marking in this periodic block entails the removal of seed bearers or overwood standing over established regeneration. The cleanings/thinnings shall also

be carried out in the congested young crop. The following guidelines should be observed at the time of marking in PB IV areas:-

1. The object of marking would be to free the established regeneration by removal of over wood. All I and II class trees not required silviculturally shall be removed and while doing so, the blanks to the extent of 0.1 hectare will be ignored.

2. All isolated II and III class trees which are likely to be Infested with the deformities like wolf trees will be marked.

3. Along nalla banks and very steep ground, the removal of over wood would be conservative.

4. Badly formed, gnarled, dead, diseased and dry trees shall be removed in improvement fellings.

3.19 SEQUENCE OF FELLINGS IN PB IV The sequence of fellings in PB IV areas is given as under:-

Table 3.7 Felling Programme for PB IV Areas

Year	Name of Range	Particulars of Forest	Area(ha)	Yield of Chil in cum	Nature of Felling
2012-13	Pangna	D 27 Bhanach W	36.98	2300	Final felling, thinning/cleaning
	Karsog	D 117 Dhamour Alad C1	27.56	1050	--do--
	Sen	D 228 Bhundashill C3b	13.64	600	--do--
		D 234 Sundaroo C1			
		Total	20.54	150	--do--
2014-15	Pangna	D 41 Bakhras C1	89.28	3100	--do--
	Karsog	D 147 Kashmir-IV W	28.08	1350	--do--
	Sen	D 232 Suranda C1	31.45	450	--do--
		D 240 Bahal C2c	15.56	150	--do--
		Total		5050	
2016-17	Magroo	D 284 Karsalbir W	144.15	6000	--do--
		Total		6000	
2018-19	Pangna	D 41 Bakhras C2	84.71	2350	--do--
	Karsog	D 181 Sanahardhar C1	15.32	900	--do--
	Sen	D 227 Charog C3a	20.49	850	--do--
		Total		4100	
2020-21	Pangna	D 45 Sandrahal W	75.55	2300	--do--
		D 49 Kol Bahal-1 W	23.57	1650	--do--
		D 72 Reshtadhar C4a	13.4	150	--do--
		Total		4100	
2022-23	Pangna	D 72 Reshtadhar C2d	32.45	2500	--do--
		C 4d	38.93	300	--do--
		C4f	16.33	200	--do--
		Total		3000	
2024-25	Pangna	D 48 Mashog W	39.51	2000	--do--
		D 62 Udhamsu C1	42.2	950	--do--
	Karsog	D 112 Thahoo W	33.12	750	--do--
		D 118 Kol C1	19.24	400	--do--
		Total		4100	
2026-27	Karsog	D 176 Ghatach C3	23.81	600	--do--
		D 181 Sanahardhar C4	28.37	650	--do--
	Sen	D 227 Charog C2b	62.71	1850	--do--
		D 233 Richhani C2d	72.5	950	--do--
		Total		4050	

3.20. SUBSIDIARY SILVICULTURAL OPERATIONS IN PB I:

3.20.1 CHOICE OF SPECIES Chil will be the species to be introduced by planting as well as broadcast sowing. Deodar and kail will be coming up naturally on upper reaches and will be encouraged by planting or sowing. In lower areas *Olea*, *Albizia*, *Dalbergia* and other broad leaved species are coming up naturally in fair proportion.

3.20.2 WEEDINGS Due to the frequent fires, there are practically no weeds in the Chil forests. But the weeds like *Lantana*, *Corissa*, *Dodonaea* etc. inhibit regeneration in many localities. All such weeds should be cut at an early stage.

3.20.3 CLEANINGS This operation is very important particularly to regulate the regeneration of Chil. The growth of Chil is very fast in sapling stage. Vigorously growing saplings should be retained. The spacing of plants till the first thinning should be one metre. Second thinning will be carried out when the crop is about two metres high and the saplings are spaced about 2 metres apart. The cut material should be removed outside the regeneration areas to minimize fire hazards.

3.20.4 CLOSURES All the PB I areas and the blanks in other areas taken up for planting need immediate closure to grazing for a period of 20 to 25 years. Barbed wire fencing in all closed areas should be provided. Normally the seedlings appear within 3 to 4 years after the seedling felling has been done. However, if the seedlings do not appear within 5 years then special measures should be taken for artificial plantation. The nursery technique for Chil is now well known. The emphasis need to be on the collection of quality seed.

3.20.5 NURSERIES To keep pace with regeneration, good nurseries are required for artificial regeneration of Chil. The existing nurseries should be maintained properly for timely supply of seedlings. If the extent of areas to be tackled is scattered and large, then temporary nurseries will be in or around PB I areas. The emphasis should be on quality seedlings.

3.20.6 REGENERATION ASSESSMENT The process of natural & artificial regeneration of felled PB I areas has been assessed by regeneration survey methodology. Most of the felled PB I areas of the past have been regenerated fully and transferred to PB IV but there are few such areas which could not be regenerated fully and are still kept in PB I. The results are also shown on map of scale 1:3750. The result of regeneration survey is given here under:-

Table 3.6 REGENERATION SURVEY OF FELLED PB I AREAS OF CHIL WORKING CIRCLE

S. N	Forest	Comp	Area	A	R	Sd	Sp	P	R+Sd+P	R+Sd+Sp	R+Sp+P	R+Sd+Sp	Sp+Sd+P	R+Sd+Sp+P
1	D 43 Kanori	C1	61.6	2.24	-	-	-	-	D1=387	D3=888	D3=29	D3=648	-	D1=8.76 D2=2.19 D3=26.28
2	D 58 Dharmour	C2	30	-	-	D1=21	-	D2=883	D1=28	D3=3.72	D1=2.12	D2=1.88	D2=1.42	D1=1.82 D3=5.47
3	D 58 Dharmour	C3	46.8	1.88	-	-	D3=6.8	-	D1=8.32	D1=6.19	-	D1=5.14	D1=5.47	D1=6.54 D2=3.56 D3=2.87
4	D 102 Talahan	C2a	56.1	-	-	-	D2=12	D1=234	-	-	D1=4.67	D1=6.59	D1=3	D3=12.68 D2=5.65 D1=3.42
5	D 239 Darai	C1b	98.6	-	-	-	-	-	D1=1243	D1=18.03	-	D1=10.45	-	D1=22.63 D2=18.56 D3=16.51

6	D 249 Makra	C2a	26. 7	-	-	-	-	-	-	-	-	-	D1=19. 65	D1=7.08
7	D 249 Makra	C2b	41. 7	-	-	-	-	-	-	-	-	-	D1=32. 48	D1=9.18

Note: A= Advance Growth (Density 0.7), R= Recruit(upto 30 cm), Sd= Seedling (30cm-1m), Sp= Sapling (1-2.4 m), P= Young Poles (2.5 m and above), D1=25-50% stocking, D2= 50-75 % stocking, D3=75% and above stocking

3.21 REGENERATION OF OAK Wherever a patch of oak is present in Chil forests, such patches should be spread further by means of artificial plantation of Oak in a linear way along moist stretches spreading out from the existing patch. This will not only improve water regime of the area, but will also provide valuable winter fodder. In case such areas are available near habitation, a user group of local people (preferably women) should also be formed, who will be allowed to remove grass/ NTFP from the closed area and will protect the plantation.

3.22 REGENERATION OF OTHER BROADLEAVED SPECIES Most of the other broadleaved species suiting to the area that naturally exist in the tract should also be restocked. These include species of fodder and fuel value like Kirik (*Celtis australis*), Beul (*Grewia optiwa*), Keada (*Ficus palmata*), Chimu (*Morus alba*), Kachnar etc.

3.23 PROTECTION AGAINST FIRES Major crop in this Working Circle is Chil, which is highly prone to fire. Thus, protection of the crop from fire will be done on priority. The strategies for this have been discussed in Fire Management sub topic of Foresland Protection Working Circle

3.24 PROBLEMS WITH NATURAL REGENERATION Some of the reasons identified for failure of natural regeneration are as follows:

3.24.1 ANNUAL FIRING OF GHASNIS (PASTURE LAND) In the entire tract *ghasnis* are burnt annually in hope of getting lush grass in the following rains. People must be educated about the harm that this activity causes to forests. Plantation of fodder species should be taken up and user groups should be made. Such user groups should be allowed to cut grasses from fenced area, should be given employment during plantation season on priority, should be given monetary incentives if there are no fires in nearby area. At times fire also spreads from private *Ghasnis*, thus burning of private *ghasnis* should also be done in presence of Forest Department officials.

3.24.2 SPREAD OF LANTANA In lower areas especially in Tattapani, Lantana has spread over large areas. Also it is finding its way through forests now and is found spread over even into forests in certain parts like in Churag, Chindi. Lantana being invasive, hardy and good competitor in nature suppresses natural regeneration of other species, more so of strong light demanders like Chil. The strategy for control of Lantana is outlined under Invasive Species Management.

3.24.3 GRAZING Karsog has an animal population of about 1.2lacs meaning more than 3.1lac tons of fodder requirement per annum most of which is derived from forests. Since largely the cattle are of local breed and there is very less stall feeding being practiced overall, there is a lot of pressure on forests. Regeneration is suppressed not only by direct grazing but also by trampling under hooves, soil compaction by cattle movement etc.

3.25 RESIN TAPPING Karsog division is the leading resin extraction division of Mandi circle. The extraction of resin by rill method is in practice but the strict implementation of the instructions is the need of the hour. The yield position is depicted in Table 2.6.

There is predominance of young crop in Chil Working Circle which means more trees will be available for resin tapping in coming years if the regeneration is protected. At present, there is a declining trend in the number of blazes being tapped. It came down from nineties and now it is reasonable. There is no record to suggest that illegal tapping is being practiced on large scale except for some stray cases, in fact the department and corporation seems to be in harmony. There is also no evidence of drying of trees as a result of resin tapping. But still there is need of strict compliance to follow instructions as well as

correct technique of rill method. Resin must be extracted by strictly in accordance with Manual for Resin Tapping and instructions of PCCF on the matter from time to time.

The areas being tapped continuously are to be given rest. Fire protection is the key for effective resin extraction. There is no study about the quality of resin but Karsog division is the leading resin extraction division of Mandi circle. The resin tapping technique is given in the Appendix. Resin extraction work is being done by Forest Corporation which has introduced the system of extraction of resin by "Rill Method" by replacing the traditional "Cup and Lip" method, which was damaging to the trees. With the introduction of "Rill Method", the yield per section (1000 blazes) is around 35 Quintals in 2009 season in Karsog division. Special emphasis is being laid on the quality of tapping. It is being ensured that the blazes are of standard size and no over tapping or illicit tapping is done. The work is done by professional trained labour. With a view to check smuggling of resin, HP Resin and Rosin Products (Regulation of Trade) Act, 1981 has been enforced in the State.

Table 3.6 Resin Extraction from Karsog Division

Year	No. of Blazes	Resin extracted	Average yield per thousand blazes (Qtlc)
1986	2,16,934	3,340.01	15.4
1987	1,96,382	4,794.84	24.42
1988	2,06,537	3,990.33	19.31
1989	3,31,426	9,938.89	29.98
1990	3,49,774	13,053.03	37.31
1991	4,47,612	20,299.37	45.35
1992	4,42,835	21,636.24	48.86
1993	5,87,615	23,397.15	39.82
1994	5,67,472	25,982.43	45.79
1995	5,66,341	22,934.63	40.5
1996	5,58,373	19,167.13	34.33
1997	4,62,940	12,267.52	26.5
1998	4,57,216	13,587.91	29.72
1999	4,42,525	14,454.12	32.66
2000	4,32,482	15,056.71	34.81
2001	3,65,794	14,018.69	38.32
2002	3,90,002	14,405.83	36.94
2003	3,85,562	11,811.10	31.24
2004	3,75,681	14,307.83	38.08
2005	3,58,861	13,643.90	38.02
2006	3,56,236	14,245.88	38.03
2007	3,54,835	13,835.02	38.99
2008	3,18,233	10,737.18	33.74
2009	2,48,932	8,762.41	35.2
2010	2,18,864		29.71
2011	2,29,687		34.11

CHAPTER IV

THE PROTECTION WORKING CIRCLE

4.1 GENERAL CONSTITUTION This working circle includes all the forests which are located on steep to precipitous slopes, on broken terrain comprising conifers, ban or open crop of broad leaved species which was subjected to indiscriminate hacking in the past and requires rest for recuperation. These forests are mainly situated on difficult, precipitous and erodible terrains and form the catchments of River Satluj and other perennial streams. It also includes such areas of Fuel Working Circle of the plan under revision as are situated on difficult terrains and warrant protection from future degradation. The forests included in the plantation working circle in the previous plan having culturable/unculturable blanks requiring in situ soil & water conservation have also been included in this working circle.

4.2 GENERAL CHARACTER OF THE VEGETATION The forests allotted to this Working Circle have their scattered distribution throughout the tract, hence they represent almost all the forest types starting from scrub in lower elevations and extending upto higher elevations. The oak forests are essentially to be protected and the management is purely based on criteria like soil and water conservation, biodiversity, carbon fixation etc. The forest types found are:-

SB/DS1 Northern Dry Deciduous Scrub Forest.

SB/S2 Khair-Sissoo Forest

9C1b Himalayan Chir Pine Forest.

9C1/DS1 Himalayan Scrub Forest

9C1/DS2 Sub-tropical Scrub Forest

12 C1a Ban Oak forests

12 C1b Moru Oak forests

4.3 SPECIAL OBJECTS OF MANAGEMENT

The special objects of management are as under:-

- i) To protect the hill sides from further denudation and erosion by preserving and enhancing the forest cover and by undertaking soil conservation works in a planned manner, where ever necessary.
- ii) To conserve moisture and streamline the flow of water in streams and *nalas* by protecting and enhancing vegetation cover in the watershed.
- iii) To improve the growing stock in quality as well as in quantity by sowing and planting of suitable species.
- iv) To protect the ban oak and other valuable broad leaved forests from indiscriminate exploitation and to preserve these as representative eco-systems of the region.
- v) To provide a suitable habitat for wild life and to protect non timber forest produce naturally growing in high altitudes.
- vi) Consistent with the principles of soil conservation, to provide for grazing of sheep goats and buffaloes of local and migratory graziers who come to these areas and also to meet the genuine demands of right holders for timber(through salvage marking) and other forest products.

4.4 AREA STATEMENT: Area statement of this WC is given in Table 4.1

Table 4.1 Area Statement

Range	Forest Area (In ha)		
	DPFs	UPFs	Total Forests
Pangna	4348.85	467.96	4846.81
Karsog	3415.96	64.84	3480.80
Seri	3135.29	79.83	3215.12
Magroo	1471.73	0	1471.73
Total	12371.83	612.63	12984.46

4.5 BLOCKS AND COMPARTMENTS No change in the boundaries of existing blocks and compartments/sub-compartments has been made as it was not required.

4.6 ANALYSIS AND VALUATION OF THE CROP:

4.6.1 STOCK MAPS The stock maps of all forests have been prepared on 1:15000 scale and placed in respective compartment history files.

4.6.2 QUALITY CLASS/DENSITY The general assessment of site quality class and ocular assessment of density have been made during field inspections in respect of each forest compartment or sub-compartment and recorded in the compartment history files.

4.6.3 ENUMERATIONS Since no regular fellings are to be prescribed, no elaborate enumerations were required. With the objective of making reliable assessment of growing stock in these forests, partial enumerations were carried out. To assess the growing stock, 5% stratified random sampling of forests depending on their composition, elevation; soil status etc. was carried out. The enumeration results are as under in Table 3.2.

Table 4.2 Enumeration Results

AREA ENUMERATED 416.23 ha											
SPP.	V	IV	III	IIA	IIB	IA	IB	IC	ID	TOTAL	VOL m ³
DEODAR	8129	3315	1792	1148	725	528	439	75	57	16208	11639
KAIL	18967	8033	4853	2896	1650	1154	788	193	122	38656	24778
RAI/FIR	8051	4067	3061	2554	2343	1924	1748	1513	1389	26650	56330
CHIL	4291	1909	1489	960	461	207	147	31	8	9503	3572
JAMUN	368	280	109	41	12	5	4	0	0	819	233
BAN	35490	14294	7397	5101	3317	1903	1449	844	771	70561	43636
KHARSU	360	229	82	42	9	7	8	3	1	741	370
KHANOR	13	4	7	5	22	22	23	13	11	120	167
W.NUT	31	21	9	9	5	4	18	9	3	109	92
TAXUS	215	55	20	4	2	0	0	0	0	296	64
OBL	20595	9037	3983	1396	399	130	70	20	25	35655	8128
TOTAL	96510	41244	22802	14156	8940	5884	4694	2701	2387	199318	149058

4.7 SILVICULTURAL SYSTEM Since the forests are to be protected. No fellings except to meet the right holders demand are permissible. Hence selection system is adopted to mark the trees for the right holders.

4.8 FELLING SERIES No felling will be carried out except to meet petty and genuine demands of right holders and that too on strict silvicultural principles.

4.9 METHOD OF TREATMENT:

1. These forests are to be strictly protected, no salvage marking to be done. Dry, fallen, sound trees may be removed departmentally for TD.
2. Fire vulnerability of each forest to be assessed and preventive measures against fires planned and put in the APO.
3. Soil and moisture conservation, treatment of landslips, gully formation and so forth, through extensive use of bio-engineering and contour trenching where feasible (on gentle slopes) to be planned. Areas indicated as available for planting in the forests allotted to this WC should actually be treated with staggered contour trenching and left to regenerate naturally.
4. Some assessment of the presence / absence/ abundance levels of key wildlife species to be got done in forests of this WC and then periodic monitoring done and properly documented
5. Budget for these works to be tapped from MNREGS, NPV and regular Soil & Moisture Conservation (Plan/Non-Plan) Schemes
6. Culturable blanks should be taken up for planting with suitable species.

7. In order to meet the fuel wood requirement of right holders, fuel wood depots may be allowed/approved by DFO as per Govt. policy and wood made available through salvage marking from the forests having such rights or adjoining forests.

4.10 YIELD AND CONTROL OF YIELD No fellings are prescribed except to meet petty demand of right holders and that too subject to silvicultural availability. Hence no yield is prescribed for this working circle, however, account of all such removals from 10 cm b.b.h and above in respect of each species shall be maintained.

4.11. SUBSIDIARY SILVICULTURAL OPERATIONS:

4.11.1 SOWING AND PLANTING: The plantable blanks and under stocked areas all over the working shall be planted with Deodar, Kail, Chil, Oaks and other B/L species.

4.11.2 TENDING OPERATIONS: The tending operations like weeding, climber cutting, cleaning, thinning, pruning etc. will be carried out as per the requirement of different species. Existing plantations are required to be inspected and present position recorded. Failed plantations should be prescribed for re-planting.

4.12 OTHER REGULATIONS: The miscellaneous regulations like closures, grazing, grass cutting, fire protection etc. will be followed.

4.12.1 LOPPING Indiscriminate lopping of various species particularly of ban oak has caused a considerable damage to forest crop which is prominent near habitations. Even Deodar, Spruce, Chil, Kail trees are also lopped by the villagers. So keeping in view the degraded state of forests, especially near villages, the lopping will be regulated. The following lopping rules shall be enforced:-

1. Conifers wherever found in these forests shall not be lopped.
2. The top one third portion of the crown of a tree shall not be lopped.
3. No tree below 30 cm d.b.h shall be lopped
4. The branches over 8 cm girth shall not be cut.

CHAPTER-V

PLANTATION (OVERLAPPING) WORKING CIRCLE

5.1 GENERAL CONSTITUTION This working circle comprises such areas which are devoid of tree growth/vegetation, carry open crop or have young plantations or crop which still need protection. Only such areas will be included which have site factor favourable for raising plantations, closure is possible, in view of the fact that not more than one third area of a forest can be closed at a time and where the resultant plantations will be economically viable. The areas adjacent to village habitations where the species of local requirement of fodder and fuel can be raised are also included in this working circle. The depleted scrub forests and the plantations raised in the plan period but not fully established are also included in this working circle. Focus will be on restoring the species composition from timber centric to other useful species for fuel, fodder, NTFPs.

5.1.1 GENERAL CHARACTER OF THE VEGETATION The forests of this working circle are located in different altitudinal zones, therefore, the vegetation varies. The following type of forests is included in this working circle:-

1.SB/DS1 Northern Dry Deciduous Scrub Forest.

2.SB/S2 Khair-Sissoo Forest

3.9C1b Himalayan Chir Pine Forest.

4.9C1/DS1 Himalayan Scrub Forest

4.9C1/DS2 Sub-tropical Scrub Forest

These forests have been described in detail in Chapter II, Part-I.

5.2 BLOCKS AND COMPARTMENTS

Being overlapping working circle, there are no fixed compartments/ sub-compartments.

5.3 SPECIAL OBJECTS OF MANAGEMENT The special objects of management are:-

1. To manage degraded, poorly or sparsely stocked, blank forests on scientific basis so as to increase the area under forest cover, thereby, reducing the pressure on other forests.

2. To develop and augment forest resources of area in order to meet the demand of the locals for firewood, fodder and timber & NTFPs.

3. To check denudation and soil erosion and to conserve moisture.

5.4 PLANTATION SERIES There will be only one plantation series, the division being the unit of control.

5.5 ANALYSIS AND VALUATION OF CROP The stock maps of all areas have been prepared on 1:15000 scale and placed in respective compartment history files. In order to cover the entire plantable area of the Division during the plan period, about 300-500 ha area annually is to be taken up for planting which is going well if the actual planting trend from 2001-02 to 2009-10 is visualized barring few years where the quantum has been high. The emphasis however, should be on proper selection of species, combination of species, reduction of mortality, post planting scenario and in this the JFM committees, PRIs and communities can play a very important role. The provision of PFM Rules can be made best use of by educating and sensitizing the communities. Actual planting from 2001-02 to 2009-10 is given in Table 3.2.

Table 5.1 Year Wise area Planted in Karsog Division (2001-2009)

Year	Area Planted (Ha)
2001-02	484
2002-03	251
2003-04	345
2004-05	489
2005-06	1062
2006-07	355
2007-08	1433
2008-09	1203
2009-10	541
2010-11	756

Compensatory Afforestation (CAT Plan Kol Dam):

2004-05	20
2005-06	50
Total	70

5.6 STRATEGY

Table 4.1 above, shows that more than 6000 ha area has been planted in last one decade in Karsog Division. However, when we look at their survival percentage, it is miserably low (14% for 9 years old plantation) as already discussed in Chapter VII, Part I. Thus, it is time to seriously relook at our plantation strategy.

5.6.1 THE CONCEPT OF USER GROUPS This has been demonstrated elsewhere in HP and is working well. Essentially a User Group comprises 10-15 local women or a SHG who are organized to protect the plantations and keep it free of grazing. This User Group is allowed to cut grass from the plantation area (which they divide amongst themselves) for self use or for sale. The User Group is further incentivized by making them take care of the plantation for three years and fund earmarked for Maintenance are transferred to them. The practice of organizing User Groups needs to become necessary for any area taken up for plantation by the department. The User Group will be allowed to take grass from the area as long as feasible and thereafter be allowed to take firewood and fodder once the trees are bigger. An active User Group would be invaluable in keeping exotic weeds away and in preventing fires.

5.6.2 NURSERIES It is axiomatic that the degree of survival of plantations is directly linked to the quality of nursery stock raised in nurseries. More so, when we are faced with increasing swings in seasonal fluctuations, both in terms of erratic rainfall and rising temperatures. These recent changes in weather patterns exacerbate our historical woes of compacted soil, damage by fire and cattle and general lack of interest (and therefore concern) of local communities in our plantations. Vastly improved nursery stock can in a major way address most of these impediments coming in the way of establishing successful plantations in and outside forests.

Few important qualities of any good nurseries would include:

- It should be large in size (atleast 0.5ha) so that it is cost effective and also proper infrastructure including water supply, germination chamber (poly-house), Mali-hut, soil mixing yard, vermicompost etc can be developed.
- Adequately trained, dedicated staff should be available in each nursery. Mali and labourers should be trained and guided from time to time about raising of quality stock.

c) Each nursery should specialize in 5-6 species suited to the area and have large stock of each species, which is graded from time to time so that only quality stock goes for planting.

d) Soil mixture is most vital component for raising quality stock. Thus care must be taken not to compromise with quality of soil mixture (ideally 1:1:1 of soil:sand:vermicompost)

5.6.3 TALL PLANTING One of the main reasons for failure of plantations is grazing / trampling by cattle. Also drought, fire hazards contribute to failure. Thus, to overcome pressure of grazing and drought, planting of tall plants (above grazing height) with well developed root system and good collar girth is desirable. Such plants will be able to cope with droughts owing to their well developed spread out root system, will be above grazing height and thus will survive grazing pressure and their good collar girth will help them withstand trampling. Such plants can be raised in nurseries for which month-wise operation activity has been given here.

Table 5.2 Raising of Deodar in Nurseries

Month	Activities for Raising Deodar
Nov-Dec	1. Sow seeds in trays filled with only Vermicompost. Keep the trays in polyhouse. (1 kg deodar seed contains 8000-10000 seeds approximately)
March (1 st Year)	1. Prick in 6"x4" bags or in root trainers with potting mixture of 1:1:1 of sand :soil: vermicompost.
July (1 st Year)	1. Transfer to 9"x5" bag alongwith ball of earth, add some more soil at bottom and sides
July (2 nd Year)	1. Transfer to 15"x7" bag alongwith ball of earth, add some more soil at bottom and sides
July (3 rd Year)	1. Plant 90% of the good quality plants 2. Retain 10% best plants from among the quality plants for production of 'Tall Plants' and shift them in bags of size 20"x12"
July (4 th Year)	1. Shift these plants to cement bags or such other alternatives.
July (5 th Year)	1. Plant out these plants in pits of size 60x60x60cm

Similarly month wise activity chart for raising Ban is given here:

Table 5.3 Raising of Oaks in Nurseries

Month	Activities for Raising Oak
Nov	1. Sow seeds in fresh cowdung immediately after collection as oak seeds are viable only for 7-14 days.
Jan (1 st Year)	1. Prick the germinated seedlings in 9"x5" bags with potting mixture of 1:1:1 of sand :soil: vermicompost.
July (1 st Year)	1. Transfer to 15"x7" bag alongwith ball of earth, add some more soil at bottom and sides
July (2 nd Year)	1. Transfer to 20"x12" bag alongwith ball of earth, add some more soil at bottom and sides
July (3 rd Year)	1. Plant 90% of the good quality plants 2. Retain 10% best plants from among the quality plants for production of 'Tall Plants' and shift them in cement bags
July (4 th Year)	1. Plant out these plants in pits of size 60x60x60cm.

Tall plants of other deciduous species will also be raised in a similar way as that of Oak, sowing time and technique will be as per species requirement. For deciduous tall plants, root-shoot cuttings will be raised in production nurseries while sowing will be done in mother nurseries.

Nurseries larger than 0.25 ha but smaller than 0.5 ha, that have been closed can be used as Mother Nursery for production of root-shoot cuttings of deciduous broadleaved species. Thus, all deciduous broadleaved species like Robinia, Chulli, Walnut, Horse Chest Nut, Daru, Drek, Ritha etc will not be

grown from seed in production nurseries but their root- shoot cuttings will be made in Mother Nurseries. Month wise activity chart for such nurseries is given in table 3.5.

Table 5.4 Mother Nurseries for Production of Deciduous Broadleaved Species

Month	Activities
Nov-Dec	1. Plough the field, add compost and broadcast seeds, level to cover the seeds 2. Flood irrigation to the field
March to June (Next Year)	1. Flood irrigation 2-3 times depending on rainfall and temperature 2. Weeding twice- once before and once during monsoon (these plants will not be shown in nursery return)
Nov' (Next Year)	1. Uproot plants that are >2', transport to production nurseries 2. Make root-shoot cutting retaining 4" of root and 4" of shoot 3. Plant in polybags of size 15"x7" (Now they will be shown in the Nursery Return of May'13 under age group 1.5 years)
Nov-Dec' (2nd Year)	1. Plant 90% of the quality plants 2. Retain 10% best plants from among the quality plants for production of 'Tall Plants' 3. Make root shoot cutting of these 10% retained plants by cutting the shoot at 2' height (retaining only one shoot) and shift alongwith the soil to bags of size 20"x12"
Dec' (3 rd Year)	1. Plant out these plants in pits of size 45x45x45cm

5.6.4 Choice of Species The choice of species depends on various factors such as climatic, edaphic, topographic and biotic but the surviving indigenous species give a clear indication of the most suitable species. Indigenous, fast growing, hardy species should be preferred which can survive under adverse conditions. Very sincere efforts should be made to bring the blank areas at lower elevation under forest cover. Efforts should be made to first afforest/ reforest areas near habitation with species of immediate use (mainly fuel, fodder) and then focus should be on blank areas away from habitation.

The species to be planted altitude-wise are suggested as under. However, Divisional Forest Officer is at liberty to change/add/raise new species suitable to a particular site.

Table: 5.5 Suggested list of species to be planted

Altitude	Species suggested for plantation
Up to 1000 metres	Shisham, Bamboo, Khair, Ritha, Toon, Bihul, Siris, Khirk, Kachnar, Daru, Harar, Bahera
1000 to 1500 metres	Robinia, Bihul, Toon, Ritha, Kachnar, Willow, Leucaenia, Bamhoo, Khair, Khirk, Kikker, Daru, Hill Poplar
1500 to 2500 metres	Deodar, Walnut, Hill Poplar, Willow, Robinia, Ban Oak, Horse Chestnut
2500 to 3000 metres	Silver Fir, Maple, Walnut, Moru Oak, Bird Cherry, Ash, Hill Poplar

5.7 Plantation Programme The plantations raised from 2001-02 to 2009-10 in Karsog division are given as Annexure VI. DFO(T) may prepare annual plantation programme depending on availability of funds from different sources keeping in view the plantable nursery stock position. Extent of area available for planting is depicted here under:

Table S.6 Area Available for Planting

Range/ Beat	Forest	Gross Area (ha)	Area for Planting (ha)	Suggested Species
Pangana/ Kandha	D 72 Reshtadhar C2c	20.93	8	Ban oak
	C2e	101.63	28	Ban oak
	C3	91.16	20	Ban oak
	C4a	25.96	7.5	Ban oak
Kandha	D 73 Gherlohal C2	121.68	32	Ban oak
Balindi	D 74 Perbain W	1046.21	850	Khair, bamboo, kachnar
Alindi	D 75 Chatkar W	51.93	45	Khair, bamboo, shisham
Alindi	D 76 Kapdyas W	178.54	156	Khair, bamboo, shisham
Balindi	D 79 Moharu C2	54.15	48	Khair, ritha, shisham
Tattapani	D 100 Ghanger W	111.91	89	Khair, bamboo, shisham
Talehan	D 103 Talehan W	313.72	275	ban oak
Talehan	D 104 Vesta W	268.84	250	khair, shisham, bamboo
Karsog/ Bagshad	D 111 Bagshadh C2d	27.61	18	ban oak
Mahunag	U 124 Kalautha C4	62.56	25	ban oak
Parlog	D 128 Kashot-II W	400.82	380	bamboo, khair, shisham
Parlog	D 130 Manjhu-I	26.39	20	bamboo, khair, shisham
Mahunag	D 138 Bag Bakharl C1a	15.92	5	Deodar, ban
	C1b	18.09	10	Deodar, ban
	C3	265.38	85	khair, daru
Sanarli	D 167 Bajhu C4	53.46	18	Ban, deodar
Sanarli	D 170 Tikkar Karsog C2b	70.24	28	Ban, deodar
Dopha	D 173 Dopha C2b	38.36	20	Ban, deodar
Ghaliach	D 175 Pehran C2a	32.9	15	Ban, deodar
	C2b	31.05	12	Ban, deodar
Mendhi	D 208 Majhood C1b	49.79	18	
	C2	267.02	70	
Seri/ Niharinal	D 213 Niharinal C3	178.6	50	
Niharinal	D 214 Jhunjan W	528.52	250	Khair, grasses
Niharinal	D 216 Ganai W	33.89	22	Khair, grasses
Niharinal	D 217 Sanach W	85.53	33	deodar, ban
Niharinal	D 218 Sainjali C1	45.24	18	deodar, ban
Pathrevi	D 236 Pathrevi C1a	46.7	18	Deodar, ban
	C4a	23.08	8	Deodar, ban
	C4b	45.06	16	Deodar, ban
Pathrevi	D 237 Katanda C2a	31.61	10	Deodar, ban
	C2b	30.33	10	Deodar, ban
	C2c	22.49	8	Deodar, ban
	C2d	19.72	8	Deodar, ban
Pokhi	D 238 Gadaran C2a	38.53	15	Deodar, ban
	C2b	27.11	10	Deodar, ban
Niharinal	U 19 Jhunjan W	79.03	36	khair, grasses
Magroo/ Mahoe	D 255 Sagach C6	80.69	30	Ban, deodar
Katanda	D 259 Lotla C6b	52.25	20	Ban, deodar
	C6c	16.58	7	Ban, deodar
Kathaundhar	D 262 Kathaundhar C4	43.36	15	Ban, deodar
Lassi	D 279 Nadaun C2	64.92	25	Deodar
Choura	D 280 Nadaun-II W	33.83	18	Deodar
Serimangarh	D 295 Sainj W	3.13	2	Deodar, ban

Serimangarh	D 296 Balhishill C1	29.33	9	Deodar, ban
	C2	36.84	12 ~~2.5~~	Deodar, ban

5.8 PLANTATION PRACTICES Under the current departmental policy a mixture of species in departmental plantations is required in the following proportion:-

30% medicinal trees suitable for the area, 20% wild fruit trees suitable for the area and the remainder to be the main species of the forest type either conifers or broad leaved. It has, therefore, to be ensured that for plantation programmes sufficient diversity of tree species is grown and available in the nurseries. It is also prescribed that wherever deodar is being planted the plants should be atleast 2 and a half years old. Similarly broad leaved species should be atleast 1 year old. Deciduous broad leaved species are to be planted during winter while conifers are to be planted during the rainy season.

5.8.1 PLANTATION JOURNALS It is essential that whenever a site is selected for plantation a proper hard bound nursery journal is prepared for that site. The nursery journal must have a large sketch map of the area showing boundaries and other details like nallas, rocky out crops, existing patches of trees etc. It is important that GPS coordinates of atleast 6 to 8 points around plantations are recorded and entered in the plantation journal along with the altitude of the area. Details of all works carried out must be entered in the plantation journals and signed by the concerned officials showing date of signature. All inspecting officers are to record their visits and comments/observations in the plantation journals. Once a plantation journal is complete i.e. in the fourth and fifth year of the plantation, it should be transferred to the division office and kept properly in record there.

5.8.2 FENCING Fencing needs to be done around plantation sites only where it is necessary. Fencing along their steep slopes cliffs, should be avoided where it serves no purpose. However, it is advisable to plant bio-engineering species suitable for the area along three strand barbed wire fencing especially in areas where grazing incidence is high. Fencing work should be taken up during the rainy season along with live fence support even for area which is to be planted in the ensuing winter. Where economical, and especially along roads, treated bamboo posts should be used for fencing. Where adequate live fence material is planted, only 2 strands of barbed wire may be sufficient. Tall plants of broad leaved species (6-8 ft high) wherever available can also be planted along the fence.

5.8.3 NO SITE CLEARANCE IS TO BE DONE In the past it has been a practice to cut and remove all bushes & shrubs from the plantation area. This practice is to be discontinued as shrubs & bushes help prevent soil erosion and add in moisture retention. However, if the area has exotic weeds/ aliens species like Lantana, Parthenium etc. then these are to be removed when the area is fenced.

CHAPTER VI

NON TIMBER FOREST PRODUCE (OVERLAPPING) WORKING CIRCLE

6.1 GENERAL CONSTITUTION This would be an overlapping working circle covering all the working circle and is constituted to ensure systematic development and exploitation of non timber forest produce species that occur in the division. The main non timber forest produce found/extracted in the division are Resin, Medicinal plants, Cedar oil, grass. The resin extraction has been dealt under Chil working circle. The main emphasis/focus would be on medicinal plants.

6.2 SPECIAL OBJECTS OF MANAGEMENT The State has formulated Himachal Pradesh Forestry Sector Medicinal Plants Policy, 2006 which is aimed at conserving and strengthening medicinal plant resource base in forest areas as well as outside for use towards enhancing health and livelihood security of the people of the State on sustainable basis. The special objects of management would be:-

- i) To conserve and augment existing non timber forest produce including medicinal plants resource in its natural habitat.
- ii) To encourage cultivation of commercially important species of medicinal plants on private lands
- iii) To develop a system of pricing the wild harvest so as to reflect both the conservation costs and the community benefits.
- iv) To encourage public-private-community partnership for building capacity for cultivation, value addition and processing of raw material before export from the state.
- v) To promote the use of commercially viable medicinal plants by the state owned and private pharmaceutical units and subsidiaries engaged in value addition.
- vi) To maximize yield of medicinal plants through, sustainable natural and artificial regeneration and scientific exploitation.

6.3 BLOCKS AND COMPARTMENTS The entire tract of the division will be covered by taking beat as a unit.

6.4 AREA STATEMENT The working circle is overlapping, no area statement is required.

6.5 ANALYSIS AND VALUATION OF THE CROP The entire tract is rich in many useful shrubs, herbs, fungi which have been exploited from time to time. The area produces large quantities of Banafsha, Kakar singhi, Anardana, Guchhi, Rakhal, Lichens, Berberis roots etc. A list of commonly used or economically extracted medicinal herbs, plants occurring naturally are given in Table 5.1.

6.6 STOCK MAPS As the medicinal plants are mostly herbs and shrubs found on annual or perennial basis, stock mapping is not possible.

6.7 METHOD OF TREATMENT

6.7.1 ROTATIONAL EXTRACTION Unscientific and unsystematic extraction of medicinal plants is likely to reduce the yield and quality of the plants and may even lead to disappearance of the species. A four year extraction cycle of the medicinal plants is already in force.

This cycle will continue and is extended to the plan period as under:-

Table 6.1 Cycle of Extraction of Medicinal Plants

Range	Blocks	Years when Extraction will be allowed
Pangna Karsog Seri	Pangna Karsog Seri	2013-14, 2017-18, 2021-22, 2025-26
Pangna Seri Magroo	Chindi Richhani Magroo	2014-15, 2018-19, 2022-23, 2026-27
Karsog Pangna	Bagsharh Taltapani	2015-16, 2019-20, 2023-24,

Magroo	Mahog	2012-13, 2016-17, 2020-21, 2024-25
Karsog	Mamail	
Pangna	Kutachi	
Seri	Gwalpur	

Table 6.2 Medicinal Plants of Karsog Forest Division

S.N	Botanical Name	Common Name	Habit	Occurrence Zone	Parts Used
1	<i>Aconitum heterophyllum</i>	Mithi Patish	Herb	Sub alpine	Root
2	<i>Acorus calamus</i>	Barian	Herb	900 to 2000m	Rhizome
3	<i>Angelica glauca</i>	Chora	Herb	Above 2200m	Whole plant
4	<i>Artemisia nilagirica</i>	Siski	Herb	1500-2500m	-do-
5	<i>Asparagus adscendens</i>	Suled Musli	Shrub	Upto 1800m	Root
6	<i>Berberis</i> spp.	Rasaunt	Shrub	1800-3200m	Root
7	<i>Cannabis sativa</i>	Bhang	Herb	Up to 1600m	Leaves
8	<i>Cinnamomum tamala</i>	Tej patla	Shrub/Tree	Up to 2200m	Leaves
9	<i>Dioscorea deltoidea</i>	Shingli minoli	Climber	Upto 2200m	Tuber
10	<i>Ephedra</i> spp.	Bhutshur		Above 2200m	Roots
11	<i>Hieracium candicans</i>	Patlain	Herb	2000-2500m	Roots
12	<i>Mallotus philippinensis</i>	Kemal	Tree	Up to 1000m	Roots
13	<i>Morchella esculenta</i>	Guchhi	Fungus	1500-2500m	Fruiting body
14	<i>Myrica nagi</i>	Kaphal	Tree	1000-2100 m	Fruit
15	<i>Dactylorhiza hatagirea</i>	Salam Panja	Herb	Above 3000m	Roots
16	<i>Picrorhiza kurrooa</i>	Karoo	Herb	Above 3000m	Roots
17	<i>Pistacia integerrima</i>	Kakarsinghi	Tree	Up to 1500m	Fruit
18	<i>Podophyllum emodi</i>	Bankakri	Herb	Above 2200m	Rhizome
19	<i>Polygonatum vaticlatum</i>	Salam Mishri	Herb	2300-3000m	Leaves
20	<i>Potentilla fulges</i>	Bajardanti	Herb	1500-3000m	Roots
21	<i>Rhododendron arboreum</i>	Cheo	Tree	1200-2400m	Leaves
22	<i>Rhododendron compaulatum</i>	Saranger	Tree	Sub alpine	Flower
23	<i>Bergenia ligulata</i>	Pathar Tor	Shrub	1800m & above	Whole plant
24	<i>Swertia chrota</i>	Chiryata	Herb	Sub alpine	Flower
25	<i>Toxus wallichiana</i>	Rakhai	Tree	2400-3000m	Leaves
26	<i>Thymus surphyllum</i>	Bana/waln	Herb	1200-1800m	Seeds, leaves
27	<i>Tinospora cordifolia</i>	Gall	Herb	1500-2200m	Leaves
28	<i>Viola serpens</i>	Bana/sha	Herb	1000-3000m	Flower
29	<i>Valeriana wallichii</i>	Mushbala	Herb	2100-3000m	Root stock
30	<i>Valeriana hardwickii</i>	Nihani	Herb	1200-3600m	-do-

6.7.2 ARTIFICIAL PROPAGATION AND CONSERVATION Keeping in view the economic importance and demand of medicinal herbs, it is desirable to encourage naturally occurring medicinal plants in suitable localities. The demand of medicinal plants has picked up with setting up of pharmaceutical industries in the state. The existing germplasm of different herbs needs to be conserved. Following measures are suggested for the conservation, protection and propagation of medicinal plants:-

- Systematic rotational collection should be followed strictly as given in Table 5.2
- Heavy grazing and destruction of medicinal herbs should be checked as these species do not produce sufficient seeds/vegetative form of regeneration.

- The raising of nurseries/herbal gardens, drug farms should be developed through various research institutes like HFRI, UHF, Nauni, HPKV Palampur, CSIR Palampur, Ayurveda department who are engaged in medicinal and aromatic plants.
- Medicinal plant collectors should be educated and provided proper information or guidelines so that there is continuous regeneration of medicinal herbs.
- The community based organizations like Mahila Mandals, Yuvak Mandals, VFDCs and other rural co-operatives should be involved in the development, protection, propagation and conservation of medicinal plants.

6.8 PROPAGATION TECHNIQUES The technique of propagation and harvesting of some important plants is described in Table 5.3

6.9 OTHER NON TIMBER FOREST PRODUCING PLANTS/PRODUCTS In terms of local extraction of NTFPs, the most removed species (by quantity) is *Berberis* (several species). As per record shown in the Working Plan, between 1990-91 and 2006-07, a total of over 2604 MT of *Berberis* was exported out of Karsog Forest Division. The other high value export from the division has been of "gucchi" (*Morchella esculenta* + *Pleurotis* spp.), "dhingri" mushrooms; c. 15 mt between 1990-91 and 2002-03. Export of *Taxus* leaves; *Taxus wallichiana*, are recorded between 1990-91 and 1993-94 (86 MT). There are other low value NTFPs being collected and exported out.

6.9.1 GUCCHI *Gucchi* is a highly valued morel mushroom that grows over wide swathes of the countryside under deodar or mixed coniferous forests. It grows in March or early April (depending upon the altitude) and is collected by local people (men, women and children) as soon as one is spotted. This has led to extant free riding and consequently, *gucchi* collections are said to be dwindling all over the state. Another reason for the decline is the manner in which the morel is collected. It is wrenched off the ground, possibly also yanking out the substrate mycelium as well. There is neither time nor patience to allow the mushroom to shed its spores. So the next crops are getting less and less.

If locals can be organised and trained to do two simple things, *gucchi* might have a chance to bounce back. One, the species needs to be collected after it has shed its spores. This might vary according to weather and altitude, but the local people know when. Secondly, a simple training to get the collectors to use a blade to cut the mushroom stem (instead of yanking it out) is all that is needed to help the species recover. Of course to do this apparently simple job, there is a need to find out some good NGO or trainers who can take up this with the collectors (who are numerous) and sort of organise them into monitoring collection methods as well?

The royalty or export permit fee rate on *gucchi* is high: Rs 10,000 per quintal. While a quintal of *gucchi* is a lot and given the current market rates (between Rs 5 to 7000/kg), they might seem reasonable; but people are not tuned to paying such taxes on forest produce (agriculture income is tax free). This high rate is a reason why much of the *gucchi* trade seems to have gone underground. There is, therefore, a need to review these export permit rates for *gucchi* and bring about a more transparent system in its trade.

Table 6.3 Method of Propagation of Medicinal Plant

Name	Method of Propagation	Harvesting/Collection	Uses
<i>Artemisia ndagurica</i>	The seeds are minute. The sowing is done in Feb./March. Seedlings are transplanted in June-July in pits at a spacing of 0.5m×0.5m.	The crop is harvested in October when the plants flower.	The flowers are used in extraction of drug used as wormicide.
<i>Aconitum columbianum</i>	The species is propagated by sowing as well as planting rhizomes at 15cm deep at 30cm×30cm spacing during Feb.-March. If direct sowing is decided, then the soil is worked up to a depth of 15 cm. Sowing is done in patches which may be spaced at 30cm×30cm.	Harvesting is done after one year during Nov.-Dec.	The dried rhizome is generally used in the form of infusion. It produces beris results in case of dyspepsia and chronic diarrhoea.
<i>Aconitum heterophyllum</i>	The species is propagated by direct sowing in patches at 30cm×30cm during Feb.-March.	Roots are dug out in the month of Oct.-Nov.	Roots are used as astringent, tonic and in diarrhoea, cough.
<i>Angelica glauca</i>	The species is easily propagated by sowing in patches at spacing of 3'×3'. Sowing is carried out in Feb.-March.	Collection/harvesting is done in Sep.-Oct.	Roots, fruits used for flavouring. Used in medicines for digestion, heart burn, flatulence.
<i>Dioscorea deltoidea</i>	It is propagated by planting rhizomes in 15cm deep pit at the spacing of 60cm×45cm during March. About 15-18 Qtls. Of rhizomes are required for one hectare area.	Tubers are dug out in Nov.-Dec.	Tubers yield steroidal sapogenin which is a source for manufacture of oral contraceptive.
<i>Heracleum condicans</i>	The species is propagated by seeds and root cuttings. Seeds @ 10-15 Kg/ha are required. The root cuttings 2.5cm to 4 cm long should be planted in 30 cm deep pits at a spacing of 75cm×50cm in March-Apr.	After one year, the roots/tubers are dug in Oct.-Nov.	Roots are source of xanthotoxin, a furocoumarin which is used in treatment of leucoderma, fruits as aphrodisiac & nervetonic
<i>Podophyllum emodi</i>	The rhizomes are planted in 15cm deep pits in the zone of natural occurrence. The seeds germinate in about 3 years but if sowing is done in borer at low altitudes, it can germinate in 6 months, then the seedlings can be taken to sub alpine region and transplanted.	The rhizomes are collected when fully developed.	
<i>Picrothiza kurrooa</i>	It is easily propagated by planting rhizomes in 15 cm deep pits at a spacing of 60cm×60cm during Nov.-Dec.	Collection is done after 3-5 years when rhizomes are fully developed.	Roots are used as stomachic, tonic, improve appetite and stimulate gastric secretion.
<i>Sweetia chirayita</i>	It is propagated by sowing of seeds in patches at a spacing of 30cm×30cm during Feb.-March.	Harvesting is done in following November-December.	The dried plant yields drug used as tonic, stomachic, bronchial asthma & liver disorders.
<i>Valeriana wallichii</i>	The species is propagated by direct sowing or planting rhizomes in 15 cm deep pits at espacement of 30cm×30cm during Feb.-March. About 25-40 Qtls. of root stock is sufficient for one hectare.	Rhizomes are dug out after 3-5 years when fully developed.	Dried rhizomes are employed for hair and perfumes, as incense and in drugs for hysteria and nervous problems.
<i>Vidia serpens</i>	The species is propagated by sowing or planting root suckers at a spacing of 15cm×15cm during June-July.	Flowers are collected in Feb.-March in low lying area and in April-May in higher reaches.	Used for lung trouble, eye and ear diseases. Also used as blood purifier.

6.9.2 THREATS TO *TAXUS* AND *BERBERIS*

1. **LACK OF INVENTORISATION** We know next to nothing about the approximate number of trees of *Taxus wallichiana*, their regeneration status and their pockets of occurrence across the appropriate altitudinal zone in the division.
2. This tree, though on the List of **THREATENED TREES** (IUCN, RED LISTING FOR HP), is not enumerated as part of the enumeration done in forests. There appears to be no nursery stock grown nor are there any efforts for planting this species in appropriate locations.
3. Though collection and export of *Taxus* leaves has been banned since 1994 (?) and still continues, there are reports of its illegal collection and export, either as it is or in the name of *Talis patra* (*Abies pindrow* leaves), which is permitted and under present regulations export of which can be allowed by the Panchayat Pradhan.
4. *Taxus wallichiana*, is a very slow growing tree and unless successful plantations of it are raised annually, in the long term, this tree will eventually disappear.
5. *Berberis* as one can see is being extracted in huge quantity. It is not clear how this is done, but there must be implications for soil conservation?

6.9.3 URGENT ACTION ON *TAXUS WALlichIANA*

1. There is an urgent need to locate pockets / distribution of this tree in the forests of Karsog, map these sites using GPS and inventory the trees – class wise – there.
2. A suitable nursery to be identified and stock of *Taxus wallichiana* raised from cuttings (done in February using rooting hormones). One lakh such cuttings to be raised in poly bags every year for the next 5 to 6 years. The nursery stock has to be retained for two and half to three and a half years in the nursery before planting out. Since this is a long term, cyclic affair with a long nursery period, it is important that cuttings are raised on the recommended scale annually.
3. If we have sufficient well grown stock of *Taxus*, it is feasible to grown live hedges of or with the species around our closed areas and also to encourage farmers to use this as a live hedge. A practice that can be incentivized in suitable areas through PES.
4. In view of 2 above, a planting schedule for *Taxus* can be developed after 3 to 4 years. But this must continue every year for a long time to come; across the next many future management plans.
5. In recent years, some private companies have introduced *Taxus* plants in Himachal imported from the North East. These are apparently being grown by farmers on their private land and then exported. It is important that this stock is not introduced in forests of the state, unknowingly or by design.

In order to avoid unrestricted heavy removal of leaves, the Govt. of HP has formulated policy regarding grant of permission for collection of *Taxus* leaves and export thereof vide letter No. FFE-B-F (13)-2/95 dated 4th June, 1996, which is reproduced as under:-

1. The export permission for each year outside the state (within country) for the export of *Taxus wallichiana* will be issued by the Govt. after proper scrutiny.
2. The collection permission of *Taxus wallichiana* leaves by the right holders will be allowed by the Principal Chief Conservator of Forests, HP after the prior approval of the Govt.
3. No collection of *Taxus wallichiana* be allowed in the forests where the right of collection of these leaves has not been admitted in the Forest Settlement and revenue records.
4. The leaves will be allowed to be collected only from trees with more than one metre girth at breast height and restricted to lower 1/3rd of the tree.
5. The collection of leaves will be allowed by plucking. In case a branch is cut on silvicultural consideration, it should not exceed a finger in thickness. No damage whatsoever be allowed to be caused to the trees. The privilege is not an absolute right and, therefore, may be withdrawn by the Govt. in the event of abuse.

6. The collection be allowed to the right holders in the presence of forest guard and the representative of traders and no labour be allowed to be engaged for the purpose.

7. The *Taxus wallichiana* leaves which are collected from the areas by plucking in a particular year are to be kept under reserve for four years and their next turn for collection of leaves will come in the fifth year.

8. Four years collection programme will be prepared for collection of these leaves and in case due to some reason the plucking is not done in fifth year, the deviation permission from the Govt. like 10 year felling programme is necessary.

9. The collection of *Taxus wallichiana* leaves will be allowed from April to December every year in accordance with 4 years cycle. The plucked material would then have to be disclosed by the parties and export permission sought from the Govt. from April to December and shall have to complete the export by 31st January next.

10. The storing of *Taxus wallichiana* leaves be allowed at a depot specified by the DFO.

11. No removal of leaves be allowed from the depot without valid permission for export and realization of export permit fee of Rs. 600/- per quintal fixed vide this department notification of even no dated 17.8.93. The movement within Divisions/Circles will be regulated under the relevant transit rules.

12. The right holders have tendency to remove bark which shall not be allowed.

13. Since the leaves are used for preparing medicine and the collection and sale is remunerative, it should be allowed in scientific manner. It should be ensured that no damage is caused in collection and also no illicit collection and its export be allowed to take place. Collection by right holders may be allowed with against permission and forests be inspected during collection as endeavor to ensure collection on scientific basis only.

14. The quantity extracted from the various forests be entered in compartment history files and details also furnished on the close of season in February to the Govt.

6.9.4 ACTION ON BERBERIS CONSERVATION

1. A study to answer the questions raised must be commissioned soonest possible.

2. A PAR (Participatory Action Research) study be undertaken to evolve and adopt and monitor non destructive ways of harvesting this species.

3. *Berberis* should be raised in large numbers in nurseries, as it is a very versatile species for use in Bio-engineering.

6.9.5 POLICY ON INTRODUCTION OF MEDICINAL TREES IN FORESTS It is now the state policy that in different plantations of the forest department about 30% of the trees being planted need to be of medicinal value and also native to the tract where plantation is being done. There is thus a need to identify and grow suitable medicinal trees for different altitude zones in a particular forest division. While most trees may be technically "medicinal", it is important that species like deodar, khair, chil etc. which are normally grown in forest plantations are not reckoned as medicinal trees. In Karsog Forest Division, the low lying nurseries i.e. < 1200 mts. need to grow species like Amla, Harar, Behra, Bel (bil) etc. in sufficient numbers. It is important that these species need to be grown as Tall plants in the nurseries before being planted out. Similarly, between 1200 and 2400 mts. Species like *Myrica nagi* (kaphal), *Pistachia integerrima*, walnut, bird cherry, hazelnut etc. need to be grown in nurseries. Above that altitude the choice species for Karsog would be *Taxus wallichiana*, of course!

6.9.6 CEDAR OIL The cedar oil is extracted from old Deodar stumps and roots. The oil has multiple applications including, medicinal, cosmetic, insecticidal etc. The extraction of Cedar oil has been allowed by the Govt. to M/S Valley Extraction Private Ltd. Karsog since 1998-99. The detail of stumps handed over and oil extracted is given as under:-

Table 6.4 Extraction of Cedar Oil from Karsog Forest Division

Year	No. of stumps	Weight (Qtls.)	Royalty (₹)	Oil extracted (Kg)
1998-99	415	1470.4	280316	-
1999-00	158	701.15	128584	6515
2000-01	758	1616.1	233196	6190
2001-02	1513	2278.8	328831	10486
2002-03	2197	3290	474747	11039
2003-04	2676	4094	590838	16640
2004-05	4095	5880.2	848507	19820
2005-06	4553	8754.2	1263234	62200
2006-07	3292	8268.61		38200
2007-08	2000	5426.73		3000
2008-09	3000	6182.87		33200
2009-10	2850	7091		30800
2010-11	2500	6245		36000
2011-12	2860	7150		23200

The policy of extraction of Cedar oil is in the offing as the HFRI Shimla on the request of state Govt. has submitted its detailed report. The policy guidelines would be public shortly, until then these broad suggestions are proposed:-

1. The availability, age and genuineness of the deodar stumps for Cedar oil extraction are to be assessed carefully. The forest-wise enumeration of stumps is essential. The stumps which are at least 8-10 years old should only be marked. The stumps involved in violation of rules and acts should not be marked.
2. Not more than 20% of the available stumps to be marked from a forest as a conservation measure.
3. The extraction of stumps should be carried out manually, departmentally and handed over to the unit on road side instead of allowing them to enter the forest and extract the stumps. This will reduce the threat of soil erosion. No blasting is allowed for digging of stumps. The dragging of stumps shall also not be allowed.
4. The stumps should be weighed properly at roadside before handing over to the party.
5. The inspection of unit should be done regularly to monitor the extraction process. There should be proper check on the yield obtained and export be allowed strictly as per provisions of IFA.

6.10 CALCULATION OF YIELD No yield can be prescribed as the most NTFPs are extracted through right holders. However, proper record of all the NTFPs exported through Panchayats and the department, should be maintained annually and entered in respective compartment history files.

6.11 SUBSIDIARY SILVICULTURAL OPERATIONS As no silvicultural system is prescribed, no specific operations are proposed. However, when the medicinal plants are raised in the nurseries or plantations, the regular operations like closure, weeding, bush cutting, protection from fire, grazing etc. are to be carried as in case of tree species.

6.12 MISCELLANEOUS REGULATIONS

6.12.1 This includes extraction or collection and export of NTFPs. The collection of NTFPs is allowed strictly as per provisions of Settlement report. The export is allowed under HP Forest Produce Transit (Land Rout) Rules, 1978 against payment of specified export permit fee.

6.12.2 The following table shows the details of various NTFPs exported outside Karsog Forest Division from 1998-99 to 2006-07:-

Table 6.5 Extraction of NTFPs from Karsog

Year	Guchhi	Berberis Roots	Kail, Chil, Deodar Cones	Lichens	Acrus roots	Taxus Leaves	Talis patta	Muskbala	Green Moss	Shingli Mingli	Kakar singhi	Marigold	Others
Unit	Qtls.	Qtls	Qtls	Qtls	Qtls	Qtls							
1990-91	8.91	5710	80	125	6	60							232
1991-92	9.77	3558.2	70	216	26	514	35	15	24				5
1992-93	11.33	3425	397	192	17	245				15	15.6	30	
1993-94	13.56		693	98	30	39.42	19	15		100	1.07	20	
1994-95			810	9.5	4			4.5	160				
1995-96	34	250	158	8	60			5	40			4	
1996-97	3.1		783	15	2.8		18	5			1.5		15
1997-98	36.5	1845	780.5	15				30				550	34
1998-99	14.4	1603	569.8	15.2	27.6			20.51				50	60
1999-00	2.14	1075	408	60.5	26								22
2000-01	6.92		393	43									
2001-02	1.7	1932		37								176	44
2002-03	8.5		970	10								123	22
2003-04		2296										20	15
2004-05		930											
2005-06		2920											
2006-07		500											
2009-10		241											
2010-11		3335											
Total	151	29621	6082	844	199	858	72	95	224	115	18	973	449

CHAPTER VII

PARTICIPATORY FOREST MANAGEMENT (OVERLAPPING) WORKING CIRCLE

7.1 JOINT FOREST MANAGEMENT IN HIMACHAL PRADESH In 1985, social forestry was given impetus by the National Social Forestry (Umbrella) Project. The project achieved its objective of planting more than 100,000 hectares of plantations, but physical targets took precedence over participatory objectives, and social and equity issues could not be addressed.

In the 1980s the World Bank-supported Social Forestry project (1984-92) and the Indo-German Integrated Dhauladhar project (1982-92) were taken up in HP. Both were more participatory than previous FD projects. In the 1990s both donors switched their focus to the Shivalik hills with the Indo-German Changer Project that went on till 2005-06, as did the WB IWDP Kandi project.

The framework for JFM in HP is provided by the Government of HP Order of 12 May 1993, which followed the June 1990 Government of India (JFM) Circular enabling the spread of JFM. The HP Order was compiled following study of JFM resolutions issued by other states.

The JFM Order coincided with the development of a donor-led (DFID) project for Mandi and Kullu districts, in which JFM was a key element. This Himachal Pradesh Forestry Project (HPFP) may be seen to have facilitated the introduction of JFM statewide. Donor support to Mandi and Kullu districts continued until March 2001. But as one HPFD officer put it: *"There were no rules and this plagued everything"*.

Table 7.1 Growth of JFM in Kullu and Mandi

Year	No. of VFDCs in Kullu	Area (ha)	No. of VFDCs in Mandi	Area (ha)	Total no.	Total area
1995-96	4	1,870	-		4	1,870
1996-97	4	2,685	8	3,110	16	5,795
1997-98	12	8,930	13	5,537	25	14,467
1998-99	21	12,426	35	7,134	53	19,560
1999-00	14	7,000	42	21,174	59	28,174
Total	55	32,911	98	36,955	153	70,166

In addition in Mandi there are 35 Forest Management Plans (FMPs) covering about 10,500 hectares, and in Kullu there are 21 FMPs covering about 10,000 hectares. While efforts were made to integrate these FMPs into Working Plans and a nascent GIS facility started at FTI, Sundernagar, and talk of using remote sensing for WP writing on the Karnataka model, the whole thing fell through after 2001 with the end of the second phase of the DFID project. At the end of the second phase of the HP Forestry Project in 2001, it was agreed that all the 153 VFDCs formed in Kullu and Mandi would be taken over by the SVY and converted into societies.

Until 1998, JFM in HP was confined to donor-supported pilot activities (DFID, GTZ, World Bank). During 1998, *Sanjhi Van Yojna* (SVY) was launched.

To support the state JFM Order, Participatory Forest Management (PFM) Rules were developed for HP, and notified on 23 August 2001. These Rules make provision for increasing the institutional autonomy of Village Forest Development Committees (VFDCs) by registering them as Village Forest Development Societies (VFDSs) under the Societies Registration Act. Importantly, the PFM Rules encourage VFDS formation panchayat wardwise thereby attempting to link these bodies directly with the panchayat structure with each elected panch being on the executive committee of the VFDS, *ex officio*. However,

the role of the VFDSs continues to be viewed narrowly, focusing mainly on helping the HPFD to police forests and on wage-based micro-plan activities.

This resulted in the 'New SVY' rules and guidelines being announced by the GoHP in August 2001. They contain provisions for VFDSs to become, in legal terms 'the forest officer' (not notified as on July 2011) for levying fines etc, and for 100 per cent share in intermediate usufructs while on final harvest 75 per cent would go to the VFDS and 25 per cent to the panchayat. The GoHP agreed to completely forgo any share from JFM areas.

Under 'New SVY': entry point activities are abandoned but "income-generating activities" introduced; forest guards will not be the member secretary of the Executive Committee; but local organisers – usually led by a literate woman linked to a local community-based organisation, helps mobilise towards a properly representative VFDS based on a panchayat ward. Several meetings are held before a microplan is initiated – this shows VFDS maturity. The FD sends a cheque to a local bank account. The VFDS agrees with the FD to furnish a 'utilisation certificate' which can be monitored and checked.

Since January 2001 the Government of India agreed to bring "better" forests under JFM but how many have actually been included under microplans is not known. Even under FDAs, JFM continues to be restricted to degraded forests.

At the policy level the PFM Rules and SVY Rules and Guidelines of August 2001 are seen as a major step forward, laying the basis for uniformity in approach to community based forest management. It also makes JFM poverty focussed and is targeted to the resource dependent.

In 2003, MoEF started the Forest Development Agencies (FDAs) at district level – with DFOs getting direct access to central funding – for forest and plantation work for employment generation objectives. This is an 100 per cent central sector scheme, created to reduce the multiplicity of schemes with similar objectives (it merges four existing central schemes), ensure uniformity in funding pattern and implementation mechanism, avoid delays in availability of funds to the field level and institutionalize peoples' participation in project formulation and implementation. FDAs will be constituted at the territorial/ wildlife forest division level, and JFM committees will be the implementing agencies at grassroots level. FDAs are to work through forest guards / deputy rangers- and thus appear to conflict with SVY rules which allow for the member secretary to be elected by the JFMC / VFDS.

The growth of FDAs and therefore of JFMCs since 2003 appears to be fluctuating as figures culled out from various departmental reports indicate. In March, 2003, 678 JFMCs were reported covering a forest area of about 1640 km² distributed in RFs, OPFs & UPFs. In March, 2005, 1690 JFMCs are reported covering a forest area of over 4200 km². As of December, 2008, 1381 JFMCs stand listed. However, as per field reports only 986 of these are said to be active. Area covered is not mentioned. In March, 2010, a total of 1109 JFMCs have been reported covering again an area of about 4200 km². In July, 2010, the total number of JFMCs has been pegged at 1270 but how much forest area they cover is not indicated.

7.2 THE LESSONS LEARNT The last three decades of dabbling with JFM / PFM under various EAPs and the homegrown SVY and now the Centrally administered FDA do hold some valuable lessons and insights for the future of participatory natural resource management in the state.

1. PFM should focus in and around pockets of poverty i.e. remote, forested areas (better forests) and where livelihood dependence on forests is high. This would entail several genuine joint management activities (other than plantation) like collective protection against illicit felling, fires, poaching and so forth. Issues of Rights, equity and benefit sharing are better addressed and conflicts resolved.

2. In participatory approaches, the *process* is more important than achieving targets. Choosing and regularly training the right persons for the job is therefore critical.
3. Sharing of removals, including resin, intermediate and salvage felling with VFDSs are necessary to establish long term stake of local communities in PFM.
4. Continual policy and Rules adjustment and calibration to promote better market returns for wood and non-wood based enterprises. Example, the recent decontrol of bamboo trade and transit. Next: efficient markets for value added products.
5. Local Leadership – this is a critical role. Successful examples of JFM or CFM show that local leadership roles have been crucial in making the change. It could be an enlightened, accepted local person, an elected representative, a dedicated NGO/ CBO or even a committed forest officer. This is also important for sustainability of groups.

Why consolidate forest committees?

- Allow economies of scale to be applied, reducing the number of micro-plans to be established by one-quarter,
- More economical to produce field maps at a scale smaller than 1:20,000 and identifying all present land uses
- Development issues common to all villages could be addressed in a more efficient, coordinated and economic manner, including road upgrading, health and education, service delivery of agriculture and forestry extension, and minor irrigation,
- Facilitate dealing with common forestry problems
- Promote development of marketing cooperatives or federations, based on economies of scale for product sales, and improve market positions,
- Facilitate training for the communities by covering a larger, yet similar group,
- Support landscape-level forest planning that address conservation and economic goals,
- Allow scope for zoning community forests into areas conducive for timber and pole production, NTFPs, grazing and biodiversity conservation (with limited access).

Source: Unlocking Opportunities for Forest Dependent People,
World Bank, 2006

7.3 CONCEPT OF PARTICIPATORY FOREST MANAGEMENT The concept of Joint or Participatory Forest Management is an intervention to evolve organized and collective thinking on the issues of forest management keeping in view the fact that the forest resources are limited and the claim over these are varied, no single solution can satisfy the needs of all. The philosophy aims at involving all the stakeholders in resource generation activities through motivation, active involvement in the process of management and sharing of benefits through adequate institutional arrangements.

Joint management of forest lands is sharing of responsibilities, control, decision making authority and products over forest lands between Govt. and local user groups. The primary purpose of PFM is to create conditions at the local level which enable improvements in forest conditions and productivity. It is a movement towards a more democratic management of natural resources founded on the principle of equity, transparency and social justice.

It is widely acknowledged that the Govt. and development agencies alone can not solve the growing problem of degradation of forests and natural resource depletion. The traditional approach to management worked satisfactorily in the past when the population was less but depleting natural resources have led to the concept and practice of participatory management.

7.4 SPECIAL OBJECT OF MANAGEMENT The basic objects of Joint or Participatory Forest Management are:-

- i) To evolve consensus on the basic issues for the conservation of forest resources including soil and water.
- ii) To provide an effective treatment for wastelands, degraded forests and forest lands situated near villages through protection, afforestation, pasture development, soil conservation by active participation of local people.
- iii) To maintain the environmental stability through preservation of natural resources through involvement of local people in management.
- iv) To augment fuel wood, fodder and small timber production for use by local people.

The Govt. of HP has notified Himachal Pradesh Participatory Forest Management Regulations, 2001 which are reproduced in Appendix XXV.

7.5 IMPLEMENTATION OF JFM IN KARSOG DIVISION The JFM approach has been implemented in the division through projects like Overseas Development Administration or DFID & Sanjhi Van Yojna. The micro plans were prepared in accordance with project philosophy and works executed by VFDC/VFDS, the list of which is given in Table 6.1.

Activities like soil conservation, afforestation, village development activities, fire protection, grazing have been undertaken in the past but almost in all cases, the participation of locals remained upto fund flow only. Most of the committees are totally inactive now. There is a need to revive, activate and involve these rural committees in forest management activities.

Table 7.1 Old JFM Committees in Karsog Forest Division

Range	JFM Committee	Registration No. & Date of Registration	Period for which funds were provided
Pangna	Alsindi		1999-00 to 2003-04
	Machhrot	129/98-99 dated 8.12.98	1998-99 to 2000-01
	Surahi		1995-96 to 1997-98
	Sorta	1/cc dated 18.11.96	1997-98 to 1999-00
	Reshtadhar	261 dated 21.3.98	1997-98 to 1999-01
	Kandha	264 gated 21.3.98	1997-98 to 1999-02
	Bajhu		1999-00 to 2002-03
	Parvain		1999-00 to 2002-04
	Tattapani	62 dated 29.12.99	1998-99 to 2002-03
	Alsindi		2001-02 to 2003-04
Karsog	Kani-Mandlah	135/98-99 dated 28.12.94	1999-00 to 2001-02
	Mahadev-ki-Banoni	85/98-99 dated 11.9.99	1998-99 to 2000-01
	Gajeha		1999-00 to 2003-04
	Kalotha		1998-99 to 2000-01
	Sunas		1999-00 to 2003-04
	Khanora	135/98-99 dated 28.12.98	1999-00 to 2003-05
	Thach	118/96-97 dated 3.12.96	1995-96 to 1999-00

Seri	Alyad	63 dated 29.12.99	1998-99 to 2002-03
	Mehran	60 dated 29.12.99	1998-99 to 2002-04
	Shirgal	64 dated 29.12.99	1998-99 to 2002-05
	Thach	61 dated 29.12.99	1998-99 to 2002-06
	Paloh		1999-00 to 2002-03
	Dhawal		1999-00 to 2002-04
	Thakurthana		1999-00 to 2002-05
	Kotlu	47/97-98 dated 24.7.97	1997-98 to 2000-01
	Pathrevi		1999-00 to 2001-02
	Nanj	65 dated 29.12.99	1998-99 to 2002-03
	Gwalpur	66 dated 29.12.99	1998-99 to 2002-04
Magroo	Plainidhar		1999-00 to 2002-03
	Jagol		1999-00 to 2002-04
	Gattu	16 dated 23.12.99	1998-99 to 2002-03
	Plainidhar	72 dated 21.5.02	2001-02 to 2002-03

(Source: Office record DFO Karsog)

As of March '11 following JFMCs are active in the Division:

Table 6.2 Active JFMCs in Karsog Forest Division

Range	Block	Beat	JFMC
Karsog	Mamail	Mamail	Sanan
Karsog	Mamail		Bhayal
Karsog	Mamail		Bag Girjoo
Karsog	Mamail		Salana Doghari
Karsog	Mamail	Ghallach	Lathari
Karsog	Karsog	Kakahan	Bakhrot
Karsog	Bagdad	Mahunag	Kaloutha
Pangna	Pangna	Pangna	Shahal Bakhori
Pangna	Pangna	Begli	Sorta
Pangna	Pangna	Surhi	Thach
Pangna	Kutahchi	Kutachi	Kutwachi
Pangna	Chindhi	Kandha	Restadhar
Seri	Seri	Nanj	Nanj
Seri	Richhni	Pathrevi	Pathrevi
Seri	Gowalpur	Gowalpur	Khamanu
Seri	Gowalpur	Teban	Kotlu
Seri	Gowalpur		Firnoo
Seri	Gowalpur	Sarhan	Kotlu
Seri	Gowalpur		Porla
Magroo	Magroo	Serimangath	Thua

(Source: Office record DFO Karsog)

7.6 FUTURE SCOPE

7.6.1 There is tremendous scope for the JFM activities in the division. All the forests allotted to the plantation and protection working circles are suitable/ potential sites for afforestation, soil conservation, grassland improvement, NTFP development besides other forests.

7.6.2 IDENTIFICATION OF JFM AREAS The degraded forest areas as well as common village land located in the vicinity of the villages are potential sites for JFM implementation. The deficiencies and strengths of these areas with regard to soil condition, water availability, grazing pressure, fuel wood production and requirements need to be understood. While touring the division, the following Panchayats, beats have been identified and are recommended for adopting JFM approach in future. The list is indicative only and the DFO is at liberty to include or exclude any area while implementing the JFM approach.

7.6.3 NON TIMBER FOREST PRODUCE JFM can play an important role in collection, marketing and propagation of NTFPs. Many villagers are dependent on the collection of NTFP to sustain their livelihood. They usually collect various medicinal herbs and sell it to the middleman who further sells in the market. The various medicinal herbs that are found or can be introduced in the tract, their method of cultivation, collection, harvesting have been discussed in Chapter V.

Table 6.3 Potential Panchayats for JFMCs

Range	Potential Panchayats	Potential Beats
Pangna	Bindla, Surahi, Bhalindi,	Thalli, Talehan, Alsindhi, Bhalindi
Karsog	Mehndi, Parlog,	Parlog, Mahunag, Mehendi,
	Satyola, Banthal, Kharkan	Dopha
Seri	Nanj, Shaot, Teban, Sarahan	Niharinal, Nanj, Kotlu, Sarahan, Teban
Magroo	Baryogi, Chhatri, Galu	Chaura, Serimangarh

7.7 POTENTIAL ACTIVITIES OF JFM COMMITTEES The JFM/PFM committees are the future agencies of forest development, conservation and expansion. The potential activities to be executed through JFMCs can be:-

- Afforestation activity (both departmental and MNREGS)
- Soil & water conservation through treatment of macro and micro watersheds in a catchment.
- Recharging of water bodies like boulders, ponds and underground water.
- Minor construction works of road, paths, and buildings.
- Awareness programme for forest protection, fire protection, propagation of medicinal herbs on a larger scale
- Livelihood options like bee keeping, mushroom cultivation, vermicomposting, cutting & pruning etc. through effective training.
- Collection, value addition and marketing of NTFP.

7.8 MODE OF WORKING Traditionally Forest Department has been involved in protection of forests and the concept of involving people in forest management is relatively recent in Forest Department. Forest Department especially Forest Guards who have more regular and direct interaction with people have to adopt 'carrot and stick policy' which is not always easy. Thus it is desirable to involve local CBOs, NGOs etc. in implementation of programmes involving 'people'. Forest staff is not imparted specialized training on participatory management of natural resources, which is vital for success of any people centric programme. To start with the mode of working could be as follows which will further evolve with time:

1) 'USER GROUPS': Whenever a plantation is raised or a water harvesting structure is constructed, it must be in consultation with local people, essentially with their end user. Such people should be constituted into User Groups, who will maintain assets, use them and if need be extend them. Thus Forest Department will be not only relieved of its function of monitoring each and every small plantation/

structure but will also be in a better position to connect with people. Such user groups will be registered and will have an account. Thus the budget received for plantation/ WHS etc can be directly transferred to their account. However, FD will monitor the quality of work and give technical guidance. Plants will be provided from departmental nurseries.

ii) **Vermicomposting** : In departmental nurseries a large amount of vermicompost is required (approximately to the extent of 500 tons for 0.5 ha nursery) and this demand is difficult to meet with departmentally. Thus training may be imparted to local people preferably to women on vermicomposting (without construction of cemented structures as discussed in Chapter II, Part II) and the department can give them buy back assurance. This will give a livelihood option to local people.

CHAPTER- VIII

WILD LIFE MANAGEMENT (OVERLAPPING) WORKING CIRCLE

8.1 GENERAL CONSTITUTION This Working Circle is constituted for emphasizing the necessity of conservation of wildlife and collection of information for better management of wild life. The whole tract has a variety of wild animals and birds since the forests are distributed from low elevation to the high snow bound areas. Therefore, this working circle overlaps all other working circles. There is the Shikari Wildlife Sanctuary in the Karsog Forest Division which is administered by the Divisional Forest Officer Wildlife at Kullu. After proposed rationalization, area of the Sanctuary shall reduce from 213.51 Sq km to only 30 Sq km.

8.2. IMPORTANCE OF WILDLIFE The Karsog Forest Division is located in the interior parts of Mandi district with species assemblage of flora and fauna representative of front ranges of Western Himalayas. The monsoon-affected forests and alpine meadows of the Himalayan front ranges support a unique biota comprised of many distinct altitude-sensitive ecosystems and are home to many plants and animals. The Western Himalayas are considered an endemic bird area (EBA) by Birdlife International, supporting many restricted-range species, as well as a Conservation International Biodiversity Hotspot. This region as a whole has come under enormous pressure from human activities, both from the ongoing practice of traditional livelihoods, such as seasonal grazing, hunting and the collection of medicinal plants, as well as more recent developments such as the farming of temperate cash crops, commercial forestry, tourism and hydro-electric power development.

SHIKARI DEVI WILDLIFE SANCTUARY

In order to preserve and conserve the wild life in the tract, Govt. of HP has notified SHIKARIDEVI sanctuary vide No. 5-11/70-SF dated 27.3.74 extending over an area of 71 sq Km. The forests of Karsog Division transferred to Shikaridevi sanctuary are given in Table 7.1. Now the sanctuary is being reorganized so as to exclude habitations from the sanctuary and add more uninhabited forest areas to it. Most of the rationalized area of the Shikari Devi WL Sanctuary will fall in Gohar Forest Division (about 24 sq km). Remaining 5 sq km will be in Karsog WL Division.

8.3 DISTRIBUTION OF WILDLIFE The distribution of wild life has been described in detail in Chapter IIB of Part-I of the plan.

8.4 SPECIAL OBJECTS OF MANAGEMENT

The primary goal of management of wildlife in the Karsog Forest Division is to conduct wildlife surveys and mitigate human wildlife conflicts.

In order to achieve this goal, it is imperative to integrate the functions at two fronts, i.e.

- A. Working with the local communities to reduce their dependencies on the forests to minimize human-wildlife conflict and
 - B. Interventions to manage, monitor and protect wildlife.
- A. Working with the local communities to reduce their dependencies on the forests to minimize human-wildlife conflict**
- i. Help resolve man-animal conflict with emphasis on social and environmental justice for the poor people living in the Karsog Forest Division.
 - ii. Facilitate organizing of community based organizations, user groups of rural poor, preferably with strong linkages to the Panchayats. Establish the wildlife conservation efforts at Panchayat level through the consultative process.

B. Interventions to manage, monitor and protect wildlife

- i. Maintain and protect the natural vegetation communities (remove exotics and Invasive Alien Species), populations of large ungulates (with emphasis on Sambhar, Ghoral) and pheasants.
- ii. Provide facilities and opportunities in natural areas for purposes of formal and informal education, research and the study
- iii. Protect (with the consent of the local community) the cultural, historic sites such as Sacred Groves for research purposes as elements of the cultural heritage of the region.

8.5 MANAGEMENT STRATEGY

The strategic approach of wildlife protection/conservation in the Karsog Forest Division aims at recognizing the fact that the wildlife conservation is possible only through active support of the local community. There is a need to gain a more informed understanding of the different stakeholder groups and the major influences that shape them.

Accordingly, management prescriptions for the objectives mentioned above are given as following:

8.5.1 Working with the local communities to reduce their dependencies on the forests to minimize human-wildlife conflict

- i) Help resolve man-animal conflict with emphasis on social and environmental justice for the poor people living in the Karsog Forest Division.
- ii) The officials of Karsog Forest Division should provide for resolving the man-animal conflict with emphasis on social and environmental backdrop of the poor people living close to the forests, and development of a competence based training programme for the Karsog Forest Division staff and the local community.

8.5.1.1 Crop Depredation Historically, the villagers have been hunting the large bodied animals for meat and trophy (crest of a monal, meat and horns of Ghoral, Sambhar) in the area which is now Shikari Devi WL Sanctuary and forests of Karsog Forest Division. This was also a strategy to check the wild animals populations from killing the livestock or damaging the crops.

About fifteen years back, the state govt. imposed ban on the hunting of wild animals (1986). As a result of this ban the number of wild animals has been increasing in the area. Most of the villagers try to save their crops by putting up snares, traps, etc. This being an illegal activity, the resource-deficient villagers need to resort to labour intensive measures of crop protection, which include burning fire at night, beating drums, or putting up scarecrows in the fields. Such actions mostly result in disproportionate cost of raising crops by the poor and marginal villagers.

The villagers in Karsog Forest Division raise wheat, maize, barley, potato, rajmash, peas, and garlic. The time of growing these crops mostly depends on the altitude of the area. The wheat in higher altitude is harvested in May/June while at lower altitude it is harvested in March/April. The wild animals such as Ghoral, monkey, and paraqueets do the maximum damage to these crops. Porcupine is known to dig out the potato, while black bear raids the maize crop. The paraqueets feed mostly on fruits, while monkey and rats go for any crop. There are legal provisions to annihilate the small-bodied animals such as rats and many insects; the big-bodied animals are protected under the various Schedules of the Wildlife Protection Act. In this scenario the poor farmer living on the edge of the forest is faced with the problems of the crop depredation as well as the legal action in the event of his killing a wild animal.

The villagers often use retaliatory measures of harming/killing the wild animals of which there is hardly any record or report. The depredation enhances dramatically when there is an increase in the number of livestock as well as the area under cultivation close to the forests; when there is a decline in the availability of the natural food; when there is an increase in the number of large wild herbivores. In all these circumstances, the crop depredation or killings of livestock gets escalated exponentially.

8.5.1.2 LIVESTOCK DEPREDAION Due to increasing population pressures and consequent degradation of forest habitat, the wild animals such as Himalayan Black Bear or leopards have become "refugees" in

their own habitats. At the same time the rhesus macaque and langurs are able to adapt themselves to the human presence. It is a well-known fact that the wild animals avoid areas with disturbances. This means that when their habitat gets further restricted as a result, they venture into the human habitations. The wild animals also intrude into agriculture fields as the crops raised are more palatable, and they are located in easy locations. In addition to this the poor and marginal farmers in the villages keep livestock such as sheep and goats, which usually survive on grazing on the forest and pasture land. For wild animals, such domestic livestock are very easy prey.

8.5.1.3 TIMING OF PREDATION BY THE WILDLIFE The timing of the predations by the wild animals is very crucial to understand human-animal conflict. The leopard killings are mostly in July to September; the H. Black Bear made killings in almost same months. The wild carnivores remain active in the months of June to October when the livestock is in the forests/pastures of the forests.

8.5.1.4 COMPENSATION Human-wildlife conflicts have assumed different dimensions in terms of human casualties, livestock killings and agricultural and horticultural crop raiding at the interface of wildlife habitats and human use dominated landscape. Such a situation affects the diverse sections of the village society, differently. Those who live closer to the forest areas and away from the road-head are mostly poor and bear most of the burnt of the human-wildlife conflict.

The Himachal Pradesh Forest Department has a provision of providing compensation to the person whose sheep, goats or cattle have been killed by the wild animals. A close look at the Department's rules reveals their inadequacy with reference to the damage done by the wild animals in the field. The rules provide for postmortem report, and verification by the high authority in the villages such as Pradhan/up-Pradhan of Gram Panchayat/ and a forest official, not less than the rank of a Forest Ranger. For a poor person, it is difficult to approach these high authorities, as a result we find that very few cases of damage by the wild animals are reported for the claim of compensation. Moreover, the rules have been framed for the damage of domestic animals done by the big-bodied animals, mostly the carnivores. This also reflects the inadequacy as most of the damage done relates to the crops and horticulture trees for which there is no provision of compensation.

Man-animal interface filter down to the base of the pyramid where the people are most directly affected by the depletion of physical resources, least able to fend off the ill-effects of man-animal conflict, and ill-equipped to take remedial action. Providing relief or compensation for damage to the crops and animals of the poor populations living close to the forests should become the priority for the Forest Officers.

Some of the suggested measures for the reduction in the conflict between man and animals:

PROACTIVE

- The villagers are already using deterrents such as making sounds at night, beating drums, lighting a fire, or putting up a scarecrow in their fields. The alternative access to crop fields can be of some use.
- The Forest Officials need to take some proactive measures such as proper identification of the rogue animals, their tracking, and if needed "culling" or elimination.
- Feasibility of setting up of cages/radio collaring of the problem animals may be explored. The Forest Officials and the local villagers need to put up a combined defense against such animals.
- There is a need of regular census of ungulates and carnivores in the forests. The prey-predator relationship needs to be studied and worked out for the mountain animals along with the carrying capacity of their habitats.
- The issue of crop insurance has a lot of promise to resolve the man-animal conflict in the Karsoo Forest Division. Possibility of paying a portion of the insurance premium by the Forests Officials for poor villagers should be explored.

REACTIVE

However, once the damage is done, the provisions of compensation should be an easy and straightforward process so that the poor villagers are able to receive the compensation easily and without delay. It is also important that the forest department functionaries ensure that the poor people not only attend Panchayat or Gram Sabha meetings in good number but also participate actively so that their voice is heard. Proper checks and balances can be evolved and the govt. can place the funds for compensation at the disposal of a Panchayat. The removal of problem animals may be considered in case such animals have been properly identified.

In fact, the main solutions lie in awareness about the large-bodied animals, their ecology and behaviour; at the same time recognition of the fact that these are the poor villagers showing tolerance to the existence to the crop damaging bear or livestock lifting Leopard. This enhances the limits of human existence with the large carnivores. The future of man-animal conflict resolution lies as much in the involvement of the local communities in the wildlife habitat management, as in the measure that are taken to leave the wild habitats to the wild herbivores.

8.5.2 DEALING WITH LEOPARDS IN KARSOG FOREST DIVISION The Divisional Forest Officer shall follow following criteria to deal with capture of naturally free ranging leopards and eliminating man eaters.

a) Mere sighting of leopards in the vicinity of a village or in inhabited area and ensuing political pressure, media attention does not qualify for its capture/elimination.

b) When first human killing is reported, the concerned Wildlife Warden must study the reasons on these lines: Whether it was a chance encounter? Whether outright aggressiveness? Was it a female leopard merely protective of her cubs? Was the leopard injured and unable to hunt? Whether the victim entered the forest to cut grass or collect firewood or otherwise and got killed when mistaken by leopard for its prey? How many times the leopard had mauled a man or killed a livestock in the past?

c) The Wildlife Warden should remember the underlying principle before declaring a leopard man-eater unless they actually consume the body of human killed. Jim Corbett, a renowned naturalist who had been dealing with man-eaters *pointed out that every human-killer is not a man-eater in the making.*

d) Shooting of leopards through identified shooters shall be considered only as a last resort once it is confirmed to be a man-eater after due observations and studies. Distinction between purposeful and accidental attack be made carefully. Purposeful attacks should always be dealt with immediately and the animal should be removed from the wild as soon as possible. In case of accidental attacks, the situation should be monitored.

e) No leopard captured as man-eater shall be released back into the wild and also should not be placed on display in a zoo. However, it can be kept in off-display facility in a zoo or rescue centre.

Facilitate organizing of community based organizations, user groups of rural poor, preferably with strong linkages to the Panchayats. Establish the wildlife conservation efforts at Panchayat level through the consultative process.

Community organization in small user groups is key to stakeholder participation in the wildlife protection/conservation. The poor people in the interior villages of Karsog Forest Division may be organized in micro financing groups; herb collectors may form their own groups and likewise. Such organized groups may be involved in asset building and their marketing. The process of group formation and asset building is recommended as future strategy. Vermicomposting, apricot oil production, hemp produce, ecotourism, street theatre and wage labour are some of the options that have been tried successfully elsewhere in HPFD.

8.5.3 INTERVENTIONS TO MANAGE, MONITOR AND PROTECT THE NATURAL HABITATS AND RESOURCES.

1. Maintain and protect the natural vegetation communities (remove exotics and Invasive Alien Species), populations of large ungulates (with emphasis on Sambhar, Ghoral) and pheasants.

One of the important indicators of the success of management practices for wildlife protection is the abundance of animals (pheasants, large mammals). The inventories of mammals, birds, reptiles, amphibians, annelids, and insects (mostly butterflies and moths) may be prepared with the help of experts in HPFD or reputed institutions. Similarly the angiosperms, Gymnosperms, ferns, bryophytes, mosses and lichens need to be documented.

- Services of institutions such as Wildlife Institute of India or NGOs of repute may be hired to train frontline staff including the Forest Guards, Forest Workers and wildlife watchers to measure abundance of species: absent, rare, occasional, common and abundant (first level).
- Conduct proper field trainings for the Forest Guards, Forest Workers and wildlife watchers for the next/second level of information collection on evidence of the animal's presence, such as tracks, droppings, calls, nests, feeding signs, etc.
- The advanced or third level of information collection is by determining the trends or indices of population growth and the actual population numbers (such as the density of Ghoral or Sambhar)

Control of Poaching and Illegal Trade in Wild animal and plant species is needed with the help of enforcement measures. Intelligence gathering needs to be undertaken by the forest officials in this regard.

2. Provide facilities and opportunities in natural areas for purposes of formal and informal education, research and the study

The training need analysis should clearly bring out all that is required (elements of competence) to help the target group to perform competently in the given area of the job/role. For agreed elements of competence it will be required that necessary performance criteria are generated which necessarily means that unless distinct performance criteria are developed for agreed elements of competences, there would always be an ambiguity with respect to what training be imparted to trainees. Once the performance criteria have been laid out, the mode of assessment becomes important. The assessment is about generating and collecting evidences that tell whether or not the trainee is able to perform as per the laid out standards.

3. Protect (with the consent of the local community) the cultural, historic sites such as Sacred Groves for research purposes as elements of the cultural heritage of the region.

The Western Himalayas are home for some of the globe's most intact and colourful indigenous and traditional cultures. The people of Karsog Forest Division are manifesting their traditional lifestyle in form of Sacred Groves (*Devban* or forests of Gods). These areas show how local villagers combine their beliefs and religion with natural resource management and their. The sacred groves have been instrumental in biodiversity conservation. They have a religious connotation and mostly located away from each other. Each Sacred Grove has its own devta (deity) mostly related to Hindu pantheon. A very distinct characteristic of these devtas are that they are treated as a corporal entity by the villagers. The Devtas own property in form of a forest which is locally known as *Devban*. Most of the *Devbans* are treated as sacred. Enumeration of such sacred groves must be given top priority in this Division. Communities must be encouraged to maintain these forests in perpetuity.

8.6 HUMAN RESOURCE DEVELOPMENT AND PERSONNEL PLANNING: - The challenging wildlife conservation requires committed wildlife managers who possess scientific competence and social awareness aided by communication.

8.7 SCIENTIFIC STUDY, RESEARCH AND DATA COLLECTION In order to avoid or reduce man-animal conflicts, the scientific study, data collection and possible local or expert aided solutions are required. The wildlife damage related problems must be addressed on priority. The focus issues are :

8.7.1 MONKEY – HUMAN INTERACTION

Population surveys are of immense value in resolving man-animal conflict. For developing a conservation plan for a species such as monkey or leopard we need to answer several basic questions. Consider for example the rhesus monkey, the common red-faced monkey of India. How many rhesus monkeys are in Karsog Forest Division? Where do they mostly live? What do they eat? What is happening to the habitat of these monkeys? How do rhesus monkeys interact with the human beings?

8.7.1.1 MONKEY SURVEYS

- Initially we need to identify different segments in the Core Area (places of monkey concentration in the Karsog Forest Division) where the survey will be conducted. In these segments, various vantage points will be identified to closely observe the monkeys without interference. If a particular segment is quite big this may be further sub-segmented under a person/forest guard/observer to observe the monkeys from a vantage observation point, in the morning between 7 and 8 AM when monkeys come out to forage. This should be ensured that monkey in line-of-sight of the observer are counted and there is no repetition of count of the same monkeys by the other observers.
- Location and identification of these observation points should be noted/plotted on a map of the area with number of monkey recorded. Data Sheets will be prepared on the performa given below. Information regarding age and sex of the monkeys, and food provisioning and garbage disposal at surveyed sites need to be kept.
- The survey/population estimation is to be conducted in such a manner that all the monkeys in every observer's domain are counted in a period of half an hour to one hour depending on size of the segment. The period of counting should be such that the level of error of number is avoided due to migration of the animals from one observation point to another.
- The monkey survey is to be conducted by involving various NGOs, professionals and other similar institutions involved with monkeys. Perhaps involvement of Eco-clubs, schools/colleges in the vicinity of identified locations will be also a most desirable component
- The whole exercise is to be repeated during winter (January, March), Summer (May, July) and Autumn (September, November) at an interval of two months to know the standard variation and error if any. Emphasis on recruitment i.e. young ones is to be given during the 1 hour count every six months.
- Once the results are obtained, the methodology may be improved and then approved to be replicated in different areas of the state to arrive at a figure of population of monkeys.
- A basic website/blog will be created to have an online access to the information to a wide user/stakeholder groups
- The lessons from this exercise will be integrated with the standard wild life surveys/population estimations of the Wildlife Wing of HPFD.

8.7.2 PHEASANTS

The Karsog Forest Division has Monal *Lophophorus impejanus*, Kaleej *Lophura leucomelana*, Cheer *Catreus wallichii*, Koklas *Pucrasia macroplopha*. The Red Junglefowl *Gallus gallus murghi*, and Peafowl *Pavo cristatus* can also be seen in the lower areas. The elders tell that Western Tragopan used to occur in the high reaches of the Karsog Forest Division. These spectacular birds are known through their fragmented surveys done so far in different regions. The non-availability of information from other areas is perhaps for lack of attention by the forest officials. A species like Western Tragopan occurs in inaccessible areas which would make its survey rather difficult. Obtaining access to these areas make the job of their survey difficult. Similarly Cheer

Pheasant are quite common in their grassland habitat, though a serious and systematic effort to collect baseline information about them is lacking.

8.7.2.1 PHEASANT CENSUS The following method is advised for Karsog staff observe/record their pheasants observations, systematically.

8.7.2.2 CALL COUNT This method can be used for most of the pheasants which call during morning hours in their breeding season. The counts can be made from a strategic point in the habitat of the particular pheasant. The number obtained can be doubled for obtaining the estimate of breeding population (e.g., one male; one female). The following factors will influence observations

1. SEASON OF THE YEAR

The counts of calling males assumes that all the existing males in the area will call every morning. In the western Himalayas, the calling behavior of three species of pheasants during various months of the year is as following:

Cheer	:	January to May; September to December
Koklas	:	January to June; September to December
Western Tragopan	:	April to June

2. TIME OF DAY

Most Koklas observations are made during a short period of early morning. The males usually call at dawn for 15 - 20 minutes. The Western Tragopan starts its song in early morning and continues intermittently throughout the day during breeding period. Cheer pheasants call in chorus at dusk and dawn.

3. POSITION OF CENSUS POINT

Surveys will be more successful if a strategic point is selected in the habitat of pheasant. This site should be identified on the day before the survey/census. The census point should allow the observer to hear the birds over as wide an area as possible. A point on a ridge usually allows the observer to listen to the pheasant calls on both the sides. It is possible to hear all the calling birds within a radius of 400 meters from the ridge, however, this can be reduced by the intervening ridges.

4. POSITION OF OBSERVERS

When there are multiple observers taking part in census operation of pheasants, they must be positioned at an interval of about 500m to 600m. All the observers must have visited their observation points on the previous evening of the census day. They should be in position well before dawn so that all the calling pheasants are counted.

5. RECORDING OF OBSERVATIONS

The observer should have good knowledge of identification of the calls of pheasants which s/he is likely to encounter in the field. The observers should practice counting the involved numbers of calling birds. An approximate range of each call and the direction of the call, must be anticipated. A compass can be used by the observer.

It is best to have similar formats for all the observers. These formats will have following details:

- Date of observation
- Time of start and end of observations
- Altitude of the observation point
- Major vegetation types within the sample area.
- Weather conditions on the day of observation including wind speed, precipitation, cloud cover, temperature etc.
- Marking of observation points on a large scale map of the area (marking of a conspicuous point such as a rock or a tree which can be located for subsequent census in the same area.)

8.8 FIELD CRAFT - HOW TO OBSERVE AND UNDERSTAND THE JUNGLE

(Adopted from an account by Dr. AIT Johnsingh of WII)

When guards/officers/others venture into the forest they should be equipped with certain indispensable articles: a small sharp knife, a compass, a lighter or a match-box (covered in a water-proof polythene bag), leech-proof socks (if it is a leech country), a small rope, rain-coat (if it is in the rainy season or in an area of high rainfall), a good pair of field shoes and field dress (olive green or khaki), which will merge with the background.

Animals such as Himalayan Black Bear, Brown Bear and Leopard can move much faster than humans. At the first close encounter they may snort, roar or scream. These sounds when heard in the setting of the jungle can frighten us terribly and only experienced lucky persons who have survived these encounters will be able to tell us how weak and wobbly their knees became after the first nerve-wracking encounter. We should not think that we can easily outrun and escape these animals which, as said earlier, are much faster than we are. Also the terrain on which we will have to run- with slope, many holes, sharp wooden stumps, tangle of creepers, dense tall grass, logs, and rocks- is not an ideal place to outrun these beasts which run with four legs while we have only two teetering legs.

Therefore, go with caution in a forest where there are dangerous animals. Please follow the dictum "I should see these animals before they see me and should hear them before they hear me". Do not talk unnecessarily. Human voice can be heard, even from a long distance, by the jungle animals, in the "silence" of the forest. If there is a need to communicate, better whisper and signal. The objective of our visit to the forest is to see as many animals as possible and observe them. This can be accomplished only when we move as quietly as possible. We spend a fraction of our life looking for and observing animals in the forests. During this brief period, we should be as quiet as possible and observant of the events that happen around us. Silence is an essential part of jungle-craft.

In the jungle, smokers should become non-smokers. This is necessary for several reasons: by not smoking (i) the animals will not be alerted by the smell of the smoke, (ii) we avoid setting fire to the jungle, (iii) we show the utmost reverence to the jungle which we have resolutely determined to conserve. When we walk along a forest trail, particularly when the wind carries our smell down the train, we should proceed with utmost caution. This is because animals like bear (particularly those which have had encounters with people earlier and therefore are not shy of people) can smell your approach and then either slink away or wait for your arrival. When the wind carries your smell down the path, walk slowly and silently, stop for a few seconds every 50-100 m, listen for sounds and then proceed. Most animals like bear make some sound and indicate their presence. All these can be heard if you walk silently.

FOREST RULES

- Never approach dangerous animals like black bear (particularly with the cubs) very close when they are in a flat terrain. With caution it is possible to approach them in a hilly or rocky terrain where the chances of escaping these animals are much greater.
- If there is a fresh blood trail on the path one should proceed carefully. A wounded animal (e.g. a bear wounded by a poacher) may be ahead of us and should turn aggressive if approached very close. The same is applicable to other potentially dangerous animals like the leopard.
- A leopard carrying its fresh kill may cause the fresh blood trail. Approaching a leopard on its fresh kill could be dangerous.
- While on a blood trail if there are alarm calls of monkeys, and birds ahead of us it could be an indication of the predator going ahead. Go with caution.
- If you are returning to your camp alone on foot late in the evening and if you see a dangerous animal (e.g. a bear with cubs), stop immediately. Stay at a safe distance. Hide behind a tree or rock, observe the animal and then by talking, by tapping on the tree with a stone or wood, or

even by allowing the wind to carry your smell let the animal know that a human being is somewhere in the vicinity. The presence of the unseen human being makes most animals nervous and they make a slow but steady retreat away from your direction. Who will enter in to a patch of tall dense grass where you hear the hissing of a cobra but don't see the snake? We will move away from the area. The great naturalist Dr. George B. Schaller has successfully used the above technique of remaining unseen and scaring away the Himalayan black bears in Dachigam National Park, Kashmir, India.

- Do not stumble through the forest without carefully looking at the path.
- Climbing a steep hill slope by clinging on to trees, climbers and rocks. Particularly in a tropical habitat, needs to be done with great caution. Before placing the palms, which like the feet are not protected, to hold on to something, watch carefully. There could be a scorpion, a nettle plant or a wasp nest nearby.
- People often fail to differentiate between chasing and charging by a bear. Charging may stop with a forward aggressive rush for 20-50 m but chasing can go much beyond that even for a few hundred meters which could be very dangerous. When chased by an animal throw a conspicuous object (e.g. a white hand-kerchief) on a bush and run down a slope or run zig-zagging among the bushes. Put up as much distance as possible between you and animal. While chased, do not crouch inside a bush hopping to hide.
- When chased by an animal, never try to climb a tree. A jungle- living tribal can do that but not a guard if he is recruited from a town or a Manager who is not used to tree-climbing. The fear would drain all the energy needed to climb.
- Sometimes you will be forced to walk through the forest at night. If you are in a group, stay together. As you walk along make some noise (talk, sing, or tap on a tree or rock at regular intervals). Don't surprise animals by walking in to them. Tap the ground periodically, as you walk along, either with your foot or a stick. The vibrations will keep the snakes away and most animals will also move away when they are warned from a distance.

Practicals Each guard/officer should be persuaded to tell an interesting experience he has had in the jungle during his career.

Guidelines to catch and transport Monkeys:

1. While capturing monkeys it has to be ensured that at least 80% of the troupe is captured. Capturing of the monkeys will be done under the supervision of Wildlife/Forest officials as it has been observed that small number of monkeys is being captured which is leading to fragmentation of the troupes. As a result there is multi-troupe formation which is aggravating monkey menace.
2. After the capture of the monkeys, the integrity of the captured troupe is to be maintained. Monkeys of one troupe should be kept in one independent cage. This will ensure less conflict and injuries among the captured population.
3. A proper record of the monkeys captured from a particular area is to be maintained. A challan is to be prepared which needs to be signed by the designated/supervising Wildlife/Forest official and countersigned by a representative of Gram Panchayat or local body both while capturing and release of monkeys. This is already in practice in MC Shimla since the inception of Monkey Sterilization Programme.
4. It has to be ensured that monkeys are transported to the Monkey Sterilization Facility at the earliest so that the stress to these animals is minimized.
5. The captured animals are to be fed at least thrice a day and they have to be provided with adequate water frequently.
6. It is mandatory for every capturing party to carry one First Aid kit. In case some injured monkey is captured or injured subsequently, first aid should be provided and the animal should be segregated immediately.
7. Care should be taken that no infant is separated from its mother.
8. Care should be taken to protect the captured animals from extreme weather.
9. Animals should not be transported late during the night hours or other stressful hours of the day.

CHAPTER IX

PASTURE AND GRASSLANDS IMPROVEMENT (OVERLAPPING) WORKING CIRCLE

9.1 GENERAL CONSTITUTION As grazing is exercised in all the forests, the main thrust would be to improve fodder availability and improve local grazing grounds; however, no tampering will be done with high altitude pasture land. This working circle overlaps all other working circles.

9.2 SPECIAL OBJECTS OF MANAGEMENT These are as under:-

1. To improve fodder availability in the tract.
2. To regulate grazing on rotational basis giving due consideration to the carrying capacity.
3. To increase the leaf biomass production by raising fodder plantations in low lying areas.
4. To encourage stall feeding and make efforts to replace local cattle with improved breed cattle.

9.3 TYPES OF GRAZIERS Migratory graziers viz. Gaddi and Gujjars visit the forests of the division enroute to Shikaridevi sanctuary and other parts of the state. The resident tribal population is less than 0.5 % but many transhumants (Gaddis and Gujjars) pass through the tract all through the year.

9.4 REGULATION OF GRAZING There are high lying and low lying forests subject to unrestricted grazing. The low lying forest areas are eroded due to excessive grazing. Erosion and land slips are common. So it is necessary to make strenuous, sincere and constant efforts to overcome this problem successfully. To determine the incidences of grazing, the standard of equivalent units adopted in the earlier plan is suggested which is as under:-

Table 9.1 Conversion of animal numbers to animal unit

Sheep	1
Goat	1.5
Donkey	3
Cattle	4
Mule	5
Buffalo	6

9.4.1 CATTLE POPULATION The cattle population of the tract as per 2007 census is as under:-

Table 9.2 Cattle Population (2007)

S.No.	Animals	Total Population
1	Sheep	16813
2	Goats	27083
3	Horses	412
4	Cattle	73311
5	Buffaloes	1822
6	Mules	595
	Total	1,20,036

(Source: Panchayat record)

9.4.2 AREA REQUIRED The grazing area of 0.5 ha per unit has been considered bare minimum in the state grazing policy. The total area required for the local grazing animals works out as under.

Table 9.3 Requirement of Grazing Ground

Animals	Number	Grazing units	Required area (ha)
Sheep	16813	16813	8406
Goats	27083	40624	20312
Horses	412	2060	1030
Cattle	73311	293244	146622
Buffaloes	1822	10932	5466
Mules	595	2975	1488
Total	1,20,036	366648	183324

9.4.3 INCIDENCE OF GRAZING Keeping in view the population of grazing animals, the forests of this division are overgrazed. Although the cattle are also grazed in the UPFs other than DPFs which are entered as charagah bila drakhtan, charagah drakhtan, ruta sarkar, bani, banjar kadim in the revenue record but still the cattle population is much more than the carrying capacity of forest lands. The incidence of grazing is not uniform all over the tract. The areas located near the habitations, along roads, paths are heavily grazed whereas the areas in the interior of valleys are comparatively less burdened with grazing.

9.5 IMPROVEMENT OF PASTURES AND GRASSLANDS The production of pastures can be significantly improved through scientific management such as closure for a specific period, rotational grazing, soil conservation works etc. these are briefly described as below:-

9.5.1 CLOSURE The grasslands to be improved shall be closed effectively against grazing for the period not less than 10 years depending on the local conditions.

9.5.2 SILVIPASTORAL MODEL OF AGROFORESTRY - In the hills, the tree species like *Albizia*, *Morus*, *Grewia*, *Olea*, *Quercus* yield good fodder. The useful combination of grasses and fodder trees should be adopted as per the locality factors e.g. *Setaria anceps* has shown good results under shaded conditions of *Albizia stipulata*. Such species should be raised in nursery and should be distributed to people for planting them on private lands as well.

9.5.3 ROTATIONAL GRAZING In view of the depleting grass cover, it becomes imperative to close part of the pastures and grazing grounds. Minimum one third of a pasture area should be closed to grazing for two seasons and opened in the third season when it should have recouped to a considerable extent. In this way, the rotational closure should be imposed.

9.5.4 REMOVAL OF INVASIVE SPECIES Invasive species like Lantana, Parthenium have also resulted in shrinkage of effective grazing grounds. Wherever removal of invasive species is taken up they should preferably be planted with fodder grasses so that they not only cover the area fast but also supply fodder.

9.5.5 SOIL CONSERVATION WORKS In the badly eroded grasslands at lower elevations, soil conservation works should be complimented with grass planting. Grass species cover the ground fast and thus protect it against splash action of rain.

9.6 REGISTRATION OF GRAZIERS It implies maintenance of permanent record regarding the number of animals of Gaddies/Gujjars in a particular pasture land every year. This serves as an effective measure to control excessive grazing in the pastures.

9.7 ISSUE OF PERMITS The permits of goats, sheep and buffaloes shall be issued with utmost care. The tendency among the Gujjars to obtain permits on the basis of so called inherited rights needs consideration.

9.8 FIXATION OF ROUTES AND RAHDARI CHECK POSTS The provision of routes and check posts is basically to prevent the entry of animal units which are in excess to the permitted number. The following routes and check posts are suggested for only migratory graziers:-

Table 9.4 Recommended Rahdari Checkposts

S.N.	Particular of Route	Checkpost
1	Sunni-Tattapani-Shikaridevi	Tattapani
2	Jhungi-Jachh- Pangna	Jachh
3	Kotlu-Behna	Behna
4	Sarour-Tattapani	Sarour

The in charge of each check post shall be provided with a registration roll of each range showing the number of cattle and the name of pasture land grazed by each grazer. No new comer would be allowed.

9.9 GRAZING FEE The existing grazing fees are very less and need revision keeping in view the grazing demand and economic conditions of graziers. The following grazing fees are suggested:

Table 9.5 Recommended Grazing Fee

S.No.	Animals	Suggested Grazing fee ₹/head /season
1	Sheep	2
2	Goats	3
3	Horses	15
4	Cattle	7
5	Buffaloes	30

CHAPTER-X

FORESTLAND PROTECTION & CONSERVATION OVERLAPPING WORKING CIRCLE

10.1 GENERAL The forests are one of the natural renewable resources which play a decisive role in the economic development. It holds tremendous employment potential for the rural economy. Apart from providing raw material for various industries, forests are major source of the energy requirement in the rural areas, timber for agricultural and other constructional purpose and fodder for the huge cattle population. Above all, forests have many indirect benefits for the environmental stability through facilitating soil and moisture conservation, prevention of soil erosion, flood protection and wildlife conservation. Unfortunately, these natural renewable resources are being constantly depleted due to progressive increase in population and various developmental activities. So, the need of the hour is not only to bring more and more area under tree cover, but also to protect, preserve the existing forests from various agencies through the best scientific management strategies, participation of local populace and enforcement of strict legislation wherever becomes absolutely necessary. Hence protection & conservation of forest land becomes most important.

10.2 SPECIAL OBJECTS OF MANAGEMENT

The special objects of management are as under:-

- i) To protect & conserve the forest land from further denudation and erosion by preserving and enhancing the forest cover and by undertaking soil conservation works in a planned manner, where ever necessary.
- ii) To conserve moisture and streamline the flow of water in streams and *nalas* by protecting and enhancing vegetation cover in the watershed.
- iii) To assess the spread of invasive alien species atleast once in two years and give priority for removal in APOs.
- iii) To formulate strategy and effectively take action for controlling fire, encroachments, illicit felling etc.

10.3 METHOD OF TREATMENT The prescriptions in this chapter have been subdivided into following parts:

- i) Fire Management
- ii) Invasive Alien Species Management
- iii) Soil Moisture Conservation
- iv) Encroachments

10.3.1 FIRE MANAGEMENT: Khosla Committee report on fire control in forest areas recommends following measures;

MEASURES OF PREVENTION AND CONTROL OF FIRES:

- i) Increased vigilance is necessary by appointment of an adequate number of fire watchers during the month of April, May and June as used to be the practice earlier.
- ii) Clearing and maintenance of fire lines which has been virtually abandoned due to a shortage of funds must be carried out regularly.

- iii) The practice of controlled burning to deal with the accumulation of combustible pine needles on the forest floor which has been abandoned as a result of shortage of funds has to be re-introduced.
- iv) Proper forest management of silvicultural practices particularly in pine forest which have been abandoned as a result of the imposition of the ban on the green felling must be re-introduced to ensure proper health and protection of the forest. For this purpose, ban on felling of pine should immediately be revoked and the forests worked as per working plans.
- v) Efforts for finding alternative user for pine needles should be supported by the government so as to demonstrate their economic viability. This will help reduce the accumulation of combustible material in the forest floor.
- vi) The forest department staff should be provided with a complete communication network through wireless to enable a quick response in dealing with forest fires and also with the problems of illicit felling.
- vii) The communication network has to be supported with improved mobility to enable quick transport of men and materials from one area to another. For this at least one additional jeep may be provided at the Divisional level to the DFO in the Hill areas.
- viii) Where villagers do not come to assist the forest department in extinguishing forest fires their rights should be curtailed if not forfeited.
- ix) The State Government must ensure that adequate funds are provided to the forest department for the proper care, maintenance and protection of the forest. The steady reduction in such funds has seriously affected the activities of the Forest Department. These funds should be provided through a centrally sponsored schemes for this purpose.

A LONG TERM STRATEGY:

- i) Existing forest management policies have to change to a more participative pattern of forest management in which village communities are more deeply involved.
- ii) The Civil Forests in Uttar Pradesh which today are no one's responsibility should be converted into Panchayat Forests as rapidly as possible and placed under the supervision of the Forest Department.
- iii) The forest panchayat rules should be amended to ensue that the villages have more effective control over their forest and derive tangible benefits from them.
- iv) Mahila Mandals should be actively promoted and supported by the Forest Department as an agency for the care and protection of the forests.
- v) Integrated forestry development programmes should be adopted as the principal pattern of land related development programmes in the hills.
- vi) The genuine need of villagers for timber must be met. Additional quantities over and above their rights can be supplied to them as PD subject to a careful verification of the genuineness of their requirements. The additional timber required for the purpose can easily be met from a removal of the ban on green fellings in pine forests.
- vii) The forest department should be strengthened to enable it to discharge its traditional functions in the reserved forests more effectively. Beat sizes should be reduced, vehicles and wireless sets provided and personnel management improved.
- viii) Development responsibilities through adoption of integrated multi disciplinary programmes covering forestry, animal husbandry, soil conservation, fodder development, drinking water and fuel saving should be assigned to the Forest Department.

Out of the total forest area of 33814.06 ha in Karsog Forest Division 8899.32ha (26%) was under Chil Working circle in the previous plan. The list of pine forests, fire lines, bridle paths is given as AnnexureVII. It is estimated that about one to three tons needles fall per hectare per season depending on the density of the forest. Thus taking an average of 1.5 tons per ha the volume of pine needles that fall each season is estimated to be 13350 tons. Dry pine needles are a fire hazard to the forest. Every year thousands of hectares of forest area gets fire because of pine needle accumulation. The decomposition of pine needle is extremely slow. List of forests affected by fires in past is at AnnexureVIII which clearly indicates that Kanda, Alsindi, Tattapani, Balindi, Chindi, Mahunag, Kashoul, Kamand beats will be the main focus in addressing fire problem. The strategy for fire management will include the following:

1. CLEARING OF ROADS Accidental fires in Chil forests are caused by lit cigarettes negligently thrown by passersby. As all Chil forests have sufficient fallen needles during summers (April –June), it easily catches fire and results in forest fires most of which are restricted to ground. To address this, both sides of roads upto 10m will be cleared off the pine needles twice a fortnight. The needles thus collected will be either control burnt in presence of forest official (FG/FW) or will be made use of in making check dams/vermicompost/briquettes.

2. NEEDLE COLLECTION Another important and probably the most common reason for fires in Chil forests are the intentional fires lit by locals to get fresh flush of grass from the forests. To combat such fires following strategies may be adopted singly or in combination:

a) PARTICIPATION OF LOCAL PEOPLE Since all such fires are caused by local people especially those having cattle, thus involving these stakeholders in fire management may help. Awareness programmes combined with monetary incentives could be tried here. Fire management committees may be constituted at Panchayat level or existing /new JFMCs may be involved. The incentive for protecting 100 ha forest may be fixed as follows:

i) No fire: Rs 10,000

ii) 1 fire: Rs 5000

iii) 2 fires: Rs 2000

iv) More than 2 fires: No incentive

The area chosen for such schemes will thus save on deployment of fire watchers and the amount so saved will be used towards paying the incentive.

b) DEPLOYMENT OF FIRE WATCHERS In areas where cooperation from local people is not forthcoming or habitations too far from the forest to keep a vigil against fire, fire watchers may be deployed who will patrol the forests and alert the Rapid Response Team specially constituted at Range level during fire seasons.

c) USE OF PINE NEEDLES Another way of addressing the issue of fire is to make use of the pine needles. It could be in any form like handicrafts, fire briquettes, check dams etc.

Presently in H.P. handicrafts of Chil needles are being made by Kangra Mahila Sabha, Dharamsala and they have imparted such training to SHGs formed by MHWDP in Salooni, Chamba. After making a study of the economics of the enterprise, the same may be adopted in Karsog. However, as the exercise would involve identification of marketing channel etc, it is better to get it done through an NGO or any local Community based organization that are already into marketing of handicrafts.

Pine briquetting has also been tried in several places. This activity will not only save the forest but also help to improve seasonal livelihood of rural people. State Council for Science Technology & Environment has tried this enterprise in certain Panchayats. After making a study of the economics of the enterprise, the same may be adopted in Karsog.

Similarly pine needle check dams, *Pirule* have been made in Uttarakhand Forest Department and have also been tried in Kalatop Khajjiar Wildlife Sanctuary. The collection of needles may be executed through

JFMCs. This will result in dual advantage to JFMCs from Chil forests and will help in creating stake in Chil forests which otherwise generally being a monocrop of timber species (which means no immediate use/ access to resource) are neglected by people.

In forest compartments that are under active resin tapping, HPFDC resin workers or resin agents should get such compartments cleared of fallen pine needles atleast twice in the fire season. This condition should be built into the agreement with the Corporation at the time of handing over the forest to them. Failure to comply should attract a penal price to the Corporation

10.3.2 INVASIVE ALIEN SPECIES: STRATEGY FOR CONTROL AND REHABILITATION OF AFFECTED AREAS

INTRODUCTION: Biological invasions – one of the anthropogenically mediated ecological perturbations – are threatening native biodiversity, preventing natural ecological succession and changing the community structure and composition, besides impacting ecosystem services. *Lantana camara* is perhaps one of the most important invasive alien plant species (exotic weed) in forest ecosystems of India as also in Karsog Division. Other alien invasive plant species with significant impact on the forests of Karsog Division include *Parthenium hysterophorus*, *Eupatorium* (= *Chromolaena*) *adenophorum*, and *Ageratum conyzoides*. Whereas the incidence of *Parthenium* popularly known as 'Congress Grass' is largely restricted to degraded and newly opened drier sites along roads and forest fringes, the other three invasive alien species tend to occupy all possible vacant places even under tree canopy. Even as *Eupatorium* and *Ageratum* show a clear preference for moister locales and show gregarious occurrence, at many places these share the niche and grow in an intimate mix with *Lantana*.

A reconnaissance was made during January 2011 to map the distribution of exotic weeds in various compartments in this Division. Whereas, it was possible to record the incidence of *Lantana* fairly accurately, the area infested with the other 3 main invasive alien species could not be recorded comprehensively due to these species being still in dormant condition.

Table 10.1 Distribution of Invasive Alien Species in Karsog

Altitude (in m)	Places	Lantana	Approx. area in ha.	Parthenium	Approx. area in ha.
600-850	Katali, Tattapani, Shakra belt	Very dense	160	Very dense on gentle slopes & plains	6
850-1100	Phirnu, Parlog, Talehan & Mahota belt	Very dense on lower portion, but dense on upper fringes	587	Very dense and confined to nallas, roadsides and depressions	135
1100-1350	Kanagar, Alsindi, Surahi, Gawalpur & Kao belt	Sparse under open forest	296	Very dense on roadsides and agriculture land as well as along nallas	50
1350-1600	Pagan, Bagshar and Karsog belt	Sparse at certain pockets	212	Very dense on roadsides, ghasanies and nallas and slopes of orchards	46
1600-1850	Churag, Kelodhar, Bithan belt	-	-	Very dense on southern slopes	23
1850-2100	Jachh, Somakothi, Mahun Nag belt	-	-	Sparse and almost absent on upper fringes	9

Analysis of the table above reveals that in Karsog Division, approximately 1255 ha area is under invasion of *Lantana*, *Eupatorium* and *Ageratum*, followed by 269 ha area under *Parthenium*. It also comes out

that once the lands become degraded and infested with invasive species, these attract apathy of all the stakeholders, further strengthening the invasion process.

In the absence of any record of infestations of forests in the Division by exotic weeds prior to January, 2011, the data presented here will be taken as baseline for the proposed management purposes. It is also clear from the table above that the concentration of invasive species is more in altitudinal zone of 850-1100m comprising Kanda, Alsindi, Tattapani, Balindi, Chindi, Mahunag, Kashoul, Nihari, Kamand beats.

Strategy for rehabilitation of forests infested with these four most noxious exotic weeds is dealt in detail as under:

CORE PRINCIPLES OF THE STRATEGY

- **CONTAIN FURTHER SPREAD :** *A close watch over the spread of exotic weeds will be kept through biennial monitoring mechanism and necessary corrections in the program will be made to remove the recent infestations on priority basis.*
- **COMPLETE REHABILITATION OF INFESTED AREAS:** *It will involve shift from 'one time removal of weeds' to 'complete rehabilitation' of the treated areas by competing/ shading out exotic weeds. All noxious exotic weeds on any given area will be tackled simultaneously.*
- **RELIANCE ON ONLY MECHANICAL/MANUAL METHODS:** *In view of their environmental/ ecological concerns, the rehabilitation measures will NOT employ any Chemicals/ Biological methods of exotic weed control.*
- **NATURAL RESILIENCE OF NATIVE FLORA TO BE THE BASIS OF REHABILITATION ACTION:** *The natural regeneration of indigenous plant species on treated sites will be encouraged and facilitated to establish towards better environmental and ecological services, including fodder, fuel, water recharge, etc.*
- **NO EXOTIC SPECIES TO BE USED TO REHABILITATE TREATED SITES** *No potentially invasive exotic species – (viz. *Leucaena leucocephala*, *Prosopis juliflora*, *Jatropha curcus*, *Tecoma stans*, *Tectona grandis*, etc.) - will be used for plantation in the areas under rehabilitation, because of their deleterious effect on the native flora.*
- **REHABILITATION TO START FROM LOW INTENSITY INFESTATION AREAS AND TO PROGRESS TOWARDS AREAS WITH HEAVY INFESTATION:** *Rehabilitation activities will start from the fringes of infestation zone with lower intensity infestation and will progress towards the heavily infestation areas. This approach will (i) allow tackling larger areas with the given financial resources and result in creating quick visible impact, and (ii) help in containing further spread of exotic weeds.*
- **SELECTIVE PRIORITY REHABILITATION OF HEAVILY INFESTED CRITICAL HABITATS:** *Rehabilitation of heavily infested areas as starting point will be taken up only in limited number of carefully selected critical habitats like grazing grounds near habitations. Such sites will then act as nucleus from where rehabilitation activity will radiate to adjoining areas of high infestation.*

With the above mentioned core principles of the strategy, the approach/ plan to implement the strategy will be as under:

(a) MANAGEMENT OF LANTANA With the major focus of the management strategy on 'containing further spread', a two pronged approach, as described below, will be followed in tackling *Lantana* menace on forest lands. Table 4.2 gives spread of *Lantana* and the intensity of infestation.

Table 10.2 Lantana Infestation In Karsog

Range	Block	Beat	Name of Forests	Area (ha.)	Elevation (m)	Latitude	Longitude	Infestation %
Pangana	Tattapani	Tattapani	D 92 Sarour	61.42	826m	31°15'45.3"	77°04'3.9"	33-45%
			D 93 Thogi	52.80	798m	31°15'22.7"	77°4'41.9"	33-45%
			D 94 Tattapani	35.41	694m	31°14'59.2"	77°05'26.4"	33-45%
			D 95 Jeori	46.13	780m	31°15'1.4"	77°05'26.4"	<33%
			D 96 Sajh	27.13	1198m	31°15'58.9"	77°4'27.6"	<33%
			D 97 Seri Sarv	11.43	1331m	31°15'55.2"	77°05'56.3"	33-45%
			D 98 Kidya	140.66	732m	31°14'55.9"	77°06'24.1"	33-45%
			D 99 Braiker	27.30	665m	31°14'45.6"	77°07'43.1"	<33%
			D 100 Ghangoor	111.91	666m	31°14'23.1"	77°07'35"	33-45%
			D 101 Nando	401.50	820m	31°14'16"	77°09'3.8"	<33%
		Balindi	D 74 Perbain	1046.21	1143m	31°17'52.1"	77°04'30.7"	33-45%
			D 79 Mohuru Dhak C II	54.15	1297m	31°17'39.7"	77°07'8.7"	<33%
			D 80 Kandha	116.80	1222m	31°17'44.5"	77°06'23.3"	<33%
Seri	Seri	Nihari	D 214 Jhuanjan	528.52	786m	31°17'32.5"	77°18'1.7"	<33%
		Nihanj	D222 Pog C I to C IV	92.58	817m	31°20'15.5"	77°20'45.5"	<10%
Karsog	Mamail	Mendhi	D 200 Boh Parala	22.81				
			D 201 Agli Dhar	21.83				<33%
			D 202 Parla Dhartoo C I to C IV	104.49				<33%
			D 198 Dhanyara I	52.55	1199m	31°20'8.5"N	77°14'31.7"E	30-45%

- **APPROACH-I (FOR AREAS WITH LOW INFESTATION INTENSITY)** More than 60% of the forest areas recorded to be under *Lantana* have been infested with this exotic weed within the past 10 years and have less than 25% intensity of infestation. Under this approach, these areas will be tackled on priority basis for the reasons that (i) with the given financial resources, it would be possible to rehabilitate larger areas for creating significant impact, and (ii) further spread of this exotic weed would be contained.

The rehabilitation activities will be started from the fringes of infestation zone with low intensity infestation and will progress towards the high infestation areas. Major activities under this approach will be manual cutting of *Lantana* bushes and encouraging establishment of local species, including grasses or augmenting populations of native species through plantation.

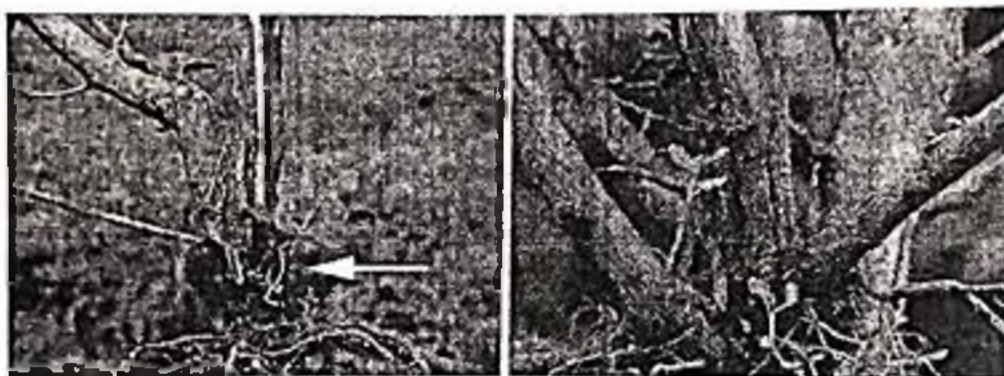
- **APPROACH-II (FOR AREAS WITH HEAVY INFESTATION)** Under this approach, critical areas under heavy infestation, especially the grazing grounds near habitations, will be identified and treated.

The rehabilitation activities will start from the selected critical area that will act as nucleus, and will radiate from this nucleus to cover adjoining areas of high infestation. Major activities under this approach will be manual cutting of *Lantana* bushes, encouraging establishment of local species, including grasses and planting the areas with tall plants of fast growing species to quickly shade out *Lantana*.

The methodology to implement the above two approaches will be as follows:

- Method of cutting *Lantana* will be Cut Root Stock (CRS) method i.e. cutting the bushes below the soil to prevent coppicing. (See box below for details).
- Forest beat will be the unit for rehabilitating *Lantana* infested sites. Financial resources available under various schemes will, therefore, be converged towards this end.

- Local people, through existing community groups, will be encouraged to participate in rehabilitation of *Lantana* infested areas. Stake of local people will be built into this initiative under the available JFM instruments.
- The following will be, based on local practices, standardized for effective implementation of *Lantana* management initiative:
 - Cutting tools/ techniques
 - Calendar of rehabilitation activities
 - Cost models
- A three year active maintenance of the treated areas and triennial follow up thereafter will form integral part of the rehabilitation program till the areas gets fully rehabilitated. During this period, constant vigil will be maintained on any opportunistic springing back of sprouts/ seedlings of the invasive alien species and the same will be immediately removed. At the same time, progress of establishment of the native species will be actively monitored and encouraged.
- An average of 150 hectares of *Lantana* infested areas will be taken up for rehabilitation per year.



METHOD FOR REMOVAL OF LANTANA

Removal of adult clumps using 'Cut Root Stock' (CRS) method: This method involves cutting the main tap root of *Lantana* plant beneath the 'coppicing zone' (transition zone between stem base and rootstock) (Figure 1). This method of removal involves engagement of 2-3 individuals to work in a group for the removal of *Lantana* if the clumps are too large to be handled by one individual after the rootstock is cut. The steps involved in the cut rootstock method are:

- (i) The person, who engages in removal of *Lantana*, is positioned in a way that he stands near centre of the *Lantana* clump with his back facing the clump and holding the handle of digger (kudal)
- (ii) Using the specially designed digger, the person cuts the main rootstock of *Lantana* 3-5 cm below the soil surface by hitting the rootstock 3 or 4 times; while hitting the rootstock the blade of the digger gets lodged into the main tap root, and at this point it is useful to move the handle of the digger in the forward direction away from the body of the person so as to sever the connection of the clump with the main tap root. In case the clumps of *Lantana* form impenetrable thickets, it is advantageous to cut the rootstocks of 3-4 contiguous clumps to make the removal operation convenient. It may be noted that the branches of *Lantana* clumps should not be slashed/cut to gain access to the centre of the clump for its removal by cut rootstock method. The branches of *Lantana* thicket formed by more than one clump should be lifted and tipped over from one end by using a wooden or bamboo pole of about 1.5-2.5 m long and diameter 5-6 cm which is inserted just below the branches from one side and rolled over easily by two workers holding the pole at either end and pressing it so as to reach the centre of the clump. Such manual handling of impenetrable thicket is possible because of the umbrella type of canopy which makes it difficult to reach the centre of clump easily. Such physical maneuvers minimize or prevent regeneration from rooted cut branches when they fall on the ground.
- (iii) Lift the clump/s and place the clump/s upside down. If the clump is not placed upside down, the prostrate rooted branches and the aerial old branches having aerial roots at nodes may develop into adult plants when they come in contact with the soil. Therefore, the upside-down orientation of cut clumps is critical in the prevention of regeneration of *Lantana* from cut clumps. It may be noted that *Lantana* does not produce root suckers.
- (iv) After drying the clumps, the clumps may be used as fuel or burnt at the same site or all the dried clumps may be collected at one place and then burnt. The best time for removal of *Lantana* is just before rainy season, i.e. when the plants are not in flowering and fruiting.



(b) MANAGEMENT OF OTHER INVASIVE ALIEN SPECIES (PARTHENIUM, AGERATUM, EUPATORIUM)

The spread of these three species is largely restricted to the open lands including forest fringes, degraded pastures and areas having soils that are recently exposed due to landslips, erosion, soil cutting or muck dumping. The reconnaissance has shown that there is a large overlap of areas under different invasive alien species with these three noxious weeds also occurring, though each of these occupying different niches, in most of the forests that are infested with *Lantana*.

The basic approach to rehabilitate areas infested with these three invasive species will be as under:

- **APPROACH-I (AREAS WHERE INFESTATION OVERLAPS WITH LANTANA):** Such situation occurs under Chil, miscellaneous broad-leaved and scrub forests. In such areas removal of these three exotic weeds will be taken up simultaneously with removal of *Lantana* and the treated areas rehabilitated with fast growing native species/grasses.
- **APPROACH-II (AREAS WHERE THERE IS NO OR LITTLE LANTANA INFESTATION):** Such situation usually comes across in pastures, degraded forests and recently exposed sites. In such areas, manual uprooting of these exotic weeds just on the onset of monsoon, when the soil is moist, will be employed.

10.3.3 SOIL AND MOISTURE CONSERVATION The main objective is to protect hill slopes from further denudation, erosion and to maintain the equitable flow of water in the rivers, streams, perennial *nallas* that originate from these hills, thus constant efforts should be made to maintain and increase the protective vegetative cover in such areas. These forests shall, therefore, be simply protected as such. No fellings shall be carried out even salvage removals as these areas are highly prone to soil erosion owing to steep slopes. Comprehensive Catchment Area Treatment Plan has been made for Satluj basin which will guide the soil moisture conservation measures to be adopted in Karsog Division.

Map of Ranges with micro-watershed boundaries has been given here.

The grazing in these forests is required to be regulated. The rotational closures supplemented with some soil conservation measures in the eroded areas would improve protective vegetative cover. Fir/Spruce regeneration shall be encouraged and tended, wherever necessary. Most of the forests in lower elevations are poorly stocked, carry scattered tree growth or are devoid of adequate vegetation cover. Such areas shall be tackled by sowing, planting of suitable species and carrying out soil conservation works. The growing stock of ban oak forests is on the decline especially near the habitations. These forests can be regenerated by artificial means.

10.3.4 ENCROACHMENTS In recent years encroachment of forest land has emerged as a big threat to forest land. This is more so in UPF. However in PFs also the incidence of encroachment is not uncommon. Thus the boundary pillars of forests must be maintained regularly. If any shifting is noticed, action must be initiated immediately under IFA, 1927. In 2010 there were 563 cases of encroachment were with Revenue Department while 35 cases were pending with DFO. Together these encroachments amount to 66.81 ha area of DPF.

10.3.4.1 PREVENTIVE REMEDIAL MEASURES

- The forest officials must be well conversant with boundaries of the forests under their jurisdiction. The range officers, block officers and forest guards must check the boundary pillars frequently and in case of damage to boundary pillars, immediate legal action to punish the guilty and repair work should be undertaken on priority. DFO/ACF should also inspect the boundary pillars while inspecting forests, plantations and other forestry works.
- The old stone masonry pillars should be replaced with cement mortar after proper demarcation. The new boundary pillars of only cement mortar should be constructed in future.
- The field staff should be made accountable and sensitive towards the ever increasing menace of encroachments. The forest guard must initiate legal action as soon as the encroachment is noticed by him. He should chalk out the damage report and report the matter to range officer through block

officer. The block officer should immediately seek demarcation and Chellan the case in the appropriate court. Range officer must act quickly to file the case in the court; the laxity at any level must be dealt with under CCS (CCA) Rules.

- All the encroachment cases on forest land are within the jurisdiction of DFO as collector of the division under H.P. Public Premises and Land (Eviction and Rent Recovery) Act, 1971. Range officers should challan all such cases before collector for speedy trial.
- The powers of carrying out demarcation are vested with the revenue officers under H.P. Land Revenue Act, 1954 and as such, many times, the demarcation of forests is delayed due to their pre-occupation. It is therefore, suggested that the Tehsildar, Kanungo who are on deputation with the forest department be delegated the powers of demarcation of forests to process encroachment cases expeditiously.

STRATEGY

- Repair all existing boundary pillars and construct more boundary pillars close to habitation. For this areas need to be identified that are prone to encroachments.
- Railway girders should be used in encroachment prone areas and all BP s should be depicted in digitized maps of the area which will be maintained a permanent record.
- As a deterrent, FIRs should be registered as soon as an encroachment is detected. Court proceedings will then follow.
- Latitude, longitude and altitude readings of all Boundary Pillars(old and new) to be recorded in the BP register and database in the Division office

10.3.5 ILLICIT FELLING With development of good network of roads, there has been an increase in incidences of illicit felling. Table 2.3 (part I) gives the incidences of illicit felling since 1986.

10.3.5.1 SMUGGLING OF TIMBER: - The high price of timber in the market has attracted/created tendency to become rich overnight and hence the smuggling of timber takes place more than often. The illicit felling and smuggling are both related, many times organized. The incidences of smuggling have, however, reduced after the amendment in Indian Forest Act (H.P. 2nd Amendment 1991) vide which DFO has been designated as Authorized Officer to hear the cases pertaining to illegal transportation of Govt. property i.e. timber, resin, khairwood and katha and may order confiscation of both forest produce and the vehicle involved. The amendment notification is given as Annexure IX. The detail of cases admitted and decided in the court of Authorized Officer Karsog under 52A is given below:

Table 10.4 Vehicles Seized during Smuggling of Forest Produce

FIR No. & Date	Vehicle No.	Forest Property Seized	Remarks
129/98 dated 11.12.98	HP 11 1888	305 resin filled tins	Vehicle and forest produce confiscated to state
13/2000 dated 13.1.2000	PAT 4090	Deodar scants 47	Forest produce confiscated to state
106/2000 dated 21.9.2000	HP 24 4617	204 resin filled tins	Forest produce confiscated to state
74/2001 dated 1.7.2001	HP 30 0795	Deodar 10 scants	Forest produce confiscated to state
10/2002 dated 23.1.2002	HP 24 2388	Deodar 90 scants	Vehicle released, timber confiscated to Govt.
1/2003 dated 4.4.03	HP 03 1047	Deodar 69 planks	Vehicle released, timber confiscated to Govt.

152/2004 dated 26.11.04	PB 32 E 3700	Deodar 65 scants	Under trial with A.O. Karsog
	HP 12 1748		
70/2005 dated 2.6.05	HP 30 1306	Deodar scants 21	Under trial with A.O.
	HP 30 0351	Deodar 14 scants	Under trial with A.O.

(Source: Office Record, DFO Karsog)

STRATEGY

- i) **RAPID RESPONSE TEAM:** Number of beats in Karsog Division has now been reduced to 45 from 55 beats earlier. Thus there will a surplus of 10 forest Guards. They will work in Van Thana as Rapid Response Team (which means they will also be provided with good communication network- mobile allowance, vehicle etc.) and will have exclusive responsibilities only of protection works including illicit felling, encroachment, forest fires, wildlife poaching etc.
- ii) Stringent action against offender will act as a deterrent.
- iii) Whenever any vehicle is apprehended or timber is seized, they should be disposed off immediately (after seeking permission from court) before there is any depreciation in their value. This will save space and time wasted in keeping them in custody.

CHAPTER XI

MISCELLANEOUS REGULATIONS

11.1 PETTY FELLINGS The felling of petty nature as detailed below may be treated as prescriptions of this working plan:-

1. Dry or green trees required to meet bonafide requirement of local people including the right holders and others.
2. Dry or green trees for ordinary departmental use or for other Govt. departments.
3. Dry or green trees to meet special free grant for construction of houses damaged/destroyed by natural calamities like fires, lightening etc. as per settlement provisions or as per Govt. orders.
4. The felling of dry or green trees after getting felling permission of competent authority under Forest Conservation Act, 1980.

All the trees and poles marked for such purpose shall be recorded in the respective compartment history files and such fellings will appear in the control forms. The silvicultural principles shall be strictly adhered to while carrying out such marking.

11.2 DEVIATIONS Any large or unusual felling operation not prescribed in the Working plan will be a deviation requiring prior sanction of the competent authority. The deviations may be due to:-

1. Large scale damage by snow, fire and wind storms.
2. Special fellings to meet the sudden unexpected heavy demand of particular industries or for security/defence purposes.
3. Large scale felling of trees coming in the alignment of major roads or transmission lines or hydro-electric projects.

11.3 ROADS AND PATHS

11.3.1 ROADS The construction of a large number of roads has already been undertaken by the PWD in the tract. No more jeepable or motorable forest road is suggested.

11.3.2 BRIDLE AND INSPECTION PATHS A number of bridle and inspection paths covering all important forests have been constructed in the past. The existing roads and paths are detailed in Appendix-II. These should be kept well maintained. The inspection path should be constructed as far as possible along contours in such a way that whole of the forest is covered.

11.3.3 BUILDINGS A number of new buildings of various types have been constructed in the recent past. However, there is still a necessity of some more inspection huts and buildings for field staff. Some of the forest guard huts are in very bad condition which should be reconstructed. The existing and proposed new constructions are given in Appendix III(a) and III(b). The existing rest houses and inspection huts are poorly furnished. Keeping in view the allotment of funds, these should be furnished adequately.

11.4 DEMARCATION AND SURVEY All the demarcated and un-demarcated protected forests are well demarcated and brought on 1:15000 scale survey sheets by the Survey of India. The area is also covered by 1:50000 scale maps.

The boundary registers are not properly maintained. The position of boundary pillars is not shown properly. The forward and backward bearings of the boundary pillars have not been shown. Although settlement works have been completed in the tract, but the position of boundary pillars of demarcated protected forests is far from satisfactory especially along the cultivated lands. Some of the boundary pillars are missing also. So proper demarcation, identification of the DPFs on ground, proper recording of the forward and backward bearings of boundary pillars is required. The use of Geographical Positioning System (GPS) is strongly recommended for recording the forest boundaries accurately.

11.5 FOREST BOUNDARIES The state of boundaries of forests is not satisfactory. The boundary registers are not maintained properly. The boundary pillars are not maintained on desired lines. As already recommended, the use of Geographical Positioning System (GPS) is the need of the hour for correct positioning of boundary pillars. The field staff must check the forest boundaries frequently. It is

recommended that the forest guard will conduct complete annual checking of the boundaries of all forests and make a report to the block officer who in turn shall check at least 20% forests of his block complete in all respects at least once a year and make report to the range officer. Similarly the range officer will conduct complete checking of 20% forests in his range in a year and shall make a report to the DFO.

11.5.1 A quinquennial programme for the repair and checking of boundary pillars and chak pillars have been prepared and appear in Appendix XVII.

11.6 MAPS The demarcated and un-demarcated protected forests have been stock mapped on 1:15000 scale. The stock maps have been filed in compartment history files. Regeneration maps of all felled PB I areas have been prepared on 1:3750 scale and placed in compartment history files. The management map on 1:50000 scale has been prepared by making use of survey sheets.

11.7 RAIN GAUGES AND SNOW GAUGES No rain & snow gauge has been installed in this division. It is recommended to install rain and snow gauges at following stations:-

Table 10.1 Proposed Stations for Rain Gauges and Snow Gauges

Proposed Rain Gauge Stations	Proposed Snow Gauge Stations
Chauridhar	Chauridhar
Karsog	Katanda
Tattapani	Shalog
Pangna	Chhatri
Chhatri	

11.8 PRESERVATION PLOTS AND SEED STANDS No preservation plot and seed stand has been established in this division so far. The forests which were recommended for the establishment of preservation plots in the plan under revision are proposed again and also for seed stands. The name of forests is:-

Table 10.2 Proposed Preservation Plots and Seed Stands

Specie	Name of Forest
Deodar	D 19 Shalog C1a,C1b,C2a, D 225 Dhamoon C3a, C3b, D 234 Sundroo C3c
Chil	D 43 Kaneri C2, D 72 Reshtadhar C2b,D 230 Chaber C4,C5,D 231 Shiladhar C3

11.9 PRESERVED AND MONUMENTAL TREES Such historical, large sized/giant trees of important conifer and broad leaved species if found should be declared preserved and recorded, photographed, provided with a sign board giving its basic information.

11.10 TEMPLE GROVES All the temple grooves should be preserved irrespective of the species. No trees shall be felled from the temple grove.

11.11 TIMBER FOR RIGHT HOLDERS The genuine demand of right holders should be met as per provisions of settlement report, Govt. orders/instructions

11.12 TIMBER SALE DEPOTS Three timber sale depots owned by private individuals are in operation in Karsog division as listed in Chapter III, Part-I of the plan.

11.13 FUELWOOD AND CHARCOAL The estimated requirement of fuel wood and charcoal is 5000 and 1200 quintals respectively. The HPSFC Ltd. is operating a fuel wood & charcoal depot at Karsog but it is running in losses.

11.14 DRIFT/WAIF WOOD There are no reports of drift/waif wood coming in Sutlej river but the stretch of the division located along Sutlej river may get such timber in future. As such timber is the property of the state; these should be collected and handed over to HPSFC Ltd. for disposal. The pilferage of such wood by the nearby inhabitants should be prevented.

11.15 VOLUNTARY CLOSURES Now with the adoption of Participatory Forest Management and with adequate persuasion and motivation by the staff, people will come forward with more voluntary

closures and more area will be available for carrying out the prescriptions of Working Plan. The particulars of closed areas should be available in suitable registers in the division and range offices. The closure cases should be prepared regularly every year and got notified to avoid legal complications at a later stage.

11.16 REHABILITATION OF DEGRADED AREAS There are many seasonal nallas which were not tackled for reducing erosion in the past under state and central funded schemes. The territorial staff may enlist & highlight such areas and prepare 2 to 3 year plan for carrying out soil and water conservation works from top to bottom for better retention of rain water. Besides this, there are accidental damages to forest property due to natural calamities very often. One must tackle such problems immediately and on priority. During discussion with territorial field staff, Bamnana, Thakurthana land slide, Richhani landslip, Lalaknala have been found to be badly affected by rains.

A short term rehabilitation plan is to be prepared by the territorial staff for tackling such areas consisting of soil conservation measures and planting of soil conservation species. District Collector may be approached for funding such areas in the public interest.

11.17 CAT Plan (KOL DAM)

The Kol Dam Hydroelectric Project (4x200 MW) is located on Sutlej river upstream of Dehar Power Station of B.S.L. Project in Billopur District of Himachal Pradesh. The project envisages utilization of a drop of about 140 mtrs. By constructing a 163 m high rock fill dam and a dam for power station with an installed capacity of 800 MW. Besides providing an annual energy generation of 3054 GWh, the Kol dam Project would enhance the life of the Bhakra reservoir by about 18 years.

11.17.1 ECOLOGICAL ASSESSMENT The plant communities are basically indicators of the total environment. These communities respond not only to one environmental factor but also to interacting group of factors. The plant communities integrate these influences and react sensitively to change in balance of the environmental stresses being primary producers in the ecosystem. Efforts are therefore required to conserve biodiversity at all levels.

11.17.2 ACTIVITIES UNDER CAT PLAN The various proposed activities approved in the CAT Plan in respect of Karsog Division are tabulated here under. These activities are to be completed in 6 years.

Table 10.3 Proposed Activities under CAT Plan

Activity	Year I		Year II		Year III		Year IV		Year V		Year VI		Total
	Area (ha)	Cost (Cr.)	Area (ha)	Cost (Cr.)	Area (ha)	Cost (Cr.)	Area (ha)	Cost (Cr.)	Area (ha)	Cost (Cr.)	Area (ha)	Cost (Cr.)	
Afforestation	411	0.7	544	0.98	703	1.34	921	1.87	410	0.88	462	1.05	6.819
Pasture Development	160	1.13	232	0.2	256	0.23	125	0.12	119	0.12	116	0.12	0.918
Terracing/ Soil & Moisture conservation			200	0.6	300	0.95	275	0.93					2.481
Check Dam-Big (No)	63	0.13	187	0.4	188	0.42	62	0.15	63	0.16	62	0.17	1.418
Check Dam-Med. (No)	125	0.1	375	0.32	375	0.34	125	0.12	125	0.13	125	0.13	1.134
Check Dam-Small (No)	623	0.25	624	0.27	1247	0.56	624	0.3	623	0.32	624	0.33	2.02
Check Dam Total	811	0.48	1186	0.98	1810	1.32	811	0.56	811	0.6	811	0.63	
Other activities/infrastructure		0.37		0.37		0.37		0.37		0.27		0.25	2.009
Forest and rural)													
Total		1.67		3.13		4.22		3.85		1.87		2.07	16.8
Maintenance of Afforestation areas	411	0.25	544	0.32	703	0.42	976	0.58	410	0.25	407	0.24	2.065
Maintenance of Pasture areas	160	0.05	232	0.07	256	0.07	125	0.04	119	0.03	116	0.03	0.289

CHAPTER XII

ESTABLISHMENT AND LABOUR

12.1 ESTABLISHMENT The list of existing ranges, blocks and beats is given in Appendix . The position of sanctioned staff vis-à-vis the existing one has been given in Chapter-VI, Part-I. In view of the increased work load on account of developmental activities, more special duty staff shall be needed for smooth working of division. Even protection work has become more difficult because with the construction of roads, increase in population, tremendous increase in prices of timber, even remote forests have become prone to illicit fellings and encroachments.

12.1.2 The quantum of office work at range level has increased considerably. The range officers have per force to devote more time in the office at the cost of field works. Therefore, it is suggested that all the range officers should be provided range clerks. Similarly, additional ministerial staff is required to cope with the increasing work load in the division office.

12.2 LABOUR The position of labour supply has been discussed in Chapter VI; Part I. Except during agricultural/horticultural harvesting season, sufficient local labour is available to carry out normal forestry works. However, the labour supply mates of Forest Corporation have to import labour from outside the division for carrying out exploitation work of forests.

CHAPTER XIII

CONTROL AND RECORD

To ensure the proper implementation of the prescriptions of the plan, the following record will be maintained in the division:-

13.1 COMPARTMENT HISTORY FILES The compartment history files of all the demarcated and un-demarcated protected forests have been prepared afresh. The un-demarcated protected forests have been described for the first time. The new descriptions, enumeration results, allotment, prescriptions, stock maps have been filed in the divisional as well as range copies of compartment history files.

13.2 CONTROL FORMS To exercise proper check and control on the prescriptions of the working plan, the Divisional Forest Officer will submit the control forms 2a, 2b, 4 and C annually to the Conservator of Forests in accordance with the instructions laid down in Punjab Forest Leaflet No. 11. The control forms must be completed and submitted in the first quarter of the following year.

13.3 REGISTER OF ROADS, PATHS AND BUILDINGS The register of roads, paths and buildings existing as well as new constructions will be maintained showing the year of construction, cost and other important details.

13.4 FOREST GUARD MANUAL/BEAT BOOK The range officers shall see that all the beat guards keep and carry copies of maps of forests of their beats and other record mentioning various details like area, allotment, prescriptions, and particulars of rights of local people forest-wise, order issued from time to time and other important details of the beat. The further instructions as laid down in Punjab Forest Manual III shall be kept in mind.

13.5 RESEARCH JOURNAL The research journals should be maintained in each division and relevant research activities conducted/undertaken should be entered.

13.6 PLANTATION/SOIL CONSERVATION JOURNAL Wherever sowing, planting and soil conservation works have been carried out, journals shall be maintained indicating the details of works done from time to time along with cost.

13.7 NURSERY JOURNAL A nursery journal for each nursery shall be maintained wherein the details of all the nursery operations like sowing, germination, weeding, pricking etc. shall be incorporated along with cost.

13.8 FIRE RECORDS A record of fires be maintained according to the standing orders in force from time to time.

13.9 RECORD OF CAPITAL EXPENDITURE A record of capital expenditure on roads, buildings and other works shall be maintained in the prescribed form.

13.10 RAINFALL/SNOWFALL RECORD This record shall be maintained in a consolidated form at the divisional level for various stations where snow and rain gauges have been installed.

13.11 FOREST SETTLEMENT FILES All the forest settlement files should be well preserved and kept under the safe custody of ACF/Superintendent of the division.

APPENDICES



ANNEXURE I
SUMMARY OF PRESCRIPTIONS

PRESCRIPTION	PARAGRAPH
DEODAR-KAIL WORKING CIRCLE	
GENERAL CONSTITUTION	2.1
GENERAL CHARACTER OF THE VEGETATION	2.2
AREA AND ALLOTMENT	2.3
SPECIAL OBJECT OF MANAGEMENT	2.4
BLOCKS AND COMPARTMENTS	2.5
FELLING SERIES	2.6
ANALYSIS AND VALUATION OF THE CROP	2.7
EXPLOITABLE DIAMETER	2.8
ROTATION AND CONVERSION PERIOD	2.9
REGENERATION PERIOD	2.10
FELLING CYCLE	2.11
DIVISION INTO PERIODIC BLOCKS	2.12
REGULATION OF YIELD	2.13
PROVISION IN CASE OF NATURAL CALAMITY	2.14
CONTROL OF YIELD	2.15
METHOD OF EXECUTING FELLINGS IN PB I	2.16
SEQUENCE OF FELLINGS IN PB I	2.17
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GENERAL CHARACTER OF THE VEGETATION	3.2
SPECIAL OBJECT OF MANAGEMENT	3.3
AREA AND ALLOTMENT	3.4
BLOCKS AND COMPARTMENTS	3.5
ANALYSIS AND VALUATION OF THE CROP	3.6
SILVICULTURE SYSTEM	3.7
REGENERATION PERIOD	3.8
ROTATION AND CONVERSION PERIOD	3.9
EXPLOITABLE DIAMETER	3.10
FELLING SERIES	3.11
FELLING CYCLE	3.12
DIVISION INTO PERIODIC BLOCKS	3.13
CALCULATION OF YIELD	3.14
CONTROL OF YIELD	3.15
METHOD OF EXECUTING FELLINGS IN PB I	3.16
SEQUENCE OF FELLINGS IN PB I	3.17
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REGENERATION OF OAK	3.21
REGENERATION OF OTHER BROADLEAVED SPECIES	3.22
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PROBLEM WITH NATURAL REGENERATION	3.24
RESIN TAPPING	3.25
PROTECTION WORKING CIRCLE	
GENERAL CONSTITUTION	4.1
GENERAL CHARACTER OF THE VEGETATION	4.2
SPECIAL OBJECTS OF MANAGEMENT	4.3
AREA STATEMENT	4.4
BLOCKS AND COMPARTMENTS	4.5
ANALYSIS AND VALUATION OF THE CROP	4.6
SILVICULTURAL SYSTEM	4.7
FELLING SERIES	4.8
METHOD OF TREATMENT	4.9
YIELD AND CONTROL OF YIELD	4.10
SUBSIDIARY SILVICULTURAL OPERATIONS	4.11
OTHER REGULATIONS	4.12
PLANTATION (OVERLAPPING) WORKING CIRCLE	
GENERAL CONSTITUTION	5.1
BLOCKS AND COMPARTMENTS	5.2
SPECIAL OBJECTS OF MANAGEMENT	5.3
PLANTATION SERIES	5.4
ANALYSIS AND VALUATION OF CROP	5.5
STRATEGY	5.6
PLANTATION PROGRAMME	5.7
PLANTATION PRACTICES	5.8
NON TIMBER FOREST PRODUCE (OVERLAPPING) WORKING CIRCLE	
GENERAL CONSTITUTION	6.1
SPECIAL OBJECTS OF MANAGEMENT	6.2
BLOCKS AND COMPARTMENTS	6.3
AREA STATEMENT	6.4
ANALYSIS AND VALUATION OF THE CROP	6.5
STOCK MAPS	6.6
METHOD OF TREATMENT	6.7
PROPAGATION TECHNIQUES	6.8
OTHER NON TIMBER FOREST PRODUCING PLANTS/PRODUCTS	6.9
CALCULATION OF YIELD	6.10
SUBSIDIARY SILVICULTURAL OPERATIONS	6.11
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PARTICIPATORY FOREST MANAGEMENT (OVERLAPPING) WORKING CIRCLE	
JOINT FOREST MANAGEMENT IN HIMACHAL PRADESH	7.1
THE LESSONS LEARNT	7.2
CONCEPT OF PARTICIPATORY FOREST MANAGEMENT	7.3
SPECIAL OBJECT OF MANAGEMENT	7.4
IMPLEMENTATION OF JFM IN KARSOG DIVISION	7.5
FUTURE SCOPE	7.6
POTENTIAL ACTIVITIES OF JFM COMMITTEES	7.7
MODE OF WORKING	7.8
WILD LIFE MANAGEMENT (OVERLAPPING) WORKING CIRCLE	
GENERAL CONSTITUTION	8.1
IMPORTANCE OF WILDLIFE	8.2
DISTRIBUTION OF WILDLIFE	8.3
SPECIAL OBJECTS OF MANAGEMENT	8.4
MANAGEMENT STRATEGY	8.5
HUMAN RESOURCE DEVELOPMENT AND PERSONNEL PLANNING	8.6
SCIENTIFIC STUDY, RESEARCH AND DATA COLLECTION	8.7
FIELD CRAFT - HOW TO OBSERVE AND UNDERSTAND THE JUNGLE	8.8
PASTURE AND GRASSLANDS IMPROVEMENT (OVERLAPPING) WORKING CIRCLE	
GENERAL CONSTITUTION	9.1
SPECIAL OBJECTS OF MANAGEMENT	9.2
TYPES OF GRAZERS	9.3
REGULATION OF GRAZING	9.4
IMPROVEMENT OF PASTURES AND GRASSLANDS	9.5
REGISTRATION OF GRAZERS	9.6
ISSUE OF PERMITS	9.7
FIXATION OF ROUTES AND RAHDARI CHECK POSTS	9.8
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FORESTLAND PROTECTION AND CONSERVATION (OVERLAPPING) WORKING CIRCLE	
GENERAL	10.1
SPECIAL OBJECTS OF MANAGEMENT	10.2
METHOD OF TREATMENT	10.3

**Annexure II (a)
Bridal Paths**

Bridle Paths				
Range	Block	Beat *	Name of Bridle Path	Length (KM)
Karsog	Mamail	Mamail	Mamail to Kelodhar	5
		Mamail	Mamail to Bhanera	3
		Bhenara		2
		Ghaliach	Batala Behli to Kabagra	6
		Ghaliach	Pehran to Latheri	5
		Mendhi	Jong to Garyala	8
		Mendhi	Mehandi to Chaira	5
		Mendhi	Kashoul to Mehandi	3
		Kashoul		3
	Karsog	Kakahan	Bakhrot to Karsog	5
		Kakahan	Charkufri to Karsog	2
		Kamand		4
		Kamand	Charkufri to Matehal	4
		Kakahan	Kakahan to Sarkoldhar	1
		Sanarli		3
		Sanarli	Sanarli to Madhag	6
		Sanarli	Sarkol to Sainthal	5
	Bagsad	Bagshad	Sapnot to Bagshar	1
		Dharmour		2
		Dharmour	Dharmour to Bagshar	0.5
		Saprot		1
		Mahunag	Mahunag to Chaira	8
		Mahunag	Mahunag to Sartoyala	5
		Mahunag	Sartoyala to Chaira	5
			TOTAL B/PATH IN KASOG	92.5
Pangna	Pangna	Pangna	Pangna to Mashog	0.3
			Paralakashout to Shall	1
		Begli	Paralakashout to Shivadehra	5
	Kutahchi	Kutachi	Khulad to Dadal	4
	Chindhi	Chindhi	Chita Dhartu to Kaneri	2
		Chindhi	Chindi to Maog	0.6
		Shorahan	Sorshan to Khaplas	1.7
		Kardal	Chamanpur to Shini	1
	Tatapani	Tattapani	Tattapani to Kirya	0.5
		Talehan	Shaungi to Talehan	3
			TOTAL B/PATH IN PANGNA	19.1
Seri	Richhni	Pathrevi	Kelodhar to Mahog	6
		Richni		6
		Richni	Kelodhar to Kotkosh	6
	Gowalpur	Gowalpur	Tebban to Gowalpur	6
		Teban		2
		Sarhan		2

		Sarhan	Sarahan to Ashla	1
		Pokhi	Ropri Nal to Pokhi	5
			TOTAL B/PATH IN SERI	34
Magroo	Mahog	Mahog	Mahog to Shavad	6
			TOTAL B/PATH IN MAGROO	6
			TOTAL B/PATH IN KARSOG DIVISION	151.6
			TOTAL FIRELINE IN KARSOG DIVISION	25.5
			G.Total of Path maintined as fire line	177.1
* Beats existing				

Annexure II (b)
Fire Lines

Range	Block	Beat	Name of Fire Line	Length (KM)
Karsog	Karsog	Dopha	Mehradhar to main ridge running from Shikari Devi to Kelodhar	3.5
Karsog	Bagshad	Bagshad	Dharmour to Bagshar	2
Karsog	Bagshad	Dharmour	Dharmour to Bagshar	3
Pangna	Pangna	Gushal	Bakhrot to Shiva Dehra	5
Pangna	Chindhi	Chindi	Chindi to Chitadhartoo	3
Pangna	Chindhi	Kandha	Pargagali to Restadhar	3
Magroo	Mahog	Mahog	Katanda to Mahog	3
Magroo	Mahog	Katanda	Katanda to Mahog	3

Annexure III(a)

EXISTING BUILDINGS

BUILDING	LOCATION	YEAR OF CONSTRUCTION	EXPENDITURE INCURRED(Rs.)
Division HQ Karsog	-	-	-
DFO Office	Karsog	1979-80 to 1984-85	90,903
DFO Residence	Karsog	1978-83	89,127
ACF Residence	Karsog	1989-90	2,50,000
Type III Quarter	Karsog	1987-88	1,20,400
Type II Quarters-4 No.	Karsog	1980-1983	1,42,194
Type II Quarters-2 No.	Karsog	1986-87	2,13,695
Type I Quarters-1 No.	Karsog	1988-89	69,000
Type I Quarters-2 No.	Karsog	1978-83	57,108
Community/seminar Hall	Karsog	1999-2000	5,25,000
Karsog Range	-	-	-
RO Office cum Residence	Mamail	1960-62	15,500
BO Quarter	Karsog	1941-42	-
BO Quarter	Mamail	1971-72	-
Forest Guard Hut	Mamail	1961-62	3,250
Forest Guard Hut	Bhanera	1959-60	3,250
Forest Guard Hut	Mehndi	1988-89	72,000
Forest Guard Hut	Sanarli	1981-82	-
Forest Guard Hut	Kamand	1961-62	3,000
Forest Guard Hut	Sapnot	1959-60	3,225
Forest Guard Hut	Bagsharh	1957-58	3,225
Forest Guard Hut	Mahunag	1994-95	1,50,000
Forest Guard Hut Kakahan	Karsog	2004-05	3,78,700
Forest Rest House	Mahunag	1978-82	85,733
Inspection Hut	Bagsharh	1991-92	2,49,000
Inspection Hut	Sanarli	1996-97	1,85,000
Inspection Hut	Kandhi	2004-05	5,00,000
Seed Store	Mamail	1979-80	2,500
Seed Store	Karsog	1988-89	-
Garage	Karsog	1981-82	10,650
Charcoal shed	Karsog	1986-87	15,000
Pangana Range	-	-	-
RO Office cum Residence	Pangna	1982-84	1,11,350
Forest Guard Hut	Shalog	-	-

Forest Guard Hut	Arjoti	1964-65	16,000
Forest Guard Hut	Dayalpur	1959-60	-
Forest Guard Hut	Gushal	1959-60	-
Forest Guard Hut	Galyog	1956-57	-
Forest Guard Hut	Ghangher	1958-59	-
Forest Guard Hut	Belar	1988-89	66,000
Forest Guard Hut	Ballindhi	1989-90	79,800
Forest Guard Hut	Begli	1991-92	88,400
Forest Guard Hut	Alsindhi	1994-95	1,83,000
Forest Guard Hut	Pargagali	1995-96	1,55,400
Forest Guard Hut	Kutachi	2004-05	3,99,700
Seed Store	Chindi	1980-81	6,000
Check Post	Tattapani	-	-
Check Post	Jachh	1979-81	22,000
Forest Rest House	Tattapani	1989-90	2,12,200
BO Quarter	Tattapani	1991-92	1,33,700
BO Quarter	Pangna	1996-97	2,48,620
BO Quarter	Chindi	2004-05	4,27,000
Seed Store	Pangna	2003-04	64,000
Seri Range	-	-	-
RO Office cum Residence	Chauridhar	1962-63	17,000
BO Quarter	Chauridhar	1962-63	6,000
Forest Guard Hut	Chauridhar	1962-63	6,000
Type I Quarter	Chauridhar	1962-63	5,000
Inspection Hut	Chauridhar	1962-63	8,000
Inspection Hut	Katanda	1962-63	23,928
Forest Rest House	Kotlu	1991-92	2,80,900
BO Quarter	Kelodhar	1996-97	2,48,600
Fire Control Room	Chauridhar	2001-02	3,52,900
Inspection Hut	Ashla	2004-05	5,00,000
Check Post	Kelodhar	1987-88	1,700
Forest Guard Hut	Sayanjbagra	1961-62	5,000
Forest Guard Hut	Kotkosh	1954-55	3,000
Forest Guard Hut	Gwalpur	1960-61	5,500
Forest Guard Hut	Katanda	1963-64	5,000
Forest Guard Hut	Ashla	1963-64	5,000
Forest Guard Hut	Niharinal	1963-64	-
Forest Guard Hut	Nanj	2004-05	3,76,800
Magroo Range	-	-	-
RO Office cum Residence	Chaura	1984-85	78,000
BO Quarter	Mahog	1963-64	8,000

BO Quarter	Chaura	2004-05	4,786,000
Forest Guard Hut	Seri Mangarh	1965-66	7,100
Forest Guard Hut	Thanser	1964-65	5,000
Forest Guard Hut	Katanda	1984-85	31,997
Forest Guard Hut	Mahog	1954-55	1,961
Forest Guard Hut	Chhatri	1999-00	1,95,700
Forest Guard Hut	Lassi	2004-05	3,43,000
Fire Watch Tower	Katanda	2001-02	50,000

APPENDIX III(b)

KARSOG FOREST DIVISION – PROPOSED BUILDING

RANGE/BLOCK	NAME OF OFFICE	WHETHER UNDER CONSTRUCTION OR NEW BUILDING REQUIRED
Pangna/Pangna	1. Fgd. Hut Surahi with HQ Galyog	New
	2. Fgd. Hut Kutachi with HQ at Kutachi	Under construction
	3. Fgd. Hut Machhrat with HQ at Dhoura	New
	4. Fgd. Hut Begli with HQ at Kandha	New
	5. Fgd. Hut Gushal with HQ at Gushal	New
Pangna/Chindi	1. B.O. Quarter Chindi	Under construction
	2. Fgd. Hut Chindi with HQ at Chindi	New
Pangna/Tatapani	1. Fgd. Hut Talehan with HQ at Talehan	New
Karsog/Bagshar	1. B.O. Quarter Bakshar	New
	2. Fgd. Hut Dharmour with HQ at Dharmour	New
Karsog/Karsog	1. B.O. Quarter Karsog	New
	2. Fgd. Hut Kakhon with HQ at Karsog	Under construction
	3. Fgd. Hut Dopha with HQ at Bamna (Nihani)	New
Karsog/Mamail	1. B.O. Quarter Mamail	New
	2. Fgd. Hut Ghalach with HQ at Nehra	New
	4. Fgd. Hut Kashual with HQ at Kashual	New
Seri/Seri	1. Fgd. Hut Nanj with HQ at Nanj	Under construction
Seri/Richhni	1. Fgd. Hut Seri with HQ at Khaniari	New
	2. Fgd. Hut Richhni with HQ at Kelodhar	New
	3. Fgd. Hut Kotkosh with HQ at Kotkosh	New
Seri/Gwalpur	1. Fgd. Hut Pokhi with HQ at Sihanj	New
	2. Fgd. Hut Taiban with HQ at Taiban	New
Magroo/Mahog	1. Fgd. Hut Kathaundhar with HQ at Nehra Seri	New
	2. Fgd. Hut Sagagi with HQ at Tippra	New
Magroo/Magroo	1. B.O. Quarter Magroo	Under construction
	2. Fgd. Hut Lassi with HQ at Lassi	Under construction

ANNEXURE IV

Illicit Felling since 2001						
Beat	Name of Forests	2001-02	2002-03	2003-04	2004-05	2005-06
KARSOG						
Mamail	D 178 Badharu					
	D 179 Mamail dhar		CS-2			
	D 181 Sarahdhar C I to C IV			Chil III/1, IV/1		
	D 182 Shil C I a to C II b		CS-4			
	D 183 Mahadev ki Banoni C I a to C II	CS-19	CS-10, DS-8	CS-4	DS-6, CS-6	
Ghaliach	D 175 Pehran C I a to C II c					
	D 176 Ghaliach C I to C III		DS-15, CS-8			DS-2
	D 177 Nehra	Deo III/1				
	D 180 Tiri dhar C I a to C II b			Chil IV/2 & V/1	chH IV/1	
Bhenara	D 186 Kelodhar Saranda C I to C III				CS-1	
	D 187 Kelodhar Suranda C I to C IV b				deo V-1	
	D 193 Katak C I to C III	CS-5				
	D 194 Bheron Shil					
Mendhi	D 202 Parla Dhantoo C I to C IV		Chil-V/5			
	D 202 Parla Dhantoo C I to C IV		Chil-V/5			
	D 202 Parla Dhantoo C I to C IV		Chil-V/5			
	D 202 Parla Dhantoo C I to C IV		Chil-V/5			
	D 205 Sarti					
	D 206 Pabo	DS-3				deo V-1, DS-3
	D 207 Gandhor C I to C II	Chil- IV/1				
	D 208 Majhood C I a to C II					
Kashoul	D 188 Kandhi C I to C V b	DS-8		DS-4		
	D 188 Kandhi C I to C V b		Deo V/1			
	D 189 Kandhi					DS-3
	D 198 Dhanyara I			CS-3		
	D 199 Dhanyara II	CS-8, Chil V/1				
Kakhan	D 161 Dumel C I to C II					
	D 162 Kanjel C I to C III			DS-3		
	D 163 Kot					
	D 165 Chandhi C I to C II			DS-15		
	D 166 Chakranth C I to C III	DS-4, CS-1, Deo V/1, Kail V/1		DS-1, KS-1		
Kamand	D 148 Kanani C I to C II	DS-2				
	D 152 Marndhi C I to C II	Chil Ia-1				
	D 153 Dharanda C I to C II	Chil IV/1				
	D 154 Magheri					
	D 157 Kandha II					
	D 158 Kufridhar					
	D 159 Saned					
	D 160 Chalaunhi	CS-2				

Sanark	D 167 Bajhu C I to C V		DS-10,CS-38		kal IV/1	
	D 170 Tiker Karsog C I a to C IV c					
Dopha	D 171 Dopha-II C I to C VII			DS-2		
	D 172 Dopha-I C I to C VII	CS-7				
	D 172 Dopha-I C I to C VII		CS-1			
	D 173 Dopha C I a to C IV g					
	D 174 Pumeheran	Deo v/2				
Bagshad	D 111 Baksar C I a to C II e	Deo V/1				
	D 111 Baksar C I a to C II e	DS-7,CS-5				
	D 111 Baksar C I a to C II e	Deo IV/2				
	D 122 Thaltoo	Chil V/10				
	D 113 Khamatoo C I to C II	CS-9				
	D 113 Khamatoo C I to C II	Chil V/1				
Dharmour	D 117 Dharmour Alald C I to C II	Deo IV/1				
	D 118 Kot C I to C II					
	D 119 Meharan C I a to C II f	Chil V/2				
Parlog	D 126 Kashot III					
	D 133 Hiru					
Mahunag	D 124 Kalhaulta C I a to C IV					
	D 137 Nagletha		Chil IIA/18 III/1			
	D 138 Bag Bakharl C I a to C III					
Saprot	D 139 Odda C I to C III b		DS-2,			
	D 140 Dharanda				CS-40	
	D 142 Bilasoo C I to C II	KS-2,CS-4				
	D 143 Kandhi Dhech			CS-1		
	D 144 Kashmir		KS-3			
	D 146 Kashmir II					
PANGANA						
Pangna	D 17 Chatiri Suket					
	D 20 Hunge Nal					
	D 45 Sundrahul			Chil IV/1, Chil IIB/1		CS-10, chil V=1
Begli	D 31 Dahi				Deo V/1	
	D 33 Kheneog					
	D 34 Tikkan					CS-4
	D 35 Sanjog C I & II					
	D 38 Bukaran C I to II				deo V/1	
Gushal	D 36 Kandhi					
	D 37 Bhanech					
	D 39 Shill C I & II					
	D 40 Bajhu C I to III	KS-8			Deo V/1,DS-7, chil IV-1	
Suehi	D I Mahog			CS-1		chil V-1

	D 6 Panjoru	CS-1	chil V/1	chil V/2		
	D 7 Chil Sarahi	chil V/1		CS-1	chil -V/1	CS-12
	D 8 Panjanu	Chil V/3,CS-1	CS-1			CS-2
	D 9 Suhi			CS-1		
	D 10 Kelo Sarahi					DS-2,
Kutahchi	D 24 Barnog				deo II 8/1	
	D 26 Chohara C I a to IV b	deo II/1,IV/4			Kail II 8/1	
Salag	D 15 Rakni I to II b	DS-2			Deo V/1, DS-4	
	D 19 Shalog C I a to VI	Deo V/1			deo II 8/1	
Machhrot	D 27 Mahasu C I to VI b				Deo V/1	
	D 28 Mahasu				DS-1	
	D 29 Begli Suket C I & II				kail V-1	
Chindhi	D 41 Bakhras C I to III					
	D 42 Charkufri C I & II	deo IV/1				
Shorahan	D 58 Dharmour C I to III	Deo V/11,				
	D 59 Dharmour					
	D 61 Shorshan C I to III				CS-5	
	D 68 Udhmo C I & II					
Kandha	D 70 Shil Badyar I		CS/4,KS/5			
	D 71 Shil Badyar C I a to II	kail V/1,Ban V/2,DS- 2,chil V/1,ban S- 3				
	D 72 Reshtadhar C I a to IV	Chil V/1,Chil III/3,V/1,II 8/1sapling- 4,Ban V/5			chil V- 1,CS-4	
	D 73 Gherlohal C I & II					
Belar	D 62 Kuns C I to III					
	D 63 Paniaru					
	D 64 Salana Dagon				Ban S-1	
	D 66 Salalana Dagoh II				chil III/1, Deo V/1	
	D 67 Thuhadhar C I to III					
Kardal	D 46 Frash					
	D 47 Chhaj					
	D 48 Mashog		Chil V/1			
	D 50 Kotbehal II					
	D 51 Kot behal III					
	D 55 Janol					
Tattapani	D 92 Sarour					
	D 99 Braiker	Trimbal IV/1				
	D 100 Ghangoor	Khair V/1				

Balkh	D 24 Pervain					
	D 78 Kandhe C I & II	Chil V/1				
	D 82 Devikat C I & II	Chil V/6 & IV/1			Chil IV/1	
Aisadi	D 77 Gurju Dhar					
Talakan	D 104 Vasta					
	D 105 Khadehan				CS-5, Rh-V/1	
	D 110 Ghaula C I to VI	Chil III/2				
	U 2 Belar					
SEAI						
Chaudhar	D 228 Bhunda Shil C I to C III b					
Nanj	D 227 Pog C I to CV	Chil IV/1, V/1				
Dhamoon	D 225 Dhamoon C I to C III b	Deo V/1	deo III/1, deo V/1		OS/16, deo V/1	deo IV/1
Khadra	D 226 Khadra C I to CV b			Chil V/1		OS-4
	D 227 Charog C I to C III b					
Niharinal	D 212 singli II	deo V/1				
	D 216 Ganai				OS-4, deo V/1	
Kotkash	D 234 Sundroo C I to CV b	Deo V/1				
Gawalpur	D 254 Sythan C I to C IV					
Yeban	D 241 Kandloo C I to C III b					
	D 245 Pindu C I to C II					
Pakhi	OD 240 Bahai C I to C IV b					
Serhan	D 249 Makra C I to C III b					
MADROO						
Serimangarh	D 291 Phaidhar C I to C II	deo V/1		Rai V/1		
	D 292 Shi naryan C I to C II	deo V/1		Spence V/1, deo V/1	Rai V/2	
	D 296 Raihi Shil C I to C III	Deo V/1				
	D 297 Surahi C I to C III	deo V/3, Rai IV/1, Rai V/2, Rai V/3				
Chaura	D 284 Karsan Dri	Chil III/3				
	D 273 Lassi	Rai V/1				
Thanser	D 268 Janahar C I to C II					
	D 288 Katanju C I to C II	Deo V/1				
	D 270 Ruhmani C I to C III	Rai V/1				Deo V/1
Mahog	D 255 Shagach C I to C VII					
	D 256 Jagoi C I to C II		Chil III/1			
Katanda	D 259 Lotala (O) C I to C VI d	Deo V/1	Deo V/3			

Kathaundhar	D 262 Kathondhar C I a to C IV	Rai V/2				
Sagagi	D 265 Khatool D) C I to C II					
	D 266 Lahari Shill C I to C III					

Beat	Name of Forests	2006-07	2007-08	2008-09	2009-10	2010-11
KARSOG						
Mamail	D 178 Badharu		chil V/1,CS-2			
	D 179 Mamail dhar			CS-1		
	D 181 Sanahdhar C I to C IV	chil V-1	chil IV/1			
	D 182 Shill C I a to C II b					
	D 183 Mahadev ki Banoni C I a to C II	chil V-1,DS-3,CS-2		Safeda V/1		
Ghalach	D 175 Pehran C I a to C II c				KS-1	
	D 176 Ghakach C I to C III	DS-2,CS-2				Deo IV-2
	D 177 Nehra	DS-7		Deo-V/1	DS-1	
	D 180 Tkri dhar C I a to C II b			chil V/1		
Bhenara	D 186 Kelodhar Saranda C I to C III					
	D 187 Kelodhar Suranda C I to C IV b	KS-1			deo-III/1	Chil V/1, Deo IV-2
	D 193 Katak C I to C III			CS-10		
	D 194 Bheron Shill	DS-2				
Mendhi	D 202 Parla Dhantoo C I to C IV					
	D 202 Parla Dhantoo C I to C IV	Chil V-4,CS-11				
	D 202 Parla Dhantoo C I to C IV					
	D 202 Parla Dhantoo C I to C IV					
	D 205 Sarti			CS-1		
	D 206 Pabo	DS-2,CS-2			CS-1,DS-2	
	D 207 Gandhol C I to C II			CS-3	Chil V/2	Chil V-1, Chil-III/1
	D 208 Majhood C I a to C II	Deo II A/1,CS-6	chil V/1,CS-5			
Kashoul	D 188 Kandhi C I to C V b		DS-4	DS-1,Deo V/1	DS-3	
	D 188 Kandhi C I to C V b					
	D 189 Kandhi	DS-2				
	D 198 Dhanyara I				CS-2	
	D 199 Dhanyara II					
Kakhan	D 161 Dumel C I to C II		CS-4	CS-2		
	D 162 Kanjol C I to C III		KS-3	DS-2	DS-2	
	D 163 Kot			Eu S-17		
	D 165 Chandhi C I to C II					
	D 166 Chakranth C I to C III					
Kamand	D 148 Kariani C I to C II				Deo IV/1	
	D 152 Marndhi C I to C II					
	D 153 Dharanda C I to C II			chil-IV/1,III/1		chil-IV/1
	D 154 Magheri					
	D 157 Kandha II			chil IV/1		

	D 158 Kufridhar	CS -28, chil V/2		CS-1, chil IV/1		
	D 159 Saned			CS-1		
	D 160 Chalaunhi					
Sanarli	D 167 Bajhu C I to C V		DS-12, KS-2	DS-2, Chil- IV/1	chil-V/1	
	D 170 Tiker Karsog C I a to C IV c		DS-2	chil-IV/1	kail V/1	Deo III/1 & IIA/1
Dopha	D 171 Dopha-II C I to C VIII					
	D 172 Dopha-I C I to C VII			Chil -V/1		
	D 172 Dopha-I C I to C VII				DS-2	
	D 173 Dopha C I a to C IV g				DS-2	
	D 174 Puniptheran					
Bagshad	D 111 Baksar C I a to C II e			chil IIA/1	chil IIA/1 & III/1	
	D 111 Baksar C I a to C II e					
	D 111 Baksar C I a to C II e					
	D 112 Thaltoo					
	D 113 Khamaroo C I to C II					
	D 113 Khamaroo C I to C II					
Dharmour	D 117 Dharmour Alaid C I to C II			chil V-1		
	D 118 Kot C I to C II					
	D 119 Meharan C I a to C II f		chil III/1/IV/1	chil V-6 & III/1	chil V-3	
Parlog	D 126 Kashot III	chil V-1				
	D 133 Hiru	Chil V-1				
Mahunag	D 124 Kalhaute C I a to C IV				Chil II A/1	
	D 137 Nagletha	Chil V-1				
	D 138 Bag Bakhari C I a to C III	CS-2				
Saprot	D 139 Odda C I to C III b	deo IV- 2, DS-1				
	D 140 Dharanda					
	D 142 Bilasoo C I to C II					
	D 143 Kandhi Dhech					
	D 144 Kashmir			Chil V/1, Kail V/1		
	D 146 Kashmir II		chil V/1			Chil II A/2
PANGANA						
Pangna	D 17 Chattri Suket				Chil V/1	
	D 20 Hiunge Nal				Chil V/1	
	D 45 Sundrahal			CS-4		CS-6
Begli	D 31 Dahi					
	D 33 Kheneog			CS-3		
	D 34 Tikari					
	D 35 Sanjog C I & II			Deo V/1	Chil V/1	
	D 38 Bukaran C I to III			Chil IV/1		
Gushal	D 36 Kandhi				KS-2	
	D 37 Bhanech	KS-3				
	D 39 Shili C I & II			DS-1, chil IV/1		CS-13

	D 40 Bajhu C I to III	deo IV/1,DS- 1,CS-2 chil V-1				DS-3
Sarhi	D 1 Mahog					
	D 6 Panjanu				chil V/1	
	D 7 Chil Sarahi					
	D 8 Panjanu					
	D 9 Suhl					
	D 10 Kelo Sarahi			deo V/2,		
Kutahchi	D 24 Barnog					
	D 26 Chohara C I a to IV b			deo IV/1		
Salag	D 15 Rakni I to II b					
	D 19 Shalog C I a to VI					
Machhrot	D 27 Mahasu C I to VI b		deo V/1,chil V/1			
	D 28 Mahasu					
	D 29 Begli Sukei C I & II	Chil V -1				
Chindhi	D 41 Bakhras C I to III			DS-1	chil IV/2,CS-4	Chil IV/1,CS- 4
	D 42 Charkudri C I & II			CS-1,Deo V/1		ban V/1
Shorshan	D 58 Dharmour C I to III	CS-2,deo IV/1				
	D 59 Dharmour			CS-10,		
	D 61 Shorshan C I to III	chil/V- 3,CS-3		CS-4		CHIL li a/1,deo V/1
	D 68 Udhmo C I & II			chil V/1		
Kandha	D 70 Shil Badyar I					
	D 71 Shil Badyar C I a to II			DS-2		
	D 72 Reshtadhar C I a to IV	chil IV/1		DS-1, Deo V/1, chil III/1	DS-2	chil V/1,chil III/1, deo V/2
	D 73 Gherlohal C I & II					Chil V/2,CS
Belar	D 62 Kuns C I to III			chil V/8		
	D 63 Panlaru			Chil V/3,	Deo IV/1,DS-3	
	D 64 Salana Dogon					
	D 66 Salalana Dagoh II				chil V/2,chil IV/1	
	D 67 Thuhadhar C I to III			CS=1, chil V/2	chil V/1 & IV/1	chil V/7,CS- 4
Kardai	D 46 Frash	CS- 16		CS-3	CS-2	
	D 47 Chhaj	Chil IV/3,CS-3				chil IV/1
	D 48 Mashog			CS-7		
	D 50 Kotbehal II			CS-2	Chil V/1	CS-4
	D 51 Kot behal III			CS-1		
	D 55 Janol				chil V/2	

Tattapani	D 92 Sarour						Khair V-1, IV-2
	D 99 Braiker						
	D 100 Ghangoor						Saleda V/1
Balindi	D 74 Perbain				Chil II A/2, CS/1		
	D 78 Kandha C I & II				chil V/2 & IV/1		
	D 82 Deviket C I & II						
Alisindi	D 77 Gurju Dhar						Khair IV/2
Talehan	D 104 Vesta				CS-1		Chil V/6
	D 105 Khadehan						
	D 110 Ghaula C I to VI						
	U 2 Belar					chil V/2, CS-4	
SEBI							
Chouridhar	D 228 Bhunda Shill C I a to C III b					DS-2	
Nanj	D 222 Pog C I to C V					KS-1	
Dhamoon	D 225 Dhamoon C I to C III b	DS-10, chil II A/1			DS-7, kail V/1	DS-2	DS 9
Khadra	D 226 Khadra C I to C V b					DS-1	
	D 227 Charog C I to C III b	DS-22, a/4	DS-3			KS-2	DS-2
Niharinal	D 212 Singh II						
	D 216 Ganai						
Kalkosh	D 234 Sundroo C I to C V b						
Gowalpur	D 254 Sushan C I to C IV				deo II A/2		deo V/1
Teban	D 241 Kandloo C I a to C III b				Chil III/2, DS-3		
	D 245 Fimo C I to C II				Chil II A /2		
Pokhi	DD 240 Bahai C I a to C IV b				kail V-2		
Sarhan	D 249 Makra C I a to C III b				deo V/1	chil V/2	
MAGROD							
Serimangarh	D 291 Phaldhar C I to C II		Rai V/2				
	D 292 Sini naryan C I to C II				Rai V/1		
	D 296 Balhi shill C I to C III						
	D 297 Surahi C I to C III						
Choura	D 284 Karsain bir						
	D 273 Lassl						
Thanser	D 268 Janehar C I to C II						Deo V/1
	D 269 Kalanju C I to C II						
	D 270 Ruhmani C I to C III				Rai V/2		
Mahog	D 255 Shagach C I a to C VII				Deo V/1		
	D 256 Jagol C I a to C II						
Katanda	D 259 Lotala(O) C I a to C VI d				deo IV/1		Deo V/1
Kathaundhar	D 262 Kathondhar C I a to C IV						
Sagagl	D 265 Khatool(O) C I to C II						Deo V/2
	D 266 Lahari shill C I to C III	DS-20					
CS=		62	68	11	61	28	230
DS=		28	35	25	38	14	140

Chil V=	26	22	4	3	2	57
Deo V=	25	4	1	8	2	40
Chil IV=	3	0	4	3	0	10
Deo IV=	8	0	0	0	1	9
Chil III=	5	2	1	1	0	9
Deo III=	2	1	0	0	0	3
Chil IIA=	0	1	0	0	0	1
Chil IIB=	0	0	1	0	0	1
Deo IIA=	0	0	0	1	0	1
Deo IIB=	0	0	0	1	0	1
KS=	10	6	1	0	0	17
Kail V=	4	0	0	1	0	5
Kail IIB=	0	0	0	1	0	1
BS=	4	0	0	1	0	5
Ban V=	7	0	0	0	0	7
Rai V=	4	0	0	2	0	6
Rai IV=	1	0	0	0	0	1
EuS/ V=	0	0	0	0	0	0
Total Illicit	189	139	48	121	47	544
					Sapling	392
					V Class	115
					Total	507
				Other	Classes	92

Annexure V

Man-Animal conflict Incidences from 2000-10 in Karsog division							
Range/ Block/ Beat	Date of attack	Location of Attack	Animal causing damage	Detail of loss		Nature of Injury	Compensation
				Human	Cattle		
Pangna/Tattapani	11/2/2001	cow shed	leopard		horse-1/jersey cow-1	dead	2000
Karsog/Mamail	12/15/2001	do	do		sheep-6	do	do
Karsog/Mamail/Mamail	10/16/2001	do	do		jersey cow-1	-	-
Karsog/Bagshad/	2/16/2001	do	do		jersey cow-1, buffalo-1	do	5,000
Pangna/Tattapani/Talehan	2/16/2001		do		horse-1	do	2,000
Karsog/Bagshad/Talehan	8/17/2001	shed	do		ox-2, sheep-4	do	4,000
Karsog/Bagshad/Mahunag	10/5/2002	do	do		goat-3,	do	1200
Pangna/Tattapani/Alsindi	10/23/1999	do	do		goat-4		1,500
Seri/Rhichni/Kotkosh	8/24/2002	do	do		goat-5		2,000
Magroo/Mahog/Shagagi	Feb-01	do	do		goat-25		9,375
Pangna/Tattapani/Tattapani	6/23/2002	do	do		mule-1		2,500
Pangna/Chindi/Shorshan	2/15/2000	do	do		jersey cow-1		2,500
Pangna/Tattapani/Talehan	2/16/2002	do	do		mule-1		2,500
Pangna/Tattapani/Talehan	11/2/2001	do	do		horse-1, j cow-1		5,000
Karsog/Mamail/Mail	3/13/2003	do	do		sheep-2		800
Pangna/Tattapani/Alsindi	6/29/2003	DO			GOAT-7, sheep-1, buck-3		4,125
Karsog/Karsog/Kakahan	11/20/2003	D-161, dhumeha IC-II	DO		Bull-1		625
Pangna/Tattapani/Alsindi	8/30/2003	D-86 Lochar	Wild Bear	Self		minor	1,875
Karsog/Karsog/Sanarli	1/14/2004	D-Tikkerkarsog C II b	leopard	Self		minor	1,875
Seri/Seri/Dhamun	5/17/2004	D-225 Dhamoon	do		ox-1		625
Karsog/Karsog/Kamand	7/24/2004	d-150 Jhaprala	do	Self		injury	1,875
Seri/Seri/Dhamun	11/3/2004	D-225 Dhamoon	Black bear	Self			1,875
Karsog/Mamail/Bhanera	1/21/2005	cowshed	leopard		ram-1		375
Pangna/Tattapani/Tattapani	4/23/2005	do	leopard		mule-1		2,500
Pangna/Tattapani/Tattapani	4/23/2005	do	do		j/cow-2		2,500
Seri/Gawalpur/Tebban	10/10/2004	do	do		mule-1		2,500

Karsog/Mamail/Mehandi/	11/12/2004	do	do		1/cow-2		2,500
Karsog/Bagashar/Bagashar	7/14/2004	D-111- Bagashar	do	Sell		major	33,000
Karsog/Bagashar/Sapnot	3/11/2005	village	do		1/cow-2, local cow-1	dead	3,125
Karsog/Tattapani/Tattapani	6/19/2005	Cowshed	do		Sheep-3	do	1,125
Pangna/Tattapani/Aisindi	8/23/2005	D-Kot Kaddyas	Wild Bear	Sell		Major	33,000
Karsog/Karsog/Dopha	9/15/2005	cowshed	Leopard		Sheep- 6, Goat-3	Dead	3,375
Karsog/Karsog/Dopha	10/1/2005	D-172 Dopha	do		Goat-8	do	3,000
Karsog/Mamail/Mamail	11/3/2005	cowshed			Mule-1	DO	2,500
Seri/Gawalpur/Sarahan	9/4/2005	DPF-Makro	do	Self		Major	33,000
Karsog/Mamail/Bhanera	1/29/2006	cowshed	do		Sheep-3	dead	1,125
Karsog/Mamail/Ghalyach	1/19/2006	cowshed	do		Sheep- 2, Goat-1	Dead	1,125
Karsog/Mamail/Bhanera	2/8/2006	Cowshed	do		Sheep-3	dead	1,125
Seri/Seri/Nanj	10/11/2005	cowshed	do		Goats-19	dead	7,125
Karsog/Mamail/Mendhi	10/17/2005	cowshed	do		mule-1	dead	2,500
Seri/Rhichni/Kotkosh	1/2/2006	cowshed	do		Sheep- 3, Goat-3	dead	2,250
Karsog/Karsog/Dopha	1/30/2006	D-172 Dopha	do	Self		Minor	1,875
Karsog/Karsog/Dopha	12/30/2005	D-172 Dopha	do	Self		minor	1,875
Karsog/Mamail/Ghalyach	2/8/2006	cowshed	do		Goats-2	dead	750
Karsog/Bagashar/Sapnot	4/23/2006	cowshed	do		1/Cow-1	dead	2,000
Karsog/Karsog/Dopha	2/16/2006	D-172 Dopha	DO	Self		Minor	1,875
Karsog/Mamail/Mamail	10/30/2006	in field(Malleiti)	Wild Bear	Self		major	5,000
Pangna/Chindi/Behar	4/20/2006	cowshed	leopard		Goats-7	dead	2,625
Pangna/Tattapani/Talehan	11/25/2005	cowshed & D- 102 Talehan	leopard		Goats-9	dead	3,375
Pangna/Tattapani/Talehan	11/25/2005	village	do		Bull-4	dead	2,500
Magroo/Mahog/Mahog	1/27/2007	D-261 Gurjub C I to CV	do	Sell		major	33,000
Seri/Rhichni/Kotkosh	11/29/2006	D-261 Gurjub C II	do		Bull-2	dead	3,000
Magroo/Mahog/Mahog	11/15/2000	D-255 Sagach C IV	do		Horse-1	dead	4,000
Thakurthana/Soma	7/28/2007	Shed	do		Goats-3	dead	1,125
Behala/Sarahan	10/31/2007	Shed	do		Goats-3	dead	1,125
Kashapari/MahunNag	2/5/2008	Shed	do		Goats-15	dead	5,625
Dhumroo/Sokakthi	5/5/2008	Shed	do		1/Cow-1	dead	2,500
Behu/Chauridhar	6/24/2005	D-230 Charbar	do		Sheep-7	dead	2,800
Barkhunda/Seri	5/6/2008	Shed	do		1/Cow-1	dead	2,500
Shalani/Sapnot	7/28/2008	D-119 Mehain	do	Self		major	33,000
Ganu/Nanj	6/10/2008	DPF-Ganu C-II	do		Sheep-5	dead	2,000
Belu/Khaneol	10/4/2008	D-227 Charog	do		Horse-1	dead	1,500

Teban/teban	10/14/2008	Shed	do		mule-1	dead	2,500
Baag/Shakra	2/22/2008	shed	do		Goats-8	dead	3,000
Shagildhar/Mahog	7/5/2009	khaliyan	Black Bear	Self		major	33,000
Baili/Sumokothi	8/14/2009	D-233 Richni-II	leopard		1/Cow-2	Dead	3,000
Balahani/Chauridhar	7/28/2009	D-228 Bhundashill	do		1/Cow-2	dead	3,000
Nalohi/Polahi	7/7/2009	D-241 Orahal	do	Self		major	33,000
Drast/Bantal	7/11/2009	Stable	do		Colt-1	dead	250
long/Mehandl	9/7/2009	D-209 long	do		Ox-1	dead	625
Jail/Sapnot	9/22/2009	Shed	do		Goats-1	dead	375
Ghork/Gwalpur	8/17/2009	D-256 Jagol	do		Horse-1	dead	1,500
Bhair/Bhiani	8/1/2009	D-297 Surahi	do		Horse-1	dead	1,500
Pangna/Tattapani/Tattapani	8/28/2009	Shed	do		1/Cow-1	dead	2,500
Rashog/Tebban	11/10/2008	Shed	do		Sheep-5	dead	1,875
Dambod/Balahani	7/30/2009	D-230 Charbar	do	Self		major	33,000
Jeori/Tattapani	7/25/2009	Kitchen	Monkey	Self		minor	5,000
Saned/Kunnu	1/19/2010	D-159 Sanad	leopard	Self		minor	5,000
Shopa/Karsog	2/16/2010	Near House	leopard	Self		minor	5,000
Dib/Jassal	2/25/2010	Near House	leopard	Self		major	33,000
Roparu/Jassal	2/25/2010	Near House	leopard	Self		major	33,000
Kunthari/Mehandl	2/27/2010	Shed	leopard		Goats-3	dead	1,125
Bakhulati/Kelodhar	10/11/2006	D-233 Richni	leopard	Self		major	33,000
Rodi/Balandi	7/13/2010	Shed	leopard		Goats-2	dead	750
Bagali/Khaneli Bagra	11-10-10	victim's Farm	Black bear	Self		minor	5,000
Tattapani/Tattapani	9/24/2010	Varandha victim's house	Monkey	Self		minor	2,100
						Total	547150

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Magroo	Magroo	Chaura	Raidhar	4	0.0	0.0	0.0	1.0	0.0	0.0	0.0	3.4	0.0	0.0	0.0	0.0	0.0	0.0	4.4
Magroo	Magroo	Chaura	Chain	2	1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.6
Magroo	Magroo	Lassi	Nadaur	3	3.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3.3
Magroo	Magroo	Chauri	Karsaur	5	0.0	0.0	0.0	5.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	5.5
Magroo	Magroo	Lassi	Nadaur	13	14.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	14.3
Magroo	Magroo	Chaura	Karsaur	5	0.0	0.0	0.0	7.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	7.5
Magroo	Magroo	Chaura	Chhounal	5	0.0	0.0	0.0	7.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	7.5
Magroo	Magroo	Chaura	Kai-dhod	3	0.0	0.0	0.0	3.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3.0
Magroo	Magroo	S/Magroo	Hall	3	4.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	4.5
Magroo	Magroo	Chaura	Raidhar	3	0.0	0.0	0.0	5.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	5.5
Pangana	Tatapani	Tatapani	Sarour	3	0.0	0.0	0.0	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.4
Pangana	Tatapani	Techar	Besla	3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.6
Pangana	Tatapani	Talchar	Talchar	4	0.0	0.0	0.0	0.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.5
Pangana	Tatapani	Tatapani	Sahaj	2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2
Pangana	Tatapani	Tatapani	Sahaj	1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.1
Pangana	Tatapani	Talchar	Talchar	5	0.0	0.0	0.0	3.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	5.5
Pangana	Tatapani	Alisndi	Ahas	6	0.0	0.0	0.0	1.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	5.8
Pangana	Tatapani	Tatapani	Tatapani	3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	7.6
Pangana	Tatapani	Tatapani	Tatapani	3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.9
Pangana	Tatapani	Tatapani	Tatapani	3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.3
Pangana	Tatapani	Tatapani	Jeon	5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.7
2002-03																			
Magroo	Magroo	S/Magroo	ND297 Srihi	3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	4.0
Magroo	Magroo	Lassi	ND279 Nadaun	3	3.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3.3
Magroo	Magroo	Thanser	ND271 Rumare	3	2.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.7
Magroo	Magroo	S/Mangam	OU260 Nadaun	6	6.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	6.6
Magroo	Magroo	Chaura	OU274 Chhatin	2	3.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3.0
Magroo	Magroo	S/Mangam	OU92 Semaren	1	1.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.5
Pangana	Tatapani	Tatapani	ND-95 Jeon	3	0.0	0.0	0.0	0.0	0.0	1.1	3.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	5.5
Pangana	Tatapani	Alisndi	OU-84 Alias	2	0.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.3
Pangana	Tatapani	Alisndi	OU-84 Alias	6	2.0	0.0	0.0	1.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	4.9
Pangana	Tatapani	Tatapani	ND24 Tatapani	2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.8
Pangana	Tatapani	Talchar	ND103 Talchar	2	0.0	0.0	0.0	0.7	0.0	1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3.0
Pangana	Tatapani	Talchar	ND-108 Dudhli	4	0.0	0.0	0.0	0.0	0.0	2.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.7
Pangana	Tatapani	Balindi	ND-74 Parban	2	0.0	0.0	0.0	3.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.0
Pangana	Tatapani	Tatapani	ND-96 Kdiya	2	0.0	0.0	0.0	0.0	0.0	5.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.4
Uria	Uria	Tharat	Har-1	2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.5
2003-04																			1.6
Magroo	Magroo	Chaura	OU280 Nadaun	4	2.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.4
Magroo	Magroo	Chaura	OU281 Chonai	3	3.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3.3
Magroo	Magroo	S/Mangam	OU-Serinayain	3	3.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3.3
Magroo	Magroo	Larsi	OU279 Nachan	3	0.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.4
Magroo	Magroo	Chaura	OU294 Kersabi	1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1
Magroo	Magroo	Chaula	OU-281 Chonai	2	3.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3.0
Magroo	Magroo	Chaula	ND283 Rah	4	6.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	6.0
Magroo	Magroo	S/Mangam	OU-288 Hall	5	1.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.0
Magroo	Magroo	Larsi	OU-278 Nall	2	3.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3.0

Annexure VII

BRIDLE PATHS AND FIRE LINES IN CHIL FORESTS

Beat	Name of forests	Area in ha.	Area under Chil working circle	Name of Fire Line	Length (KM)	Name of B/ path	Length (KM)
Mamail	Mamail with HQ at Mamail					Mamail to Kelodhar	5
Mamail						Mamail to Bhanera	3
	D 178 Bacharu	8.75	8.75				
	D 179 Mamail dhar	14.07	14.07				
	D 181 Sanahdhar C I to C IV	81.46	81.46				
	D 182 Shil C I a to C II b	45.24	45.24				
	D 183 Mahadev ki Banoni C I a to C II	74.9	74.9				
	D 184 Mahadev ki Banoni I	35.85	35.85				
	D 185 Mahadev ki Banoni II	44.91	44.91				
		305.18	305.18				
Ghalach	Ghalach with HQ at Nehra					Battia Behil to Kabaga	6
Ghalach						Pehran to Latheri	5
	D 175 Pehran C I a to C II c	133.07	46.94				
	D 176 Ghalach C I to C II	102.05	102.05				
	D 177 Nehra	10.23	0				
	D 180 Tkal dhar C I a to C II b	101.27	101.27				
		346.62	250.26				
Bhanera	Bhanera with HQ at Bhanera		0			Mamail to Bhanera	2
	D 186 Kelodhar Saranda C I to C III	101.67	101.67				
	D 187 Kelodhar Saranda C I to C IV b	215.6	215.6				
	D 193 Katak C I to C III	82	60.99				
	D 194 Bheron Shil	13.56	13.56				
	D 195 Bhagyat	2.2	2.2				
	D 196 Kudridhar	3.93	3.93				
	D 197 Karol	12.62	12.62				
	U 16 Bhanera	1.70	1.7				
		433.28	433.27				
Mendhi	Mendhi with HQ at Mendhi					Jong to Garyala	3
Mendhi						Mehandi to Chakra	5
Mendhi						Kashoul to Mehendi	3
	D 200 Boh Parala	22.81	22.81				
	D 201 Adli Dhar	21.83	0				
	D 202 Parla Dharoo C I to C IV	104.49	88.53				
	D 203 Thach C I to C II	90.73	90.73				
	D 204 Shunahu	64.98	64.98				
	D 205 Sarti	18.08	18.08				
	D 206 Pabo	14.76	14.76				
	D 207 Gandhoi C I to C II	171.82	55.93				
	D 208 Majhod C I a to C II	347.7	30.89				
	U 17 Chalauni	16.6	16.6				
	U 18 Kot	6.75	6.75				
		880.55	410.06				
Kashoul	Kashoul with HQ at Kashoul					Kashoul to Mehendi	3
	D 188 Kandhi C I to C V b	194.06	10.44				
	D 189 Kandhi	6.30	0				
	D 190 Bagh I	4.09	4.09				
	D 191 Bagh II	3.89	3.89				
	D 192 Bagh	23.96	23.96				
	D 198 Dhanyara I	52.55	0				
	D 199 Dhanyara II	36.11	0				

		110.96	62.18				
	TOTAL OF MAMAIL BLOCK	2286.59	1440.15				
Kakahan	Kakahan with HQ at Karsog					Kakahan to Sarkoldhar	1
Kakahan						Bakhrol to Karsog	5
Kakahan						Charkufri to Karsog	2
	D 161 Duniel C I to C II	97.36	97.36				
	D 162 Kanjol C I to C III	102.18	102.18				
	D 163 Kot	11.96	11.96				
	D 164 Mashogra	5.65	0				
	D 165 Chandhi C I to C II	14.2	15.74				
	D 166 Chakranth C I to C III	73.2	50.41				
	U 13 Kalaini Khudla	25.6	0				
		340.15	277.65				
Kamand	Kamand with HQ at Saow					Charkufri to Matehal	4
Kamand						Charkufri to Karsog	4
	D 148 Karani C I to C II	25.9	11.28				
	D 149 Chandu	36.85	36.85				
	D 150 Jhau Parala C I a to C II b	112.59	112.59				
	D 151 Karadal	9.00	9				
	D 152 Marndhi C I to C II	60.27	60.27				
	D 153 Dharanda C I to C II	62.93	62.93				
	D 154 Magheri	7.55	0				
	D 155 Batahal	24.22	0				
	D 156 Kandha I	23.06	23.06				
	D 157 Kandha II	60.69	60.69				
	D 158 Kufrihar	24.15	24.15				
	D 159 Saned	28.90	28.9				
	D 160 Chalaunhi	10.74	10.74				
	U 11 Kufrihar	39.24	0				
	U 12 Saoni	9.1	9.1				
		565.19	479.64				
Sanarli	Sanarli with HQ at Sanarli					Sanarli to Madhag	6
Sanarli	D 169 Tiker Karsog (N)	2.37	0			Sarkol to Sainthal	5
Sanarli	D 170 Tiker Karsog C I a to C IV c	385.22	146.45			Kakahan to Sarkoldhar	3
	U 14 Chhal	2.16	2.16				
	U 15 Jadhog	14.49	14.49				
		404.24	277.97				
Dopha	Dopha with HQ at Bamna (Nihani)					Mehradhar to 3.5 mainridge running from Shikari Devi to Kelodhar	
	D 171 Dopha-II C I to C VIII	236.70	53.68				
	D 172 Dopha-I C I to C VII	407.57	255.19				
	D 173 Dopha C I a to C IV g	824.46	0				
	D 174 Pun peheran	3.90	0				
		1472.72	308.87				
	TOTAL OF KARSOG BLOCK	2282.30	1344.05				
			0				
Bagshad	Bagshad with HQ at Bagshad		0			Charkufri to 2 Bagshad	

	D 111 Bakhar C I a to C II e	613.77	613.77			
	D 112 Thaloo	13.12	13.12			
	D 113 Khamarao C I to C II	50.51	50.51			
	D 114 Flandi	2.86	2.86			
	D 115 Khamarao	4.30	4.3			
		704.56	704.56			
Dharmour	Dharmour with HQ at Dharmour		0	Dharmour to Bagshar	3	
	D 116 Dharmour C I to C II	71.55	71.55			
	D 117 Dharmour Alaid C I to C II	39.91	39.91			
	D 118 Xoi C I to C II	61.72	61.72			
	D 119 Meharan C I a to C II f	268.56	268.56			
	D 120 Jingal	6.45	6.45			
	D 121 Basolli	9.18	9.18			
	D 122 Chalot	2.11	2.11			
		459.48	459.48			
Parlog	Parlog with HQ at Parlog		0			
	D 125 Dudhali II	39.19	0			
	D 126 Kashot III	270.59	0			
	D 127 Kashot	90.35	90.35			
	D 128 Kashot II	400.87	0			
	D 129 Palot	20.98	20.98			
	D 130 Manhu I	26.39	0			
	D 131 Parnot	144.05	0			
	D 132 Manhu	27.41	27.41			
	D 133 Hiru	279.05	0			
	D 134 Magan	148.15	0			
	D 135 Falan	285.08	0			
	D 136 Parlog	104.39	0			
		1786.65	138.74			
Mahunag	Mahunag with HQ at Mahunag				Mahunag to Chawa	8
Mahunag					Mahunag to Sartoyala	5
Mahunag					Sartoyala to Chawa	5
	D 123 Tiker Kapahari	59.77	59.77			
	D 124 Kalhauta C I a to C IV	241.86	179.3			
	D 137 Nagletha	694.09	649.09			
	D 138 Bag Bakhari C I a to C III	473.42	174.03			
		1469.14	1062.14			
			0			
Sapnot	Sapnot with HQ at Sapnot		0			
	D 139 Odda C I to C III b	155.94	125.47			
	D 140 Dharanda	13.43	13.43			
	D 141 Thanger	30.36	30.36			
	D 142 Bilasoo C I to C II	41.18	41.18			
	D 143 Kandhi Dhech	9.86	0			
	D 144 Karmir	23.45	0			
	D 145 Kashmir III	27.55	17.55			
	D 146 Kashmir II	54.24	54.24			
	D 147 Kashmir IV	28.08	18.08			
		193.09	130.31			
	TOTAL OF BAKSHAD BLOCK	4813.93	2695.38			
	TOTAL OF KARSOQ RANGE	9881.81	5479.48			
Pangna	Pangna with HQ Pangna				Pangna to Mashog	03
Pangna					Paralakashout to Shall	1
	D 16 Chetri Mandi	24.56	24.56			

	D 17 Chattri Suket	29.05	29.05				
	D 18 Chattri Mandi I	6.61	6.61				
	D 20 Hange Nal	20.53	20.53				
	D 21 Bonas Nal	9.40	9.4				
	D 32 Sahal	23.93	0				
	D 45 Sundrahal	75.55	75.55				
		189.63	165.7				
Begli	Begli with HQ at Kandha					Paralakashout to Shivadehra	5
	D 30 Begli (Mandi)	48.37	0				
	D 31 Dahi	8.85	8.85				
	D 33 Kheneog	31.99	31.99				
	D 34 Tikkar	57.83	57.83				
	D 35 Sanjog C I & II	55.63	55.63				
	D 38 Bukaran C I to III	171.97	0				
		174.64	154.3				
			0				
Gushal	Gushal with HQ at Gushal		0	Bakhrot to Shiva Dehra	5		
	D 36 Kandhi	24.11	24.11				
	D 37 Bhanach	36.98	36.98				
	D 39 Shil C I & II	158.59	34.43				
	D 40 Baihu C I to III	102.99	67.83				
		372.67	163.35				
			0				
Surahi	Surahi with HQ Galyog		0				
	D 1 Mahog	40.42	0				
	D 2 Jalaun	2.87	2.87				
	D 3 Neand	5.37	0				
	D 4 Jud	21.05	21.05				
	D 5 Maral Dhan	3.64	0				
	D 6 Panjoru	84.13	84.13				
	D 7 Chh Sarahi	6.08	6.08				
	D 8 Panjoru	53.16	53.16				
	D 9 Suhi	7.36	0				
	D 10 Kalo Sarahi	7.14	0				
	D 11 Kail Sarahi	8.04	0				
	D 12 Bhyana	24.40	0				
	D 13 Bahan Nal	13.71	0				
	D 14 Sadas	21.41	21.41				
	U 1 Prehti	1.80	1.8				
		300.58	290.5				
	TOTAL OF PRANGNA BLOCK	1187.52	673.85				
			0				
Kutachi	Kutachi with HQ at Kutachi		0			Khulad to Dada	4
	D 22 Chhadhaini-dem C I to IIC	203.43	0				
	D 23 Baenog	53.33	0				
	D 24 Baenog	26.14	26.14				
	D 25 Basundra	169.98	0				
	D 26 Chohara C I a to IV b	244.25	0				
		697.13	26.14				
Shalog	Shalog with HQ at Bah		0				
	D 15 Rakni I to II b	85.08	128.38				
	D 19 Shalog C I a to VI	300.42	49.78				
		385.5	178.16				
			0				

Machhrat	Machhrat with HQ at Dhourl		0				
	D 27 Mahasu C I to VI b	414.2	75.76				
	D 28 Mahasu	5.36	0				
	D 29 Begli Suket C I & II	122.98	85.74				
		542.54	161.5				
	TOTAL OF KUTANCHI BLOCK	1635.17	365.8				
			0				
Chindi	Chindi with HQ at Chindi		0	Chindi to Chitadhartoo	3	Chita Dhartu to Kaneri	2
Chindi						Chindi to M...	0.6
	D 41 Bakhras C I to III	230.65	173.97				
	D 42 Charkufri C I & II	85.01	58.12				
	D 43 Kaneri C I & II	142.82	142.82				
		458.48	374.91				
			0				
Shorshan	Shorshan with HQ at Rajot		0			Sorshan to Khaplas	1.7
	D 58 Dharmour C I to III	128.39	128.39				
	D 59 Dharmour	3.55	0				
	D 60 Himri	9.37	9.37				
	D 61 Shorshan C I to III	135.95	135.95				
	D 68 Udhmo C I & II	64.08	64.08				
		341.34	337.79				
			0				
Kandha	Kandha with HQ at Paragali		0	Pargagali to Restadhar	3		
	D 69 Shill Badvar II	6.87	6.87				
	D 70 Shill Badvar I	38.93	38.93				
	D 71 Shill Badvar C I a to II	105.27	55.12				
	D 72 Reshtadhar C I a to IV f	610.19	266.47				
	D 73 Gheriohal C I & II	295.46	173.78				
		1056.72	541.17				
			0				
Belar	Belar with HQ at Dhow		0				
	D 62 Kuns C I to III	74.62	74.62				
	D 63 Panlari	99.81	99.81				
	D 64 Salana Dagon	64.56	64.56				
	D 65 Salanadagoh	9.04	0				
	D 66 Salalana Daogh II	26.85	26.85				
	D 67 Thuhadhar C I to III	76.2	76.2				
	U 2 Belar	53.28	0				
		404.36	342.04				
			0				
Kardal	Kradal with HQ at Dyalpur		0			Chamanpur to Shini	1
	D 44 Kardal	14.72	14.72				
	D 46 Frash	68.36	68.36				
	D 47 Chhai	39.67	39.67				
	D 48 Mashog	39.51	39.51				
	D 49 Kotbehall I	23.57	23.57				
	D 50 Kotbehall II	15.82	15.82				
	D 51 Kotbehall III	16.17	16.17				
	D 52 KotBahal	16.02	16.02				
	D 53 Kotbehall IV C I & II	70.97	70.97				
	D 54 Sarai	36.00	36				
	D 55 Janol	59.18	59.18				
	D 56 Kardal C I & II	80.88	80.88				
	D 57 Narota Nagra	31.63	31.63				
		512.5	512.5				

	TOTAL OF CHINDI BLOCK	2773.40	2108.41				
Tatapani	Tatapani with HQ at Tatapani					Tatapani to Kirya	0.5
	D 92 Sarbur	61.42	0				
	D 93 Thogi	53.80	0				
	D 94 Tatapani	35.41	0				
	D 95 Jeeol	46.13	0				
	D 96 Saji	27.13	0				
	D 97 Serl Saru	11.43	0				
	D 98 Kodya	140.66	0				
	D 99 Bialker	27.30	0				
	D 100 Ghangoor	111.93	0				
	D 101 Nando	401.50	0				
	U 7 Bardli	22.50	0				
	U 8 Bad yag	190.30	0				
	U 9 Thalli	10.60	0				
	U 10 Jaru	30.78	0				
		1224.87	0				
			0				
Blindi	Blindi with HQ at Blindi		0				
	D 74 Perban	1046.21	0				
	D 78 Kandha C I & II	220.41	220.41				
	D 79 Mohuru Dhak C I & II	82.02	0				
	D 80 Kandha	116.87	0				
	D 81 Bag	7.68	7.68				
	D 82 Devikat C I & II	186.92	186.92				
	D 83 Mandap	185.38	185.38				
		1843.49	400.39				
Alindi	Alindi with HQ at Alindi		0				
	D 75 Chatter	51.83	0				
	D 76 Kaddyas	178.54	0				
	D 77 Gurju Dhar	28.87	0				
	D 84 Alias	352.78	352.78				
	D 85 Tauru C I & II	83.55	45.71				
	D 86 Lochad C I & II	59.27	59.15				
	D 87 Saran	15.64	0				
	D 88 Chanyana	28.75	0				
	D 89 Mohta II	5.83	0				
	D 90 Mohta I	9.45	0				
	D 91 Balinghi	18.58	0				
	U 3 Tharyuntha	16.10	0				
	U 4 Alias	32.20	0				
	U 5 Lochhad	30.40	0				
	U 6 Troul	26.80	0				
		1038.59	457.64				
			0				
Talehan	Talehan with HQ at Talehan		0			Shalung to Talehan	3
	D 102 Talehan C I a to IV	421.8	348.01				
	D 103 Telhan	313.72	0				
	D 104 Vesta	268.84	0				
	D 105 Khadehan	148.91	0				
	D 106 Bhaura	161.20	0				
	D 107 Guma	122.52	0				
	D 108 Dudhak I	23.18	0				
	D 109 Ghaula	42.16	42.16				
	D 110 Ghaula C I to VI	245.08	245.08				
		1747.41	635.25				
	TOTAL OF TATAPANI BLOCK	5856.36	1693.28				
	UPS OF PANGANA RANGE		0				

	U 1 Prehti	1.80	0				
	U 2 Belar	53.28	0				
	U 3 Thalvuntha	16.10	0				
	U 4 Alias	32.20	0				
	U 5 Lochhad	30.40	0				
	U 6 Trou	26.80	0				
	U 7 Bandli	22.50	0				
	U 8 Radvog	190.30	0				
	U 9 Thalli	10.60	0				
	U 10 Jeru	30.78	0				
	TOTAL OF UPF'S	469.76	0				
	TOTAL OF PANGNA RANGE	10972.69	10972.69				
	GRAND TOTAL OF PANGNA RANGE	11442.45	0				
		TOTAL CHIL	4869.59				
		WC	0				
Chauridhar	Chauridhar HQ at Chauridhar		0				
	D 228 Bhunda Shil C I a to C III b	113.99	88.6				
	D 229 Jachh C I to C III	108.04	50.82				
	D 230 Chabor C I to C V	148.53	148.53				
		368.56	297.95				
			0				
Nani	Nani with HQ at Nani		0				
	D 220 Paro C I to C II	64.53	0				
	D 222 Pog C I to C V	310.61	50.1				
	D 223 Tundal Balh	23.23	0				
	D 224 Mumbhu C I to C V	67.7	67.7				
		466.07	117.8				
Dhamoon	Dhamoon with HQ at Saini		0				
	D 219 Ganu C I to C II	123.78	52.32				
	D 221 Kalauni C I to C II	58.32	0				
	D 225 Dhamoon C I to C III b	209.54	0				
		389.64	52.32				
			0				
Khadra	Khadra with HQ at Batauhan		0				
	D 226 Khadra C I to C V b	266.68	89.37				
	D 227 Charoe C I to C III b	196.53	157.3				
		463.21	246.67				
			0				
Nihari	Nihari Nal with HQ at Khaneel		0				
	D 209 Jaung	71.43	0				
	D 210 Singh Kufri C I to C II	38.37	11.94				
	D 211 Singh I	37.13	0				
	D 212 Singh II	10.00	10				
	D 213 Nihari Nal C I a to C IV c	371.76	26.8				
	D 214 Jhuanjan	528.52	0				
	D 215 Sini	62.31	62.31				
	D 216 Ganai	33.89	0				
	D 217 Sanach	85.53	0				
	D 218 Sainjali C I to C II	90.88	45.64				
	U 19 Jhulan	29.83	0				
		1409.65	156.69				
	TOTAL OF SERI BLOCK	3097.13	871.43				
			0				
			0				
Pathrevi	Pathrevi with HQ at Khokhana		0				
	D 216 Pathrevi C I a to C IV b	506.22	0				
	D 217 Kafanda C I a to C II d	265.8	127.89				
		772.02	127.89				
			0				

Kotkosh	Kotkosh with HQ at Kotkosh		0			
	D 234 Sundroo C I to C V b	213.14	49.91			
	D 235 Dhurmoa C I a to C V	227.51	227.51			
		440.65	277.48			
			0			
Richni	Richni with HQ at Kelodhar		0		Kelodhar to Mahog	6
Richni					Kelodhar to Kotkosh	6
	D 233 Richni C I a to C III a	598.11	434.06			
		598.11	434.06			
			0			
Seri	Seri with HQ at Khanlari		0			
	D 231 Shiladhar C I to C V	169.42	169.42			
	D 232 Surandha C I to C III	76.79	64.29			
		246.21	233.71			
	TOTAL OF RICHNI BLOCK	2056.99	1073.14			
			0			
Gowalpur	Gwalpur with HQ at Gwalpur		0		Tebban to Gowalpur	6
	D 251 Kavori	29.24	0			
	D 252 Nagari C I a to C II c	264.04	179.6			
	D 253 Jakhori C I to C III	129.66	129.66			
	D 254 Surhan C I to C IV	169.32	31.8			
		592.26	341.06			
			0			
Teban	Taiban with HQ at Taiban		0		Tebban to Gowalpur	2
	D 241 Kandloo C I a to C II b	390.8	141.52			
	D 242 Buna	64.74	0			
	D 243 Kot Dhar	40.17	0			
	D 244 Kot Kumari	11.41	0			
	D 245 Firoo C I to C II	88.91	0			
		598.09	141.52			
			0			
Pokhi	Pokhi with HQ at Sihanj		0		Ropri Nal to Pokhi	5
	OD 238 Gadaron C I a to C II b	119.54	51.9			
	OD 239 Drail C I a to C II b	263.6	126.79			
	OD 240 Bahel C I a to C IV b	339.41	179.54			
		722.55	360.23			
			0			
Sarhan	Sarhan with HQ at Ashia		0		Sarhan to Ashia	1
Sarhan					Tebban to Gowalpur	2
	D 246 Chaura	12.23	12.23			
	D 247 Sarhan C I to C III	145.92	0			
	D 248 Fanoata C I to C II	34.40	0			
	D 249 Makra C I a to C III b	254.55	142.3			
	D 250 Bagridhar	53.01	0			
		500.11	154.53			
	TOTAL OF GWALPUR BLOCK	2413.01	997.34			
	TOTAL OF SERI RANGE	7567.13	2941.93			
			0			
Serimanga	Seri Mangarh with HQ at Seri Mangarh		0			
	D 287 Hall (O)	75.85	0			
	D 288 Hall (N)	10.63	0			
	D 289 Ghanidhar	19.34	0			
	D 290 Planidhar	70.66	70.66			
	D 291 Phaidhar C I to C II	75.74	0			
	D 292 Serinayan C I to C II	86.39	0			

	D 293 Sural C I to C II	86.24	0				
	D 294 Dargat	62.20	0				
	D 295 Saini	3.13	0				
	D 296 Balthi shill C I to C III	69.00	0				
	D 297 Surahi C I to C III	130.98	0				
		690.82	70.66				
Choura	Chhaura with HQ at Chhera		0				
	D 274 Chattri	38.55	0				
	D 280 Nadaun II	33.83	0				
	D 281 Chha Nal C I to C II	70.76	0				
	D 282 Chhura	12.63	0				
	D 283 Ralidhar	125.07	0				
	D 284 Karsain bir	144.15	144.15				
	D 285 Chaplandi	38.67	0				
	D 286 Lather shill	4.08	0				
		467.74	144.15				
Lassi	Lassi with HQ at Lassi		0				
	D 272 Lahair	50.88	0				
	D 273 Lassi	67.40	0				
	D 275 Kathnalle	68.90	0				
	D 276 Rachuwar Gahar(O)	70.39	0				
	D 277 Rachuwar Gahar(N) C I to C III	187.39	0				
	D 278 Nadaun	251.85	0				
	D 279 Nadaun I C I to C II	112.36	0				
		809.17	0				
			0				
Thanser	Thanser with HQ at Thanser		0				
	D 268 Janghar C I to C II	98.58	0				
	D 269 Kalanlu C I to C II	96.03	0				
	D 270 Ruhmani C I to C III	173.71	0				
	D 271 Ruhmani(N)	12.53	0				
		380.85	0				
	TOTAL OF MAGROO BLOCK	2348.58	214.81				
			0				
Mahog	Mahog with HQ at Mahog		0	Katanda to Mahog	3	Mahog to Shavad	6
	D 255 Shagach C I a to C VII	555.49	0				
	D 256 Jagol C I a to C II	145.72	80.86				
	D 257 Jagol C I to C III	125.22	83.12				
	D 258 Bagund C I to C II	56.84	6.11				
		883.27	170.09				
			0				
Katanda	Katandha with HQ at Katandha		0	Katanda to Mahog	3		
	D 259 Lotala(O) C I a to C VI d	616.97	0				
	D 260 Lotala(N) C I to C II	64.63	64.63				
	D 261 Guriub C I to C V	128.93	0				
		810.53	64.63				
			0				
Kathau	Kathau dhar with HQ at Nihra Seri		0				
	D 262 Kathondhar C I a to C IV	442.08	5.5				
	D 263 Kathau dhar	5.50	0				
	U 20 Tipra	9.81	9.81				
		457.39	15.31				
			0				
Sagazi	Sagazi with HQ at Tipra		0				
	D 264 Khatoo(N)	13.09	13.09				
	D 265 Khatoo(O) C I to C II	53.25	0				

	D 266 Bahari shal C I to C III	94.61	0				
	D 267 Sagradhar C I to C II	41.15	0				
		202.10	13.09				
	TOTAL OF MAHOD BLOCK	2353.29	263.12				
	TOTAL OF MAHOD RANGE	4701.07	477.93				
	TOTAL OF KARSOG FORESTDIVISION	33593.26	8899.32				
				TOTAL	25.5	TOTAL	153.6

Beat	Forests	1995				2004				2005				2006			
		Area affected (ha)	Forest Ha	Plantation Ha	Loss Rs	Area affected (ha)	Forest Ha	Plantation Ha	Loss Rs	Area affected (ha)	Forest Ha	Plantation Ha	Loss Rs	Area affected (ha)	Forest Ha	Plantation Ha	Loss Rs
Bhenara	D 186 Kelodhar Sarda C I to C III					50	50	nil									
Bhenara	D 186 Kelodhar Sarda C I to C III					150	150	nil									
Kashoul	D 188 Kandhari C I to C V b					15	15	nil									
Kashoul	D 189 Kandhari					18	18	nil									
Kashoul	D 199 Dhanwara II	170	170	nil	100,237												
Kajmand	D 150 Jhau Paralia C I a to C II b									1	1	nil	nil		6	1	5,40,000
Kormand	D 157 Kandha II	17	15	2	1,400												
Sarangi	D 170 Taker Kartog C I a to C IV c	60	22	18	15,200												
Dopha	D 173 Dopha C I a to C IV g	30	12	18	17,480												
Dharmour	D 117 Dharmour Alad C I to C II					20	70	nil									
Mahunag	D 117 Nagetha	150	160	10	2,875												
Mahunag	D 138 Bag Bakhari C I a to C III					35.4	15.4	nil									
Chindhi	D 41 Bakhras C I to III	31	26	5	30,000												
Chindhi	D 43 Kaneri C I & B					15	15	nil									
Kandha	D 72 Reshtadhar C I a to IV f	502	467	35	24,052												
Kandha	D 73 Gherlomal C I & II	270	267	23	14,650												
Asindi	D 84 Alia I					70	60	10									

Ass'n	D 86 Jochad C I & II	D 102 Terchan C I a to IV	D 224 Mumdu C I to C V	D 226 Khadia C I to C V b	D 227 Charog C I to C III b	D 227 Charog C I to C III b	D 213 Nahan Nal C I a to C IV c	D 235 Dhurmon C I a to C V	D 231 Shidhar C I to C V	D 255 Shagach C I a to C VII	2007				2008				2009				2010				
											Area affected	Forest Ha	Plantation Ha	Loss Rs	Area affected	Forest Ha	Plantation Ha	Loss Rs	Area affected	Forest Ha	Plantation Ha	Loss Rs	Area affected	Forest Ha	Plantation Ha	Loss Rs	
Talshah													150	130	20				79	71	8	104 000					
Nand													35	35	nil												
Khadia													10	10	nil												
Khadia													10	10	nil												
Khadia													5	6	nil												
Mharinal													20	20	nil												
Kotkosh													49	45	4												
Seri													25	23	2												
Mahog													60	53	7	8 820											
Beal	Forests	Area affected	Forest Ha	Plantation Ha	Loss Rs	Area affected	Forest Ha	Plantation Ha	Loss Rs	Area affected	Forest Ha	Plantation Ha	Loss Rs	Area affected	Forest Ha	Plantation Ha	Loss Rs	Area affected	Forest Ha	Plantation Ha	Loss Rs	Area affected	Forest Ha	Plantation Ha	Loss Rs		
Mamail	D 181 Sanadhar C I to C IV					15	15	nil																			
Ghadiach	D 176 Ghadiach C I to C III														35	25	10	150 000									
Ghadiach	D 176 Ghadiach C I to C III														40	40	nil	nil									
Ghadiach	D 180 Terjodhar C I a to C II b	2	2	nil	nil																						
Bhenara	D 187 Kelodhar Suranda C I to C IV														60	60	nil	nil									
Mendhi	D 204 Shunashu																										
Mendhi	D 207 Gandhol C I to C II														35	20	15	2 2									
Kalahani	D 161 Dimeh C I to C II	15	15	nil	nil																						
Kalahani	D 166 Chakranth C I to C III																										

Kandha	D 72 Reshtadhar C I a to IV f							10	10 nil	nil	50	50 nil	nil				
Kandha	D 72 Reshtadhar C I a to IV f										70	50 nil	nil				
Kandha	D 72 Reshtadhar C I a to IV f										30	30 nil	nil				
Kandha	D 73 Gherloha C I B II							10	10 nil	nil	50	28	12 100 000				
Kandha	D 73 Gherloha C I B II										90	60	30 nil				
Bedar	D 62 Kuns C I to III							10	10 nil	nil							
Bedar	D 62 Kuns C I to III							30	30 nil	nil							
Bedar	D 63 Panjaru										15	15 nil	nil				
Bedar	D 67 Thuhadhar C I to III													20	20 nil	nil	
Kardal	D 64 Kalach							10	10 nil	nil							
Kardal	D 47 Chhaj													6	6 nil	nil	
Kardal	D 56 Kradal C I & II										15	15 nil	nil				
Tattapani	D 98 Kadya	1.8	7	11	60 000									10	10 nil	nil	
Tattapani	D 99 Bhatkar	1.5	1.5 nil	nil	nil									25	15	10 nil	
Tattapani	D 101 Nando	7 nil	7 nil	7 nil	7 nil						35	15	20 200 000				
Tattapani	D 101 Nando																
Belindi	D 74 Perbain																
Belindi	D 78 Kandha C I & II	24	14	10	82 000			12	8	4 30 000	30	30 nil	nil				
Belindi	D 78 Kandha C I & II							25	15	10 52 000	15	15 nil	nil				
A'sindi	D 84 Ahar	18	18 nil	nil	nil						28	28 nil	nil				
A'sindi	D 85 Taraur C I & II							45	45 nil	nil							

ANNEXURE VII(b)

Beat	Forests	2007				2008				2009				2010			
		Area affected (ha)	Forest Ha	Plantation Ha	Loss Rs	Area affected (ha)	Forest Ha	Plantation Ha	Loss Rs	Area affected (ha)	Forest Ha	Plantation Ha	Loss Rs	Area affected (ha)	Forest Ha	Plantation Ha	Loss Rs
Mamail	D 181 Sanshodhar C I to C IV					15	15	nil	nil								
Ghaliach	D 176 Ghaliach C I to C III									35	25	10	150,000				
Ghaliach	D 176 Ghaliach C I to C III									40	40	nil	nil				
Ghaliach	D 180 Tinkdhar C I to C II b	2	2	nil	nil												
Bhenara	D 187 Kelodhar Suranda C I to C IV b									60	60	nil	nil				
Mendhi	D 204 Shunahu									35	20	15	2.2				
Mendhi	D 207 Gandhor C I to C II									10	6	4	58,500				
Kakahan	D 161 Dumel C I to C II	15	15	nil	nil												
Kakahan	D 166 Chakranth C I to C III					15	15	nil	nil								
Kamand	D 149 Chandu					25	25	nil	nil								
Kamand	D 150 Jhau Parala C I to C II b	30	10		57,000												
Sanarkh	D 167 Bajhu C I to C V	7	7	nil	nil												
Sanarli	D 170 Yiker Karsog C I to C IV c									75	25	5	40,000	4	4	nil	nil
Dopha	D 171 Dopha-II C I to C VII	5	5	nil	nil									2	2	nil	nil
	D 111 Baksar C I to C II e									150	150	nil	nil				
Dharmour	D 119 Meharan C I to C II f									25	9	16	nil	15	15	nil	nil
	D 136 Parlog	1	nil	3	9,000												
Mahunag	D 124 Kalhausa C I to C IV	20	20	nil	nil												

Kardal	D 96 Bralor C I & II									15	15	nil	nil				
Tattapani	D 98 Kitya	1.8	2	11	60,000									10	10	nil	nil
Tattapani	D 99 Braker	1.5	1.5	nil	nil									25	15	10	nil
Tattapani	D 101 Nando	2	nil	7	nil					35	15	20	200,000				
Tattapani	D 101 Nando									10	10	nil	nil				
Balindi	D 14 Perbain									6	6	nil	nil	10	20	nil	nil
Balindi	D 78 Kandha C I & II	24	24	10	82,000	12	8	4	30,000	30	30	nil	nil				
Balindi	D 78 Kandha C I & II					25	25	10	52,000	15	15	nil	nil				
Alindi	D 84 Alias	18	18	nil	nil					28	28	nil	nil				
Alindi	D 85 Yaur C I & II					45	45	nil	nil								
Alindi	D 86 Lochad C I & II					62	44	18	133,000								
Alindi	D 88 Chanyana									5	5	nil	nil				
Alindi	D 91 Balinghi													1.5	0.5	1	7,500
Talehan	D 110 Ghaula C I to VI					10	10	nil	nil								
Chaurighan	D 128 Bhunda Shil C I a to C III b									15	15	nil	nil	37	37	nil	nil
Nanj	D 222 Pog C I to C V	5	nil	5	40,000												
Nanj	D 222 Pog C I to C V	5	5	nil	40,000												
Nanj	D 224 Mumbai C I to C V									10	10	nil	nil				
Khadap	D 227 Charog C I to C III b	25	25	nil	nil												
Pathari Indal	D 238 Sainjali C I to C II	13	13	nil	nil												
Pathari Indal	D 238 Sainjali C I to C II	15	12	nil	nil												
Pathari Indal	D 237 Katanda C I a to C II d									4	2	2	30,000				
Teban	D 243 Koi Dhar									15	15	nil	nil				
Teban	D 245 Pina C I to C II									20	8	12	65,000				
Polahi	D 240 Bahal C I a to C IV b									30	30	nil	nil				

Sarahan	D 247 Sarahan C I to C III								20	15	5	70,000				
Sarahan	D 249 Mahra C I a to C III b								5	2	3	30,000				
Mahog	D 255 Shagadi C I a to C VI								14	4	10	5,000	25	25	nil	nil
Mahog	D 255 Shagadi C I a to C VII								21.56	21.56	nil	nil				
Katanda	D 259 Lotala (O) C I a to C VI d								6	4	2	24,000				
Katanda	D 259 Lotala (O) C I a to C VI d								46	46	nil	nil				

LIST OF FORESTS RANGE, BLOCK AND BEATWISE APPENDIX IX

PANGNA RANGE			PANGNA RANGE		
S. N.	No. and Name of Forests	Area in Ha.	S. N.	No. and Name of Forests	Area in Ha.
	(A) PANGNA BLOCK				542.54
	<i>1. Surahi with HQ Galyog</i>			<i>6. Begli with HQ at Kandha</i>	
1	D 1 Mahog	40.42	1	D 30 Begli (Mandi)	48.37
2	D 2 Jalaun	2.87	2	D 31 Dahi	8.85
3	D 3 Neand	5.37	3	D 33 Kheneog	31.99
4	D 4 Jud	21.05	4	D 34 Tikkari	57.83
5	D 5 Maral Dhank	3.64	5	D 35 Sanjog C I & II	55.63
6	D 6 Panjonu	84.13	6	D 38 Bukaran C I to III	171.97
7	D 7 Chil Sarahi	6.08			374.64
8	D 8 Panjanu	53.16		<i>7. Gushal with HQ at Gushal</i>	
9	D 9 Suhi	7.36	1	D 36 Kandhi	24.11
10	D 10 Kelo Sarahi	7.14	2	D 37 Bhanech	36.98
11	D 11 Kail Sarahi	8.04	3	D 39 Shill C I & II	158.59
12	D 12 Bhiyana	24.40	4	D 40 Bajhu C I to III	102.99
13	D 13 Bahan Nal	13.71			322.67
14	D 14 Sadas	21.41		TOTAL OF PANGNA BLOCK	2812.69
15	U 1 Prehti	1.80		(B) CHINDI BLOCK	
		300.58		<i>1. Chindi with HQ at Chindi</i>	
	<i>2. Pangna with HQ Pangna</i>		1	D 41 Bakhras C I to III	230.65
	D 16 Chhtri Mandi	24.56	2	D 42 Charkufri C I & II	85.01
2	D 17 Chattri Suket	29.05	3	D 43 Kaneri C I & II	142.82
3	D 18 Chattri Mandi I	6.61			458.48
4	D 20 Hiunge Nal	20.53		<i>2. Kradal with HQ at Dyalpur</i>	
5	D 21 Bonas Nal	9.40	1	D 44 Katach	14.72
6	D 32 Sahal	23.93	2	D 46 Frash	68.36
7	D 45 Sundrahal	75.55	3	D 47 Chhaj	39.67
		189.63	4	D 48 Mashog	39.51
	<i>3. Shalog with HQ at Bah</i>		5	D 49 Kotbehal I	23.57
1	D 15 Rakni I to II b	85.08	6	D 50 Kotbehal II	15.82
3	D 19 Shalog C I a to VI	300.42	7	D 51 Kot behal III	16.17
		385.5	8	D 52 KotBahal	16.02
	<i>4. Kutachi with HQ at Kutachi</i>		9	D 53 Kotbehal IV C I & II	70.97
1	D 22 Chhadhaini-dent C I to IIC	203.43	10	D 54 Sarai	36.00
2	D 23 Barnog	53.33	11	D 55 Jandl	59.18
3	D 24 Barnog	26.14	12	D 56 Kradal C I & II	80.88
4	D 25 Basundra	169.98	13	D 57 Narota Nagra	31.63

5	D 26 Chohara C I a to IV b	244.25			512.5
		697.13		3. Shorshan with HQ at Rajot	
	5. Machhrat with HQ at Dhauri		1	D 58 Dharmour C I to III	128.39
1	D 27 Mahasu C I to VI b	414.2	2	D 59 Dharmour	3.55
2	D 28 Mahasu	5.36	3	D 60 Himri	9.37
3	D 29 Begli Suket C I & II	122.98	4	D 61 Shorshan C I to III	135.95
5	D 68 Udhmoo C I & II	64.08		3. Tatapani with HQ at Tatapani	
		341.34	1	D 92 Sarour	61.42
	4. Belar with HQ at Dhow		2	D 93 Thogi	52.80
1	D 62 Kuns C I to III	74.62	3	D 94 Tatapani	35.41
2	D 63 Paniaru	99.81	4	D 95 Jeoni	46.13
3	D 64 Salana Dogon	64.56	5	D 96 Sajh	27.13
4	D 65 Salanadagoh	9.04	6	D 97 Seri Sarv	11.43
5	D 66 Salalana Dagoh II	26.85	7	D 98 Kidya	140.66
6	D 67 Thuhadhar C I to III	76.2	8	D 99 Braiker	27.30
7	U 2 Belar	53.28	9	D 100 Ghangoor	111.91
		404.36	10	D 101 Nando	401.50
	5. Konda with HQ at Paragali		11	U 7 Bandli	77.50
1	D 69 Shill Badyar II	6.87	12	U 8 Badiyog	190.30
2	D 70 Shil Badyar I	38.93	13	U 9 Thalli	10.60
3	D 71 Shill Badyar C I a to II	105.27	14	U 10 Jaru	30.78
4	D 72 Reshtadhar C I a to IV f	610.19			1224.87
5	D 73 Gherlahal C I & II	295.46		4. Talehan with HQ at Talehan	
		1056.72	1	D 102 Telehan C I a to IV	421.8
	TOTAL OF CHINDI BLOCK	2773.40	2	D 103 Telhan	313.72
	(C). TATAPANI BLOCK		3	D 104 Vesta	268.84
	1. Blindi with HQ at Blindi		4	D 105 Khadehan	148.91
1	D 74 Perbain	1046.21	5	D 106 Bhaura	161.20
2	D 78 Kandha C I & II	220.41	6	D 107 Guma	122.52
3	D 79 Mohuru Dhak C I & II	82.02	7	D 108 Dudhali I	23.18
4	D 80 Kandha	116.87	8	D 109 Ghaula	42.16
5	D 81 Bag	7.68	9	D 110 Ghaula C I to VI	245.08
6	D 82 Devikot C I & II	186.92			1747.41
7	D 83 Mandap	185.38		TOTAL OF TATAPANI BLOCK	5856.36
		1845.49		TOTAL OF PANGNA RANGE	11442.45
	2. Alsindi with HQ at Alsindi			KAHSOG RANGE	
1	D 75 Chatker	51.83		(A) BAKSHAR BLOCK	
2	D 76 Kapdyas	178.54		1. Bagshad with HQ at Bagshad	

3	D 77 Gurju Dhar	28.87	1	D 111 Baksar C I a to C II e	613.77
4	D 84 Alias	352.78	2	D 112 Thaloo	33.12
5	D 85 Taraur C I & II	83.55	3	D 113 Khamaroo C I to C II	50.51
6	D 86 Lochad C I & II	159.27	4	D 114 Flandi	2.86
7	D 87 Saran	15.64	5	D 115 Khamaroo	4.30
8	D 88 Chanyana	28.75			704.56
9	D 89 Mohta II	5.83		2. Dharmour with HQ at Dharmour	
10	D 90 Mohta I	9.45	1	D 116 Dharmour C I to C II	71.55
11	D 91 Balinghi	18.58	2	D 117 Dharmour Alaid C I to C II	39.91
12	U 3 Thalyuntha	16.10	3	D 118 Kot C I to C II	61.72
13	U 4 Alias	32.20	4	D 119 Meharan C I a to C II f	268.56
14	U 5 Lochhad	30.40	5	D 120 Jingal	6.45
15	U 6 Trouer	26.80	6	D 121 Basolti	9.18
		1038.59	7	D 122 Chalot	2.11
		459.48	12	D 159 Saned	28.90
	3. Parlog with HQ at Parlog		13	D 160 Chalaunhi	10.74
1	D 125 Dudhali II	39.19	14	U 11 Kufridhar	39.24
2	D 126 Kashot III	220.59	15	U 12 Saoni	9.1
3	D 127 Kashot	90.35			565.19
4	D 128 Kashot II	400.82		2. Kakhon with HQ at Karsog	
5	D 129 Palot	20.98	1	D 161 Dumel C I to C II	97.36
6	D 130 Manjhu I	26.39	2	D 162 Kanjol C I to C III	102.18
7	D 131 Parnot	144.05	3	D 163 Kot	11.96
8	D 132 Manjhu	27.41	4	D 164 Mashogra	5.65
9	D 133 Hiru	279.05	5	D 165 Chandhi C I to C II	24.2
10	D 134 Magan	148.35	6	D 166 Chakranth C I to C III	73.2
11	D 135 Fafan	285.08	7	U 13 Kalaini Khudla	25.6
12	D 136 Parlog	104.39			340.15
		1786.65		3. Sanarli with HQ at Sanarli	
	4. Mahunag with HQ at Mahunag		1	D 167 Bajhu C I to C V	212.14
1	D 123 Tiker Kapahari	59.77	2	D 168 Nava	8.66
2	D 124 Kalhauta C I a to C IV	241.86	3	D 169 Tiker Karsog (N)	2.37
3	D 137 Nagletha	694.09	4	D 170 Tiker Karsog C I a to C IV c	385.22
4	D 138 Bag Bakhari C I a to C III	473.42	5	U 14 Chhol	2.16
		1469.14	6	U 15 Jadhog	14.49
	5. Sapnot with HQ at Sapnot				625.04
1	D 139 Odda C I to C III b	155.94		4. Dafa with HQ at Bomna (Nihani)	

2	D 140 Dharanda	13.43	1	D 171 Dopha-II C I to C VIII	236.70
3	D 141 Thanger	30.36	2	D 172 Dopha-I C I to C VII	407.57
4	D 142 Bilasoo C I to C II	41.18	3	D 173 Dopha C I a to C IV g	824.46
5	D 143 Kandhi Dhech	8.86	4	D 174 Punipeheran	3.99
6	D 144 Kashmir	23.45			1472.72
7	D 145 Kashmir III	27.55		TOTAL OF KARSOOG BLOCK	3003.10
8	D 146 Kashmir II	64.24		(C). MAMAIL BLOCK	
9	D 147 Kashmir IV	28.08		1. Ghalach with HQ at Nehra	
	TOTAL BAKSHAR BLOCK	393.09	1	D 175 Pehran C I a to C II c	133.07
	(B). KARSOOG BLOCK	4812.92	2	D 176 Ghaliach C I to C III	102.05
	1. Komand with HQ at Saow		3	D 177 Nehra	10.23
1	D 148 Kariani C I to C II	25.9	4	D 180 Tkri dhar C I a to C II b	101.27
					346.62
2	D 149 Chandu	36.85		2. Mamail with HQ at Mamail	
3	D 150 Jhau Parala C I a to C II b	112.59	1	D 178 Badharu	8.75
4	D 151 Karadal	9.00	2	D 179 Mamail dhar	14.07
5	D 152 Marndhi C I to C II	60.27	3	D 181 Sanandhar C I to C IV	81.46
6	D 153 Dharanda C I to C II	62.93	4	D 182 Shill C I a to C II b	45.24
7	D 154 Magheri	7.55	5	D 183 Mahadev ki Banoni C I a to C II	74.9
8	D 155 Batahali	24.22	6	D 184 Mahadev ki Banoni I	35.85
9	D 156 Kandha I	23.06	7	D 185 Mahadev ki Banoni II	44.91
10	D 157 Kandha II	60.69			305.18
11	D 158 Kufridhar	54.15		3. Bhanera with HQ at Bhanera	
1	D 186 Kelodhar Saranda C I to C III	101.67	11	U 19 Jhunjan	79.83
2	D 187 Kelodhar Suranda C I to C IV b	215.6			1409.65
3	D 193 Katach C I to C III	82		2. Dhamoon with HQ at Sainj	
4	D 194 Bheron Shill	13.56	1	D 219 Ganu C I to C II	121.78
5	D 195 Bhagyar	2.2	2	D 221 Kajauni C I to C II	58.32
6	D 196 Kufridhar	3.93	3	D 225 Dhamoon C I to C III b	209.54
7	D 197 Karol	12.62			389.64
8	U 16 Bhanera	1.70		3. Nanj with HQ at Nanj	
		433.28	1	D 220 Paro C I to C II	64.53
	4. Kashual with HQ at Kashual		2	D 222 Fog C I to C V	310.61
1	D 188 Kandhi C I to C V b	194.06	3	D 223 Tundal Balh	23.23
2	D 189 Kandhi	6.30	4	D 224 Mumblu C I to C V	67.7
3	D 190 Bagh I	4.09			466.07

4	D 191 Bagh II	3.89		4. Khadra with HQ at Batauhan	
5	D 192 Bajh	23.96	1	D 226 Khadra C I to C V b	266.68
6	D 198 Dhanyara I	52.55	2	D 227 Charag C I to C III b	196.53
7	D 199 Dhanyara II	36.11			463.21
		320.96		5. Chauridhar HQ at Chauridhar	
	5. Mendhi with HQ at Mendhi		1	D 228 Bhunda Shill C I a to C III b	111.99
1	D 200 Boh Parala	22.81	2	D 229 Jachh C I to C III	108.04
2	D 201 Agli Dhar	21.83	3	D 230 Chabor C I to C V	148.53
3	D 202 Parla Dhartoo C I to C IV	104.49			368.56
4	D 203 Thach C I to C II	90.73		TOTAL OF SERI BLOCK	3097.13
5	D 204 Shunahu	64.98		(B). RICHHNI BLOCK	
6	D 205 Sarti	18.08		1. Seri with HQ at Khanjari	
7	D 206 Pabo	14.76	1	D 231 Shiladhar C I to C V	169.42
8	D 207 Gandhol C I to C II	171.82	2	D 232 Surandha C I to C III	76.79
9	D 208 Majhood C I a to C II	347.7			246.21
10	U 17 Chalauni	16.6		2. Richhni with HQ at Kelodhar	
11	U 18 Kot	6.75	1	D 233 Richhni C I a to C III e	598.11
		880.55			598.11
	TOTAL OF MAMAIL BLOCK	2286.59		3. Karkash with HQ at Karkash	
	TOTAL OF KARSOG RANGE	10102.61	1	D 234 Sundroo C I to C V b	213.14
	SERI RANGE		2	D 235 Dhurmoo C I a to C V	227.51
	(A) SERI BLOCK				440.65
	1. Nihari Nal HQ Khaneol			4. Pathrevi with HQ at Khakhana	
1	D 209 Jaung	71.43	1	D 236 Pathrevi C I a to C IV b	506.22
2	D 210 Sinjh Kufri C I to C II	38.37	2	D 237 Katanda C I a to C II d	265.8
3	D 211 Sinjh I	37.13			772.02
4	D 212 sinjh II	10.00		TOTAL OF RICHHNI BLOCK	2056.99
5	D 213 Nihari Nal C I a to C IV c	371.76		(C) GOWALPUR BLOCK	
6	D 214 Jhuanjan	528.52		1. Pokhi with HQ at Sihanj	
7	D 215 Sirni	62.31	1	OD 238 Gadaron C I a to C II b	119.54
8	D 216 Ganai	33.89	2	OD 239 Drail C I a to C II b	263.6
9	D 217 Sanach	85.53	3	OD 240 Bahal C I a to C IV b	339.41
10	D 218 Sainjali C I to C II	90.88			722.55
	2. Talban with HQ at Talban			TOTAL OF MAHOG BLOCK	2353.29
1	D 241 Kandloo C I a to C III b	390.8		(B) MAGROO BLOCK	

				1. Thanser with HQ at Thanser	
2	D 242 Buna	64.74			
3	D 243 Kot Dhar	40.17	1	D 268 Janehar C I to C II	98.58
4	D 244 Kot Kumarla	13.41	2	D 269 Kalanju C I to C II	96.03
5	D 245 Firna C I to C II	88.97	3	D 270 Ruhmani C I to C III	173.71
		598.09	4	D 271 Ruhmani(N)	12.53
	3. Sarhan with HQ at Ashla				380.85
1	D 246 Chaura	12.23		2. Lassi with HQ at Lassi	
2	D 247 Sarahan C I to C III	145.92	1	D 272 Lahair	50.88
3	D 248 Faneata C I to C II	34.40	2	D 273 Lassi	67.40
4	D 249 Makra C I a to C III b	254.55	3	D 275 Kathnallo	68.90
5	D 250 Bagridhar	53.01	4	D 276 Rachuwar Gahar(O)	70.39
		500.11		D 277 Rachuwar Gahar(N) C I to C III	187.39
	4. Gwalpur with HQ at Gwalpur		6	D 278 Nadaun	251.85
1	D 251 Kavori	29.24	7	D 279 Nadaun I C I to C II	112.36
2	D 252 Naganal C I a to C II c	264.04			809.17
3	D 253 Jakhol C I to C III	129.66		3. Chhoura with HQ at Chhera	
4	D 254 Sushan C I to C IV	169.32	1	D 274 Chattri	38.55
		592.26	2	D 280 Nadaun II	33.83
	TOTAL OF GWALPUR BLOCK	2413.01	3	D 281 Chha Nal C I to C II	70.76
	TOTAL OF SERI RANGE	7567.13	4	D 282 Choura	12.63
	MAGROO RANGE		5	D 283 Raidhar	125.07
	(A) MAHOG BLOCK		6	D 284 Karsain bir	144.15
	1. Mahog HQ Mahog		7	D 285 Chaplandi	38.67
1	D 255 Shagach C I a to C VII	555.49	8	D 286 Lather shill	4.08
2	D 256 Jagol C I a to C II	145.72			467.74
3	D 257 Jagal C I to C III	125.22		4. Seri Mangarh with HQ at Seri Mangarh	
4	D 258 Bagund C I to C II	56.84	1	D 287 Hall (O)	75.85
		883.27	2	D 288 Hall (N)	10.63
	2. Katandha with HQ at Katandha		3	D 289 Ghanidhar	19.34
1	D 259 Lotala(O) C I a to C VI d	616.97	4	D 290 Planidhar	70.66
2	D 260 Lotala(N) C I to C II	64.63	5	D 291 Phaidhar C I to C II	75.74
3	D 261 Gurjub C I to C V	128.93	6	D 292 Siri naryan C I to C II	86.39
		810.53	7	D 293 Sural C I to C II	86.24
	3. Kathaundhar with HQ at Nehra Seri		8	D 294 Danot	62.20
1	D 262 Kathondhar C I a to C IV	442.08	9	D 295 Sainj	3.13
2	D 263 Kathaun dhar	5.50	10	D 296 Balhl shill C I to C III	69.66
3	U 20 Tipra	9.81	11	D 297 Surahl C I to C III	130.98

		457.39			690.82
	4. Sagaqi with HQ at Tippra			TOTAL OF MAGROO BLOCK	2348.58
1	D 264 Khatoa(N)	13.09		TOTAL OF MAGROO RANGE	4701.87
2	D 265 Khatoa(O) C I to C II	53.25		TOTAL OF KARSOG FORESTS DIVISION	33814.05
3	D 266 Lahari shill C I to C III	94.61			
4	D 267 Sagoradhar C I to C II	41.15			
		202.10			

**ANNEXURE X
AREA OF BEATS**

S. N.	Range	Block	Beat	Geographical Area (ha)	Dense Forest (ha)	Open Forest (ha)	Scrub (ha)	Total Forest (ha)	No Forest (ha)
1	Karsog	Bagsad	Mahuna g	1048	49	116	5	170	877
2	Karsog	Bagsad	Dharmo ur	1909	454	505	2	961	940
3	Karsog	Bagsad	Bakshar	1555	510	322	0	832	712
4	Karsog	Bagsad	Parlog	1691	650	238	0	888	791
5	Karsog	Bagsad	Sapnot	1697	553	194	0	747	940
		Bagsad	Block	7901	2216	1375	7	3598	4261
6	Karsog	Karsog	Dopha	1762	731	599	0	1330	400
7	Karsog	Karsog	Karsog	2053	162	438	10	611	1439
8	Karsog	Karsog	Kamand	1570	220	302	3	525	1043
9	Karsog	Karsog	Sanarli	1246	551	318	0	869	352
		Karsog	Block	6631	1664	1656	14	3334	3233
10	Karsog	Mamel	Mehand hi	2051	365	189	0	554	1489
11	Karsog	Mamel	Majel	987	243	50	0	293	694
12	Karsog	Mamel	Mamel	2302	549	558	14	1121	1168
		Mamel	Block	5340	1157	797	14	1968	3351
		Karsog	Range	19872	5037	3828	35	8900	10845
13	Magroo	Magroo	Seri Mangar h	1504	320	158	0	478	1026
14	Magroo	Magroo	Lassi	1605	411	336	0	746	857
15	Magroo	Magroo	Thanser	1295	503	299	0	802	493
			Magroo Block	4404	1233	792	0	2026	2376
16	Magroo	Mahog	Mahog	1833	676	331	0	1007	817
17	Magroo	Mahog	Kathaun dhar	1389	776	138	13	927	443
			Mahog Block	3221	1452	469	13	1934	1260
			Magroo Range	7625	2685	1261	13	3959	3636
18	Pangna	Balindi	Kanda	1085	690	81	28	799	276
19	Pangna	Balindi	Sarchac h	1809	238	311	211	760	1042
20	Pangna	Balindi	Balindi	937	312	164	0	476	443
21	Pangna	Balindi	Restadh ar	2221	395	291	227	913	1302
			Balindi Block	6052	1635	847	466	2949	3064
22	Pangna	Chindi	Belar	1498	280	141	11	432	1062
23	Pangna	Chindi	Chindi	1632	399	503	0	902	730
24	Pangna	Chindi	Dab	1344	613	235	0	848	458
			Chindi Block	4475	1292	878	11	2182	2251

25	Pangna	Pangna	Surehi	1421	160	251	0	411	1008
26	Pangna	Pangna	Pangna	1046	180	309	0	490	555
27	Pangna	Pangna	Gushal	946	271	326	0	597	346
28	Pangna	Pangna	Begli	1014	572	123	0	795	177
29	Pangna	Pangna	Kutachi	1409	563	280	0	943	440
			Pangan a Block	5836	1947	1290	0	3237	2526
30	Pangna	Tattapan i	Telehan	1911	115	329	285	729	1181
31	Pangna	Tattapan i	Alsindi	912	443	98	0	541	362
32	Pangna	Tattapan i	Thalli	2745	21	72	1120	1213	1496
			Tattapa ni Block	5569	578	499	1406	2483	3038
			Pangan a Range	21931	5453	3514	1883	10850	10879
33	Seri	Gowalpu r	Saarhan	1426	213	132	5	350	1075
34	Seri	Gowalpu r	Pokhi	1277	324	257	0	580	691
35	Seri	Gowalpu r	Teban	1224	14	79	56	149	1074
			Gowalp ur Block	3927	351	467	61	1080	2841
36	Seri	Richni	Pathrevi	1301	136	502	0	938	344
37	Seri	Richni	Seri	1353	191	293	0	781	558
38	Seri	Richni	Richhni	1251	243	533	0	776	468
			Richni Block	3906	1169	1326	0	2495	1371
39	Seri	Seri	Nanj	1384	146	134	0	281	1095
40	Seri	Seri	Dhamo on	1574	705	210	4	919	637
41	Seri	Seri	Nihar Naal	1576	150	165	0	315	1254
			Seri Block	4534	1001	510	4	1515	2986
			Seri Range	12367	2721	2303	65	5089	7197
			Karsog Division	61795	15897	10907	1995	28799	32557

Existing beats are 51, It is proposed to reduce these to 41.

APPENDIX-XI

STATEMENT SHOWING AREA & ALLOTMENT OF FOREST COMPARTMENTS/SUBCOMPARTMENTS OF

KARSOG FOREST DIVISION DEMARCATED PROTECTED FORESTS

S.N.	Name & no. of Forest	Comp./sub	Working Circle				Working Circle				Working Circle	Total Area
		Comp.	DEODAR -KAIL				CHIL				PROTECTION	{ Ha}
			PB I	PB II	PB III	PB IV	PB I	PB II	PB III	PB IV		
			PANGNA				FOREST RANGE					
1	D 1 Mahog	Whole									40.42	40.42
2	D 2 Jalaun	Whole								2.87		2.87
3	D 3 Neand	Whole									5.37	5.37
4	D 4 Jud	Whole								21.05		21.05
5	D 5 Maral Dhank	Whole									3.64	3.64
6	D 6 Panjanu	Whole								94.13		94.13
7	D 7 Chil Sarahi	Whole								6.08		6.08
8	D 8 Panjanu	Whole								53.16		53.16
9	D 9 Suh1	Whole									7.36	7.36
10	D 10 Kelo Sarahi	Whole		7.14								7.14
11	D 11 Kail Sarahi	Whole		8.04								8.04
12	D 12 Bhiyana	Whole				24.4						24.40
13	D 13 Bahan Nal	Whole									13.71	13.71
14	D 14 Sadas	Whole							21.41			21.41
15	D 15 Rakni	C1	10.49									10.49
		C2a								37.04		37.04
		C2b								37.55		37.55
16	D 16 Chhtri Mandi	Whole								24.56		24.56
17	D 17 Chattri Suket	Whole								29.05		29.05
18	D 18 Chattri Mandi I	Whole								6.61		6.61
19	D 19 Shalog	C1a		31.5								31.50
		C1b		35.65								35.65
		C2a		31.96								31.96
		C2b		56.86								56.86
		C3						25.97				25.97
		C4		40.88								40.88
		C5						27.82				27.82

		C6								49.78		49.78
20	D 20 Hiunge Nal	Whole								20.53		20.53
21	D 21 Bonas Nal	Whole								9.40		9.40
22	D 22 Chhadhaini-dent	C1				62.12						62.12
		C2a	54.85									54.85
		C2b	56.74									56.74
		C2c	29.72									29.72
23	D 23 Barnog	Whole	53.33									53.33
24	D 24 Barnog	Whole					26.14					26.14
25	D 25 Basundra	Whole		169.98								169.98
26	D 26 Chohara	C1a		50.14								50.14
		C1b		36.93								36.93
		C2a				36.78						36.78
		C2b				23.57						23.57
		C3		25.97								25.97
		C4a				39.33						39.33
		C4b				31.53						31.53
27	D 27 Mahasu	C1		11.94								11.94
		C2a	42.91									42.91
		C2b	51.13									51.13
		C2c	36.38									36.38
		C3a	30.78									30.78
		C3b	26.68									26.68
		C3c	20.34									20.34
		C3d	24.63									24.63
		C4		28.91								28.91
		C5a						42.01				42.01
		C5b					24.24					24.24
		C5c					9.51					9.51
		C6a		29.1								29.10
		C6b		35.64								35.64
28	D 28 Mahasu	Whole								5.36		5.36
29	D 29 Begli Suket	C1		37.24								37.24
		C2						85.74				85.74

30	D 30 Bagli (Mandi)	Whole			48.37					48.37
31	D 31 Dahi	Whole					8.85			8.85
32	D 32 Sahal	Whole		23.93						23.93
33	D 33 Kheneog	Whole					31.99			31.99
34	D 34 Tikkar	Whole					57.83			57.83
35	D 35 Sanjoq	C1						34.42		34.42
		C2					21.21			21.21
36	D 36 Kandhi	Whole						24.11		24.11
37	D 37 Bhanech	Whole						36.98		36.98
38	D 38 Bukaran	C1					41.94			41.94
		C2		58.73						58.73
		C3		71.3						71.30
39	D 39 Shili	C1		124.16						124.16
		C2					34.43			34.43
40	D 40 Bajhu	C1					67.83			67.83
		C2		15.31						15.31
		C3		19.85						19.85
41	D 41 Bakhras	C1						89.26		89.26
		C2						84.71		84.71
		C3		56.68						56.68
42	D 42 Charkufri	C1		26.89						26.89
		C2						58.12		58.12
43	D 43 Kaneri	C1				61.6				61.60
		C2				81.22				81.22
44	D 44 Katach	Whole						14.72		14.72
45	D 45 Sundrahal	Whole						75.55		75.55
46	D 46 Frash	Whole					68.36			68.36
47	D 47 Chhaj	Whole					39.67			39.67
48	D 48 Mashog	Whole						39.51		39.51
49	D 49 Kotbehal I	Whole						23.57		23.57
50	D 50 Kotbehal II	Whole						15.82		15.82
51	D 51 Kot behal III	Whole						16.17		16.17
52	D 52 KotBahal	Whole						16.02		16.02
53	D 53 Kotbehal IV	C1						21.53		21.53

		C2							49.44		49.44
54	D 54 Sarai	Whole					36				36.00
55	D 55 Janol	Whole				59.18					59.18
56	D 56 Kradal	C1					53.55				53.55
		C2							27.33		27.33
57	D 57 Narota Nagra	Whole							31.63		31.63
58	D 58 Dharmour	C1							51.66		51.66
		C2				29.96					29.96
		C3				46.77					46.77
59	D 59 Dharmour	Whole			3.55						3.55
60	D 60 Himri	Whole							9.37		9.37
61	D 61 Shorshan	C1				45.68					45.68
		C2					39.12				39.12
		C3				51.15					51.15
62	D 62 Kuns	C1				24.65					24.65
		C2				17.08					17.08
		C3				32.89					32.89
63	D 63 Paniaru	Whole				99.81					99.81
64	D 64 Salana Dagon	Whole							64.56		64.56
65	D 65 Salanadagoh	Whole								9.04	9.04
66	D 66 Salalana Dagon II	Whole							26.85		26.85
67	D 67 Thuhadhar	C1					25.01				25.01
		C2							23.82		23.82
		C3							27.37		27.37
68	D 68 Udmoo	C1							42.2		42.20
		C2							21.88		21.88
69	D 69 Shill Badyar II	Whole					6.87				6.87
70	D 70 Shil Badyar I	Whole					38.93				38.93
71	D 71 Shill Badyar	C1a					20.08				20.08
		C1b					35.04				35.04
		C2							50.15		50.15
72	D 72 Reshtadhar	C1a					15.49				15.49
		C1b				15.7					15.70
		C1c				11.72					11.72

		C1d						13.19			13.19
		C1e						12.45			12.45
		C1f							21.67		21.67
		C1g							23.13		23.13
		C1h							34.96		34.96
		C1i						27.84			27.84
		C2a							24.28		24.28
		C2b					32.55				32.55
		C2c							20.93		20.93
		C2d							32.45		32.45
		C2e							101.63		101.63
		C3							91.16		91.16
		C4a							25.96		25.96
		C4b							15.91		15.91
		C4c							20.51		20.51
		C4d							38.93		38.93
		C4e							13.4		13.40
		C4f							16.33		16.33
73	D 73 Gherlohal	C1					173.78				173.78
		C2								121.68	121.68
74	D 74 Perbain	Whole								1046.21	1046.21
75	D 75 Chatker	Whole								51.83	51.83
76	D 76 Kapdyas	Whole								178.54	178.54
77	D 77 Gurju Dhar	Whole								28.87	28.87
78	D 78 Kandha	C1					80.02				80.02
		C2							140.39		140.39
79	D 79 Moharu	C1								27.87	27.87
		C2								54.15	54.15
										116.87	116.87
80	D 80 Kandha	Whole									
81	D 81 Bag	Whole						7.68			7.68
82	D 82 Devikot	C1							91.73		91.73
		C2							95.19		95.19
83	D 83 Mandap	Whole							185.38		185.38
84	D 84 Allao	Whole					352.78				352.78

85	D 85 Taraur	C1						45.71				45.71
		C2									37.84	37.84
86	D 86 Lochad	C1							59.15			59.15
		C2									100.12	100.12
87	D 87 Saran	Whole									15.64	15.64
88	D 88 Chanyana	Whole									28.75	28.75
89	D 89 Mohta II	Whole									5.83	5.83
90	D 90 Mohta I	Whole									9.45	9.45
91	D 91 Balinghi	Whole									18.58	18.58
92	D 92 Sarour	Whole									61.42	61.42
93	D 93 Thogi	Whole									52.80	52.80
94	D 94 Tatapani	Whole									35.41	35.41
95	D 95 Jeori	Whole									46.13	46.13
96	D 96 Sajh	Whole									27.13	27.13
97	D 97 Seri Sarv	Whole									11.43	11.43
98	D 98 Kidya	Whole									140.66	140.66
99	D 99 Braiker	Whole									27.30	27.30
100	D 100 Ghangoor	Whole									111.91	111.91
101	D 101 Nando	Whole									401.50	401.50
102	D 102 Telehan	C1a						15.07				15.07
		C1b						39.84				39.84
		C2a					56.13					56.13
		C2b								51.97		51.97
		C2c								85.92		85.92
		C3					99.08					99.08
		C4									73.79	73.79
103	D 103 Telhan	Whole									313.72	313.72
104	D 104 Vesta	Whole									268.84	268.84
105	D 105 Khadehan	Whole									148.91	148.91
106	D 106 Bhaura	Whole									161.20	161.20
107	D 107 Guma	Whole									122.52	122.52
108	D 108 Dudhali I	Whole									23.18	23.18
109	D 109 Ghaula	Whole								42.16		42.16
110	D 110 Ghaula	C1						37.14				37.14

		C2						16.02				16.02
		C3								42.98		42.98
		C4					59.02					59.02
		C5								65.6		65.68
		C6					24.32					24.32
	TOTAL PANGNA RANGE		437.98	1010.8	27.48	266.1	1402.41	1000.27	231.54	2247.26	4348.85	10972.69
						KARSOG	FOREST	RANGE				
111	D 111 Baksar	C1a						45.36				45.36
		C1b						63.1				63.1
		C1c						51.56				51.56
		C1d						71.31				71.31
		C1e						56.91				56.91
		C1f						13.89				13.89
		C1g						38.5				38.5
		C2a						66.45				66.45
		C2b						48.87				48.87
		C2c						46.03				46.03
		C2d									27.61	27.61
		C2e						84.18				84.18
112	D 112 Thaltoo	Whole								33.12		33.12
113	D 113 Khamaroo	C1								29.15		29.15
		C2								21.36		21.36
114	D 114 Flandi	Whole								2.86		2.86
115	D 115 Khamaroo	Whole								4.3		4.3
116	D 116 Dharmour	C1						33.89				33.89
		C2						37.66				37.66
117	D 117 Dharmour Alaid	C1								27.56		27.56
		C2								12.35		12.35
118	D 118 Kot	C1								19.24		19.24
		C2								42.48		42.48
119	D 119 Meharan	C1a								16.3		16.3
		C1b								72.83		72.83
		C2a						32.15				32.15

		C2b					28.78				28.78
		C2c					21				21
		C2d					33.33				33.33
		C2e					46.84				46.84
		C2f					17.33				17.33
120	D 120 Jingal	Whole					6.45				6.45
121	D 121 Basolti	Whole					9.18				9.18
122	D 122 Chalot	Whole					2.11				2.11
123	D 123 Tiker Kapahari	Whole				59.77					59.77
124	D 124 Kalhauta	C1a							23.5		23.5
		C1b							32.35		32.35
		C1c							43.64		43.64
		C2a							19.08		19.08
		C2b							28.99		28.99
		C3							31.74		31.74
		C4							62.56		62.56
125	D 125 Dudhali II	Whole							39.19		39.19
126	D 126 Kashot III	Whole							220.59		220.59
127	D 127 Kashot	Whole				90.35					90.35
128	D 128 Kashot II	Whole							400.82		400.82
129	D 129 Palot	Whole				20.98					20.98
130	D 130 Manjhu I	Whole							26.39		26.39
131	D 131 Paznot	Whole							144.05		144.05
132	D 132 Manjhu	Whole				27.41					27.41
133	D 133 Hiru	Whole							279.05		279.05
134	D 134 Magan	Whole							148.35		148.35
135	D 135 Fafan	Whole							285.08		285.08
136	D 136 Parlog	Whole							104.39		104.39
137	D 137 Nagaletha	Whole				694.09					694.09
138	D 138 Bad Bakhari	C1a							15.92		15.92
		C1b							18.09		18.09
		C1c						41.43			41.43
		C2a					33.83				33.83
		C2b					33.46				33.46

		C2c					37.09				37.09
		C2d					28.22				28.22
		C3								265.38	265.38
139	D 139 Odda	C1		30.47							30.47
		C2				55.8					55.8
		C3a					27.39				27.39
		C3b					42.28				42.28
140	D 140 Dharanda	Whole							13.43		13.43
141	D 141 Thanger	Whole							30.36		30.36
142	D 142 Bilasoo	C1							18.42		18.42
		C2					22.76				22.76
143	D 143 Kandhi Dhech	Whole		8.86							8.86
144	D 144 Kashmir	Whole		23.45							23.45
145	D 145 Kashmair III	Whole							27.55		27.55
146	D 146 Kashmair II	Whole							64.24		64.24
147	D 147 Kashmair IV	Whole							28.08		28.08
148	D 148 Kariani	C1		14.08							14.08
		C2					11.82				11.82
149	D 149 Chandu	Whole					36.85				36.85
150	D 150 Jhau Parala	C1a							35.89		35.89
		C1b							14.05		14.05
		C1c							10.67		10.67
		C2a							32.51		32.51
		C2b				19.47					19.47
151	D 151 Karadal	Whole					9				9
152	D 152 Marndhi	C1					37.37				37.37
		C2					22.9				22.9
153	D 153 Dharanda	C1						32.53			32.53
		C2						30.4			30.4
154	D 154 Magheri	Whole								7.55	7.55
155	D 155 Batahala	Whole								24.22	24.22
156	D 156 Kandha I	Whole							23.06		23.06
157	D 157 Kandha II	Whole						60.69			60.69
158	D 158 Kufridhar	Whole					54.15				54.15

159	D 159 Saned	Whole							28.9		28.9
160	D 160 Chalaunhi	Whole						10.74			10.74
161	D 161 Dumel	C1					37.68				37.68
		C2					59.68				59.68
162	D 162 Kanjol	C1					34.56				34.56
		C2							45.87		45.87
		C3						21.75			21.75
163	D 163 Kot	Whole							11.96		11.96
164	D 164 Mashogra	Whole	5.65								5.65
165	D 165 Chandhi	C1							15.74		15.74
		C2		8.46							8.46
166	D 166 Chakranth	C1		22.79							22.79
		C2					25.49				25.49
		C3							24.92		24.92
167	D 167 Bajhu	C1		23.54							23.54
		C2		28.93							28.93
		C3a					42.54				42.54
		C3b					28.36				28.36
		C4							53.46		53.46
		C5					35.31				35.31
168	D 168 Nava	Whole							8.66		8.66
169	D 169 Tiker Karsog (N)	Whole				2.37					2.37
170	D 170 Tiker Karsog	C1a							12.45		12.45
		C1b							33.3		33.3
		C1c							15.15		15.15
		C1d							35.47		35.47
		C2a		67.95							67.95
		C2b							70.24		70.24
		C3a					29.23				29.23
		C3b						20.85			20.85
		C4a	33.03								33.03
		C4b	48.19								48.19
		C4c	19.36								19.36
171	D 171 Dopha-II	C1			17.66						17.66

		C2	15.88								15.88
		C3								21.06	21.06
		C4		52.17							52.17
		C5								29.32	29.32
		C6					35.05				35.05
		C7		46.93							46.93
		C8						18.63			18.63
											0
172	D 172 Dapha-I	C1							62.15		62.15
		C2							58.07		58.07
		C3							62.5		62.5
		C4							72.47		72.47
		C5							76.02		76.02
		C6							51.67		51.67
		C7							24.69		24.69
2	D 173 Dapha	C1a							43.03		43.03
		C1b		48.21							48.21
		C2a		62.2							62.2
		C2b							38.36		38.36
		C2c							51.5		51.5
		C2d		45.1							45.1
		C2e							35.77		35.77
		C2f		38.02							38.02
		C3a							28.34		28.34
		C3b							32.31		32.31
		C4a							31.45		31.45
		C4b							64.63		64.63
		C4c		37.84							37.84
		C4d		75.53							75.53
		C4e		42.51							42.51
		C4f		80.88							80.88
		C4g							68.78		68.78
174	D 174 Punipeheran	Whole							3.99		3.99
175	D 175 Pehran	C1a					25.87				25.87

		C1b					21.07				21.07
		C2a								32.9	32.9
		C2b								31.05	31.05
		C2c	22.18								22.18
176	D 176 Ghaliach	C1					29.62				29.62
		C2						48.62			48.62
		C3							23.81		23.81
177	D 177 Nehra	Whole		10.23							10.23
178	D 178 Badharu	Whole							8.75		8.75
179	D 179 Mamail dhar	Whole							14.07		14.07
180	D 180 Tikri dhar	C1a							24.89		24.89
		C1b							26.1		26.1
		C1c						18.59			18.59
		C2a							11.58		11.58
		C2b							20.11		20.11
181	D 181 Sanahdhar	C1							15.32		15.32
		C2a						8.63			8.63
		C2b						12.19			12.19
		C3							16.95		16.95
		C4							28.37		28.37
182	D 182 Shill	C1a							6.42		6.42
		C1b							13.87		13.87
		C2a						14.29			14.29
		C2b						10.66			10.66
183	D 183 Mahadev ki Banoni	C1a							29.65		29.65
		C1b							37.33		37.33
		C2						7.92			7.92
184	D 184 Mahadev ki Banoni	Whole							35.85		35.85
185	D 185 Mahadev ki Banoni	Whole							44.91		44.91
186	D 186 Kelodhar Saranda	C1						32.8			32.8
		C2						26.45			26.45
		C3						42.42			42.42
187	D 187 Kelodhar Suranda	C1						15.61			15.61
		C2a						34.99			34.99

		C2b					18.01				18.01
		C3a					47.51				47.51
		C3b					17.49				17.49
		C4a							27.27		27.27
		C4b							54.72		54.72
188	D 188 Kandhi	C1		17.01							17.01
		C2					30.44				30.44
		C3a	22.73								22.73
		C3b	27.12								27.12
		C4		54.76							54.76
		C5a				15.68					15.68
		C5b				26.32					26.32
189	D 189 Kandhi	Whole		6.3							6.3
190	D 190 Bagh I	Whole					4.09				4.09
191	D 191 Bagh II	Whole					3.89				3.89
192	D 192 Bagh	Whole					23.96				23.96
193	D 193 Katach	C1					27.41				27.41
		C2				21.01					21.01
		C3					33.58				33.58
194	D 194 Bheron Shill	Whole							13.56		13.56
195	D 195 Bhagyar	Whole							2.2		2.2
196	D 196 Kufridhar	Whole							3.93		3.93
197	D 197 Karol	Whole				12.62					12.62
198	D 198 Dhanyara I	Whole								52.55	52.55
199	D 199 Dhanyara II	Whole								36.11	36.11
200	D 200 Boh Parala	Whole				22.81					22.81
201	D 201 Agli Dhar	Whole								21.83	21.83
202	D 202 Parla Dhartoo	C1					19.95				19.95
		C2					38				38
		C3					30.58				30.58
		C4								15.96	15.96
203	D 203 Thach	C1							33.06		33.06
		C2				57.67					57.67
204	D 204 Shunahu	Whole							64.98		64.98

205	D 205 Sarti	Whole						18.08				18.08
206	D 206 Pabo	Whole						14.76				14.76
207	D 207 Gandhoi	C1							56.93			56.93
		C2									114.89	114.89
208	D 208 Majhood	C1a						30.89				30.89
		C1b									49.79	49.79
		C2									267.02	267.02
	TOTAL KARSOG RANGE		194.14	626.48	237.4	44.37	1345.18	2078.41	240.61	1804.42	3415.96	9986.97
							SERI FOREST RANGE					
209	D 209 Jaung	Whole									71.43	71.43
210	D 210 Sinjh Kufri	C1		26.43								26.43
		C2								11.94		11.94
211	D 211 Sinjh I	Whole									37.13	37.13
212	D 212 sinjh II	Whole								10		10.00
213	D 213 Nihari Nal	C1a									31.59	31.59
		C1b									23.16	23.16
		C1c								26.8		26.80
		C2		37.33								37.33
		C3									178.6	178.60
		C4a		35.42								35.42
		C4b		16.46								16.46
		C4c		22.4								22.40
214	D 214 Jhuanjan	Whole									528.52	528.52
215	D 215 Sirni	Whole							62.31			62.31
216	D 216 Ganai	Whole									33.89	33.89
217	D 217 Sanach	Whole									85.53	85.53
218	D 218 Sainjali	C1									45.24	45.24
		C2								45.64		45.64
219	D 219 Ganu	C1						52.32				52.32
		C2									69.46	69.46
220	D 220 Paro	C1									30.41	30.41
		C2									34.12	34.12
221	D 221 Kajauni	C1	43.21									43.21

222	D 222 Poa	C2					15.11				15.11
		C1		36.75							36.75
		C2	19.79								19.79
		C3						34.99			34.99
		C4							92.58		92.58
		C5							126.5		126.50
223	D 223 Tundal Balh	Whole							23.23		23.23
224	D 224 Mumblu	C1					7.09				7.09
		C2				14.53					14.53
		C3				12.34					12.34
		C4				9.78					9.78
		C5				23.96					23.96
225	D 225 Dhamoon	C1		30.93							30.93
		C2a	32.23								32.23
		C2b	57.31								57.31
		C2c	22.03								22.03
		C3a		19.57							19.57
		C3b		47.47							47.47
226	D 226 Khadra	C1		17.38							17.38
		C2a					20.39				20.39
		C2b					16.67				16.67
		C3a					16.84				16.84
		C3b					35.47				35.47
		C4a	24.47								24.47
		C4b	41.31								41.31
		C4c	26.07								26.07
		C5		68.08							68.08
227	D 227 Charog	C1				39.23					39.23
		C2a						33.95			33.99
		C2b						62.71			62.71
		C3a						20.49			20.49
		C3b						40.11			40.11
228	D 228 Bhunda Shill	C1a				3.44					3.44
		C1b				12.47					12.47

		C1c					13.9					13.90
		C1d					15.4					15.40
		C1e					12.15					12.15
		C2									23.39	23.39
		C3a								17.6		17.60
		C3b								13.64		13.64
229	D 229 Jachh	C1		38.05								38.05
		C2		9.17								9.17
		C3								60.82		60.82
230	D 230 Chabor	C1					21.36					21.36
		C2					18.96					18.96
		C3					48.29					48.29
		C4					27.89					27.89
		C5					32.03					32.03
231	D 231 Shiladhar	C1					30.12					30.12
		C2					39.07					39.07
		C3					55.5					55.50
		C4					13.69					13.69
		C5					31.04					31.04
232	D 232 Surandha	C1								31.45		31.45
		C2					32.84					32.84
		C3		12.5								12.50
233	D 233 Richhni	C1a							23.46			23.46
		C1b									75.59	75.59
		C1c									54.81	54.81
		C1d									33.65	33.65
		C2a								35.19		35.19
		C2b								20.96		20.96
		C2c								22.31		22.31
		C2d								72.5		72.50
		C3a					72.32					72.32
		C3b					58.08					58.08
		C3c					41.74					41.74
		C3d					31.54					31.54

		C3e					55.96			55.96
234	D 234 Sundroo	C1						20.54		20.54
		C2		49.48						49.48
		C3a		13.1						13.10
		C3b		15.2						15.20
		C3c		13.1						13.10
		C4					29.43			29.43
		C5a	49.16							49.16
		C5b	23.13							23.13
235	D 235 Dhurmoo	C1a					14.24			14.24
		C1b					13.55			13.55
		C2a						26.51		26.51
		C2b						31.03		31.03
		C2c						17.14		17.14
		C2d						19.68		19.68
		C3a					15.4			15.40
		C3b					23.74			23.74
		C4a					17.48			17.48
		C4b					17.6			17.60
		C5					31.14			31.14
236	D 236 Pathrevi	C1a							46.7	46.70
		C1b							18.71	18.71
		C1c							25.4	25.40
		C1d							41.65	41.65
		C1e							20.9	20.90
		C2a	38.92							38.92
		C2b	27.86							27.86
		C2c	54.49							54.49
		C2d	20.34							20.34
		C2e	19.25							19.25
		C2f	19.39							19.39
		C3a		34.41						34.41
		C3b		70.06						70.06
		C4a							23.08	23.08

		C4b									45.06	45.06
237	D 237 Katanda	C1a					35.43					35.43
		C1b									33.73	33.73
		C1c					39.88					39.88
		C1d					21					21.00
		C1e					31.61					31.61
		C2a									31.61	31.61
		C2b									30.33	30.33
		C2c									22.49	22.49
		C2d									19.72	19.72
238	OD 238 Gadaron	C1a								19.11		19.11
		C1b								34.79		34.79
		C2a									38.53	38.53
		C2b									27.11	27.11
239	OD 239 Drail	C1a								28.18		28.18
		C1b					98.61					98.61
		C2a									68.81	68.81
		C2b									68	68.00
240	OD 240 Bahal	C1a									42.26	42.26
		C1b					51.43					51.43
		C2a					38.01					38.01
		C2b					48.64					48.64
		C2c								15.55		15.55
		C3a			21.26							21.26
		C3b						25.91				25.91
		C4a									59.8	59.80
		C4b									36.55	36.55
241	D 241 Kandloo	C1a					40.47					40.47
		C1b									53.88	53.88
		C1c					69.38					69.38
		C2a						31.67				31.67
		C2b									46.91	46.91
		C2c									60.71	60.71
		C3a									24.05	24.05

		C3b									63.73	63.73
241	D 242 Buna	Whole									64.74	64.74
243	D 243 Kot Dhar	Whole									40.17	40.17
244	D 244 Kot Kumaria	Whole									13.41	13.41
245	D 245 Firno	C1									54.2	54.20
		C2									34.77	34.77
246	D 246 Chaura	Whole							12.23			12.23
247	D 247 Sarahan	C1									48.02	48.02
		C2									36.02	36.02
		C3									61.88	61.88
248	D 248 Faneata	C1									17.77	17.77
		C2									16.63	16.63
249	D 249 Makra	C1a		47								47.00
		C1b		32.81								32.81
		C2a					26.73					26.73
		C2b					41.66					41.66
		C3a									32.44	32.44
		C3b							73.91			73.91
250	D 250 Baqridhar	Whole									53.01	53.01
251	D 251 Kavori	Whole									29.24	29.24
252	D 252 Naganal	C1a									28.75	28.75
		C1b					34.95					34.95
		C1c									55.69	55.69
		C1d					29.65					29.65
		C2a						38.11				38.11
		C2b						35.74				35.74
		C2c					41.15					41.15
253	D 253 Jakhol	C1						37.41				37.41
		C2							43.83			43.83
		C3					48.42					48.42
254	D 254 Sushan	C1					31.8					31.80
		C2	47.1									47.10
		C3	58.42									58.42
		C4		32								32.00

	TOTAL	SERI RANGE		624.48	746.36	0	39.23	846.79	1105.74	85.77	903.64	3135.29	7487.3
							MAGROO	FOREST	RANGE				
255	D 255 Shaqach	C1a					26.67						26.67
		C1b					24.28						24.28
		C1c					36.41						36.41
		C2a			52.13								52.13
		C2b			20.34								20.34
		C3a					20.51						20.51
		C3b		34.35									34.35
		C3c		18.29									18.29
		C3d		15.22									15.22
		C4		56.58									56.58
		C5a		24.78									24.78
		C5b		48.88									48.88
		C5c		60.34									60.34
		C6										80.69	80.69
		C7			36.41								36.41
256	D 256 Jagol	C1a										64.86	64.86
		C1b						24.93					24.93
		C2							55.93				55.93
257	D 257 Jagal	C1							21.22				21.22
		C2							61.9				61.90
		C3										42.1	42.10
258	D 258 Bagund	C1			50.33								50.33
		C2						6.11					6.11
259	D 259 Lotala (O)	C1a		18.7									18.70
		C1b		26.02									26.02
		C1c		37.01									37.01
		C2a		52.64									52.64
		C2b		27.95									27.95
		C3a					32.78						32.78
		C3b					60.35						60.35

		C3c			56.88					56.88
		C4a	56.88							56.88
		C4b	33.74							33.74
		C5	61.7							61.70
		C6a			52.64					52.64
		C6b							52.25	52.25
		C6c							16.58	16.58
		C6d							30.85	30.85
260	D 260 Lotala (N)	C1				21.5				21.50
		C2					43.13			43.13
261	D 261 Gurjub	C1			38.52					38.52
		C2							27.37	27.37
		C3							13.62	13.62
		C4							26.85	26.85
		C5							22.57	22.57
262	D 262 Kathondhar	C1a			63.46					63.46
		C1b			34.9					34.90
		C1c			31.31					31.31
		C1d			53.09					53.09
		C2a			17.34					17.34
		C2b			61.76					61.76
		C3a			80.38					80.38
		C3b			28.56					28.56
		C3c			27.92					27.92
		C4							43.36	43.36
263	D 263 Kathaun dhar	Whole				5.5				5.50
264	D 264 Khatoo (N)	Whole					13.09			13.09
265	D 265 Khatoo (O)	C1		17.42						17.42
		C2		35.83						35.83
266	D 266 Lahari shill	C1			49.86					49.86
		C2			19.62					19.62
		C3			25.13					25.13
267	D 267 Sagoradhar	C1	9.96							9.96
		C2	31.19							31.19

268	D 268 Janehar	C1	43.69								43.69
		C2	54.89								54.89
269	D 269 Kalanju	C1				56.97					56.97
		C2			39.06						39.06
270	D 270 Ruhmani	C1			37.99						37.99
		C2			61.77						61.77
		C3	73.95								73.95
271	D 271 Ruhmani (N)	Whole	12.53								12.53
272	D 272 Lahair	Whole		50.88							50.88
273	D 273 Lassu	Whole	67.4								67.40
274	D 274 Chattri	Whole		38.55							38.55
275	D 275 Kathnallo	Whole			68.9						68.90
276	D 276 Rachuwar Gahar (O)	Whole								70.39	70.39
277	D 277 Rachuwar Gahar (N)	C1								52.22	52.22
		C2								66.12	66.12
		C3								69.05	69.05
278	D 278 Nadaun	Whole								251.85	251.85
279	D 279 Nadaun I	C1								47.44	47.44
		C2								64.92	64.92
280	D 280 Nadaun II	Whole								33.83	33.83
281	D 281 Chha Nal	C1		42.85							42.85
		C2			27.91						27.91
282	D 282 Choura	Whole								12.63	12.63
283	D 283 Raidhar	Whole	125.07								125.07
284	D 284 Karsain bir	Whole							144.15		144.15
285	D 285 Chaplandi	Whole		38.67							38.67
286	D 286 Lather shill	Whole			4.08						4.08
287	D 287 Hall (O)	Whole		75.85							75.85
288	D 288 Hall (N)	Whole								10.63	10.63
289	D 289 Ghanidhar	Whole								19.34	19.34
290	D 290 Planidhar	Whole							70.66		70.66
291	D 291 Phaidhar	C1				52					52.00
		C2		23.74							23.74
292	D 292 Siri naryan	C1	44.15								44.15

13	U 13 Kalaini Khudla	Whole									25.6	25.6
14	U 14 Chhol	Whole								2.16		2.16
15	U 15 Jadhog	Whole								14.49		14.49
16	U 16 Bhanera	Whole								1.7		1.7
17	U 17 Chalauni	Whole					16.6					16.6
18	U 18 Kot	Whole								6.75		6.75
	TOTAL KARSOG RANGE						16.6			34.2	64.84	115.64
							SERI	RANGE				
19	U 19 Jhunjan	Whole									79.83	79.83
	TOTAL SERI RANGE										79.83	79.83
							MAGROO	RANGE				
20	U 20 Tipra	Whole							9.81			9.81
	TOTAL MAGROO RANGE								9.81			9.81
	TOTAL UPF KARSOG DIVISION		0	0	0	0	16.6	0	9.81	36	#REF!	675.04
	TOTAL DPF & UPF KARSOG DIVISION		2292.51	2908.88	504.59	1301	3669.02	4379.69	567.73	5206.13	#REF!	33814.05

ANNEXURE XII													
ENUMERATION RESULTS													
DEODAR-KAIL WORKING CIRCLE													
PANGNA RANGE PB I													
Name & No.	Area ha	Spp.	10to20 cm	20-30 cm	30-40 cm	40-50 cm	50-60 cm	60-70 cm	70-80 cm	80-90 cm	90-100 cm	Total	Allot.
D 15 Rakni C1	10.45	DEODAR	355	314	445	306	221	139	84	35	40	1,939	PB I
		KAIL	3	9	5	2	1	1	0	0	0	21	
		CHIL	65	9	8	3	4	5	2	2	0	98	
		BAN	2	1	1	3	1	3	3	1	2	17	
		OBL	4	0	0	0	0	0	0	0	0	4	
		TOTAL	429	333	459	314	227	148	89	38	42	2,079	
D 22 Chandainident C2a	54.85	DEODAR	1633	1322	1182	1243	1065	683	601	446	468	8,643	PB I
		KAIL	726	557	471	267	294	210	150	28	21	2,724	
		FIR / SPRUCE	527	393	192	60	43	31	21	12	3	1,282	
		BAN	37	53	18	4	25	1	0	0	0	138	
		OBL	1005	514	46	0	0	2	0	0	0	1,567	
		TOTAL	3,928	2,839	1,909	1,574	1,427	927	772	486	492	14,354	
D 22 Chandainident C2b	11.34	DEODAR	206	182	153	135	138	138	143	109	95	1,297	PB I
		KAIL	94	35	32	28	11	10	15	18	15	256	
		RAI/FIR	4	8	2	3	2	0	2	0	0	19	
		TOTAL	304	223	187	164	151	146	160	127	110	1,572	
D 22 Chandainident C2c	29.72	DEODAR	1053	965	744	528	485	446	258	128	117	4,724	PB I
		KAIL	203	250	221	179	167	102	59	24	11	1,216	
		FIR / SPRUCE	43	46	43	2	12	6	1	0	0	153	
		BAN	116	142	133	62	44	12	7	0	3	519	
		OBL	150	153	14	0	0	0	0	0	0	317	
		TOTAL	1,565	1,556	1,155	771	708	566	325	152	131	6,929	
D 23 Barnog W	53.33	DEODAR	451	1111	5361	6591	3039	2450	1377	734	54	21,168	PB I
		KAIL	57	61	132	120	110	104	53	12	3	652	
		FIR / SPRUCE	2	0	20	3	0	0	0	0	0	25	
		BAN	5	14	23	36	14	15	5	0	0	112	
		OBL	122	83	33	2	0	0	0	0	0	240	
		TOTAL	637	1,269	5,569	6,752	3,163	2,569	1,435	746	57	22,197	
D 27 Mahasu C2a	42.91	DEODAR	2210	1530	810	740	630	590	440	280	300	7,530	PB I
		KAIL	570	580	570	430	380	340	210	90	100	3,270	
		FIR / SPRUCE	70	60	40	30	10	10	10	10	0	240	

Name & No. of forest Camp.	Area ha	Spp.	10to20 cm	20-30 cm	30-40 cm	40-50 cm	50-60 cm	60-70 cm	70-80 cm	80-90 cm	90-100 cm	Total	Allot.	
		BAN	6	12	9	8	4	1	0	0	1	39		
		OBL	2	11	10	8	2	0	0	1	3	35		
		TOTAL	2.858	2.193	1.439	1.212	1.026	941	660	381	404	11.114		
D 27 Mahasu C2b	51.13	DEODAR	10998	7659	5507	3621	2062	1395	575	306	138	32,259	PB I	
		KAIL	750	548	344	219	112	33	24	18	8	2,058		
		FIR / SPRUCE	826	410	171	133	84	48	46	27	28	1,771		
		BAN	20	8	4	5	2	2	4	1	0	44		
		OBL	590	9	2	2	0	0	0	0	0	603		
		TOTAL	13184	8632	6028	3980	2260	1478	649	352	170	36,733		
D 27 Mahasu C2c	36.38	DEODAR	8099	3605	2839	1935	1529	1140	835	503	198	20,683	PB I	
		KAIL	911	419	198	124	105	65	52	29	14	1,917		
		FIR / SPRUCE	1777	895	552	368	298	234	189	113	81	4,507		
		BAN	5	0	0	1	0	0	0	0	0	8		
		OBL	1233	276	63	30	17	11	8	2	0	1,640		
		TOTAL	12025	5195	3652	2458	1949	1450	1084	647	293	28,753		
D 27 Mahasu C3a	8.156	DEODAR	795	315	163	134	115	73	54	76	15	1740	PB I	
		KAIL	643	219	172	126	103	114	103	95	83	1658		
		RAI/FIR	10	6	10	4	4	6	4	0	0	44		
		TOTAL	1448	540	345	264	222	193	161	171	98	3442		
D 27 Mahasu C3b	5.33	DEODAR	550	242	156	130	112	52	26	20	10	1298	PB I	
		KAIL	440	204	183	191	141	75	33	12	16	1295		
		RAI/FIR	32	4	6	4	5	5	2	2	2	62		
		KHANOR	10	3	2	2	3	2	2	1	2	27		
		TOTAL	1032	453	347	327	261	134	63	35	30	2682		
D 27 Mahasu C3c	20.34	DEODAR	6248	3586	2436	1819	922	733	228	70	33	15,875	PB I	
		KAIL	2960	1158	517	315	140	98	70	58	26	5,342		
		FIR / SPRUCE	1509	899	468	219	97	85	52	24	17	3,368		
		OBL	736	201	29	2	0	0	0	0	0	968		
		TOTAL	11453	5844	3448	2155	1159	916	350	152	76	25553	PB I	
D 27 Mahasu C3d	4.92	DEODAR	642	281	144	114	93	41	13	7	3	1338		
		KAIL	253	121	111	133	118	37	12	9	8	800		
		TOTAL	895	402	255	247	211	78	25	16	9	2138		

DEODAR-KAIL WORKING CIRCLE													
PANGNA RANGE PB I													
Area	Spp.	10to20	20-30	30-40	40-50	50-60	60-70	70-80	80-90	90-100	TOTAL		VOL M3
ha		cm	cm	cm	cm	cm	cm	cm	cm	cm			
326.91	DEODAR	33240	21112	19940	17096	10411	7878	4634	2714	1489	118484	181981.1	
	KAIL	7810	4181	2956	2132	1682	1189	781	393	303	21207	24011.7	
	CHIL	65	9	8	3	4	5	2	2	0	98	48.64	
	RAI/FIR	4800	2719	1502	826	555	425	327	188	129	11471	11503.636	
	BAN	191	228	188	117	90	34	19	2	6	875	846.8	
	KHANOR	10	3	2	2	3	2	2	1	2	27	20.129	
	OBL	3842	1247	197	42	19	13	8	3	3	5374	747.773	
	TOTAL	49758	29479	24783	20218	12764	9546	5773	3303	1912	157546	199157.78	
ENUMERATION RESULTS													
DEODAR-KAIL WORKING CIRCLE													
PANGNA RANGE PB II													
Name & No. of forest Comp.	Area ha	Spp.	10to20 cm	20-30 cm	30-40 cm	40-50 cm	50-60 cm	60-70 cm	70-80 cm	80-90 cm	90-100 cm	Total	Allot.
D 10 Kelo Sarahi W	1.42	DEODAR	630	110	225	113	29	0	0	0	0	1107	PB III
		KAIL	420	0	0	0	0	0	0	0	0	420	
		BAN	7	0	0	0	0	0	0	0	0	7	
		TOTAL	1057	110	225	113	29	0	0	0	0	1534	
D 11 Kail Sarahi W	1.6	KAIL	354	92	22	5	1	0	0	0	0	474	PB II
		TOTAL	354	92	22	5	1	0	0	0	0	474	
D 19 Shalog C1a	6.3	DEODAR	1035	368	456	219	168	114	36	17	10	2,423	PB III
		KAIL	333	215	150	52	40	38	29	0	0	857	
		CHIL	258	172	114	53	30	25	16	0	0	661	
		TOTAL	1626	755	720	324	238	177	81	17	10	3,941	
D 19 Shalog C1b	7.13	DEODAR	1139	660	570	424	319	116	80	50	25	3,383	PB III
		CHIL	0	5	4	6	8	10	0	0	0	33	
		TOTAL	1139	665	574	430	327	126	80	50	25	3,416	
D 19 Shalog C2a	6.39	DEODAR	510	170	250	280	313	234	105	90	42	1,994	PB II
		KAIL	107	22	10	5	4	0	0	0	1	149	
		BAN	0	2	5	10	4	3	2	1	0	27	
		TOTAL	617	194	265	295	321	237	107	91	43	2,170	
D 19 Shalog C2b	11.37	DEODAR	612	290	260	340	242	90	46	32	30	1,942	PB II

Name & No. of forest Comp.	Area ha	Spp.	10-20 cm	20-30 cm	30-40 cm	40-50 cm	50-60 cm	60-70 cm	70-80 cm	80-90 cm	90-100 cm	Total	Allot.
		KAIL	250	130	130	126	82	34	12	11	2	777	
		BAN	12	1	1	1	0	0	0	0	0	15	
		TOTAL	874	421	391	467	324	124	58	43	32	2,734	
D 19 Shaloo C4	8.17	DEODAR	825	352	203	264	232	128	41	52	31	2128	PB II
		KAIL	12	4	0	0	0	0	0	0	0	16	
		CHIL	1223	241	220	127	43	44	12	11	0	1721	
		TOTAL	1860	597	523	391	275	172	53	63	31	3865	
D 25 Basundra W	33.99	DEODAR	470	433	645	707	631	532	174	128	146	3866	PB II
		KAIL	15	5	3	6	6	7	1	1	3	47	
		OBL	11	15	31	26	17	13	11	0	0	124	
		TOTAL	496	453	679	739	654	552	186	129	149	4037	
D 26 Chhohara C1a	10.02	DEODAR	271	103	136	194	256	218	93	45	58	1374	PB II
		KAIL	104	33	52	143	144	113	65	23	12	689	
		TOTAL	375	136	188	337	400	331	158	68	70	2063	
D 26 Chhohara C1b	7.38	DEODAR	782	405	160	114	95	116	60	52	20	1814	PB II
		KAIL	103	76	50	30	32	41	21	10	10	373	
		RAI/FIR	20	4	1	7	1	0	0	0	0	33	
		OBL	199	53	51	0	0	0	0	0	0	303	
		TOTAL	1114	538	262	151	128	157	81	62	30	2523	
D 26 Chhohara C3	5.19	DEODAR	272	120	131	130	120	90	70	70	100	1103	PB II
		KAIL	165	70	90	70	100	102	121	85	62	865	
		RAI/FIR	182	89	74	95	66	74	73	51	62	766	
		TOTAL	619	279	295	295	286	266	264	206	224	2734	
D 27 Mahasu C1	2.38	DEODAR	112	80	51	54	53	40	22	14	13	439	PB II
		KAIL	102	30	44	33	36	29	9	7	1	291	
		BAN	20	3	1	0	0	0	0	0	0	24	
		TOTAL	234	113	96	87	89	69	31	21	14	754	
D 27 Mahasu C4	5.78	DEODAR	296	124	216	143	98	70	12	6	0	983	PB II
		KAIL	109	63	68	28	32	21	1	1	0	323	
		CHIL	34	25	21	28	26	25	5	1	0	165	
		TOTAL	439	212	305	199	154	116	18	8	0	1,451	
D 27 Mahasu C6a	5.82	DEODAR	73	69	155	144	130	94	14	20	1	700	PB II
		KAIL	43	35	39	27	48	16	2	3	1	212	

Name & No. of forest	Area ha	Spp.	10-20 cm	20-30 cm	30-40 cm	40-50 cm	50-60 cm	60-70 cm	70-80 cm	80-90 cm	90-100 cm	Total	Allot.
Comp.													
		CHIL	46	13	29	6	3	5	0	0	0	102	
		BAN	4	1	0	0	0	0	0	0	0	5	
		TOTAL	166	118	223	177	179	115	16	23	2	1,018	
D 27 Mahasu C6b	7.13	DEODAR	403	221	174	161	172	107	62	36	35	1,371	PB II
		KAIL	162	122	91	71	40	27	13	0	0	526	
		TOTAL	565	343	265	232	212	134	75	36	35	1,897	
D 29 Begli Suket C1	2.38	DEODAR	71	102	52	33	22	5	0	0	0	285	PB II
		KAIL	242	233	226	155	74	65	42	34	13	1,184	
		BAN OAK	54	42	23	0	0	0	0	0	0	119	
		TOTAL	367	477	301	188	96	70	42	34	13	1,588	
D 38 Bakaran C2	11.74	DEODAR	178	315	277	254	216	192	104	45	23	1,604	PB II
		KAIL	114	42	33	134	71	65	42	28	16	545	
		RAUFIR	4	2	0	2	1	0	2	0	0	11	
		OBL	33	18	4	0	0	0	0	0	0	55	
		TOTAL	329	377	314	390	288	257	148	73	39	2,215	
D 38 Bakaran C3	14.26	DEODAR	342	206	173	151	304	313	206	154	38	1,887	PB II
		KAIL	114	62	33	35	46	66	44	33	22	455	
		RAUFIR	0	3	5	0	0	0	0	0	0	8	
		BAN OAK	41	32	0	0	0	0	0	0	0	73	
		OBL	62	22	2	0	0	0	0	0	0	86	
		TOTAL	559	325	213	186	350	379	250	187	60	2,509	
D 39 Shil C1	24.83	DEODAR	366	292	283	192	215	166	122	83	64	1,783	PB II
		KAIL	304	272	153	142	55	63	82	54	62	1,227	
		BAN OAK	73	82	43	16	12	0	0	0	1	230	
		OBL	44	22	1	0	0	0	0	0	0	67	
		TOTAL	787	668	480	350	322	232	204	137	127	3,307	
D 40 Bajhu C2	3.06	DEODAR	382	173	135	74	52	13	3	2	1	835	PB II
		KAIL	192	62	13	5	1	0	0	0	0	273	
		CHIL	38	14	7	8	6	1	1	0	0	81	
		TOTAL	612	249	155	87	59	20	4	2	1	1,189	
D 40 Bajhu C3	3.97	DEODAR	133	82	66	62	24	8	1	1	0	377	
		KAIL	90	44	14	21	5	0	0	0	0	174	
		CHIL	14	42	32	21	13	4	0	0	0	126	

Name & No. of forest Comp.	Area ha	Spp.	10to20 cm	20-30 cm	30-40 cm	40-50 cm	50-60 cm	60-70 cm	70-80 cm	80-90 cm	90-100 cm	Total	Allot.
		TOTAL	237	168	112	104	42	12	1	1	0	677	
D 41 Bakhras C3	11.33	DEODAR	1308	350	52	170	11	12	12	0	0	1915	PB II
		KAIL	1116	609	140	210	123	95	11	0	0	2304	
		CHIL	556	275	120	185	84	72	2	0	0	1294	
		TOTAL	2980	1234	312	565	218	179	25	0	0	5513	
D 42 Charkufri C1	5.37	DEODAR	264	145	94	59	15	1	0	0	0	578	PB II
		KAIL	939	343	162	72	11	2	0	0	0	1529	
		CHIL	374	71	48	57	54	18	2	0	0	624	
		TOTAL	1577	559	304	188	80	21	2	0	0	2731	
					DEODAR-KAIL WORKING CIRCLE								
					PANGNA RANGE			PB	II				
	Area	Spp.	10to20	20-30	30-40	40-50	50-60	60-70	70-80	80-90	90-100	Total	VOL. M3
	ha		cm	cm	cm	cm	cm	cm	cm	cm	cm		
	202.16	DEODAR	10484	5170	4784	4282	3715	2659	1263	897	637	33871	50142.9
		KAIL	5390	2564	1523	1370	949	784	495	290	205	13570	15282.68
		CHIL	2543	858	595	491	267	210	38	12	0	5014	1914.98
		RAI/FIR	206	98	80	104	68	74	75	51	62	818	2124.942
		BAN	211	163	73	27	16	6	2	1	1	500	226
		OBL	349	130	89	26	17	13	11	0	0	635	219.31
		TOTAL	19183	8983	7124	6300	5032	3746	1884	1251	905	54408	69910.58
					ENUMERATION RESULTS								
					DEODAR-KAIL WORKING CIRCLE								
					PANGNA RANGE			PB	III				
Name & No. of forest Comp.	Area ha	Spp.	10to20 cm	20-30 cm	30-40 cm	40-50 cm	50-60 cm	60-70 cm	70-80 cm	80-90 cm	90-100 cm	Total	Allot.
D 32 Shahal W	4.78	DEODAR	65	83	228	184	13	5	0	0	0	576	PB III
		KAIL	23	15	6	2	0	0	0	0	0	46	
		CHIL	106	34	22	4	2	1	0	0	0	169	
		TOTAL	194	132	254	190	15	6	0	0	0	791	
D 59 Dharmour W	0.71	DEODAR	16	13	0	0	0	0	0	0	0	29	PB III
		KAIL	174	125	62	4	0	0	0	0	0	365	

Name & No. of forest Comp.	Area ha	Spp.	10to20 cm	20-30 cm	30-40 cm	40-50 cm	50-60 cm	60-70 cm	70-80 cm	80-90 cm	90-100 cm	Total		
		CHIL	214	44	2	1	1	0	0	0	0	282		
		TOTAL	404	182	64	5	1	0	0	0	0	858		
					DEODAR-KAIL WORKING CIRCLE									
					PANGNA RANGE				PB	III				
	Area	Spp.	10to20	20-30	30-40	40-50	50-60	60-70	70-80	80-90	90-100	Total		VOL M3
	ha		cm	cm	cm	cm	cm	cm	cm	cm	cm			
	5.49	DEODAR	81	96	226	184	13	5	0	0	0	605		536.54
		KAIL	197	140	68	6	0	0	0	0	0	411		92.66
		CHIL	320	78	24	5	3	1	0	0	0	431		42.08
		TOTAL	598	314	318	195	16	6	0	0	0	1447		671.28
					ENUMERATION RESULTS									
					DEODAR-KAIL WORKING CIRCLE									
					PANGNA RANGE				PB	IV				
Name & No. of forest Comp.	Area ha	Spp.	10to20 cm	20-30 cm	30-40 cm	40-50 cm	50-60 cm	60-70 cm	70-80 cm	80-90 cm	90-100 cm	Total	Allot.	
D 22 Chhandaintdent C1	62.12	DEODAR	20179	4643	2022	1138	927	776	608	353	169	30,815	PB IV	
		KAIL	2891	1000	512	411	312	298	260	175	39	5,998		
		CHIL	21	10	4	11	10	2	1	0	0	59		
		FIR / SPRUCE	233	59	22	11	3	1	3	0	0	332		
		BAN	138	52	57	57	17	9	5	6	3	344		
		OBL	3168	444	140	27	8	0	0	0	0	3,785		
		TOTAL	26,730	6,208	2,757	1,655	1,275	1,086	877	534	211	41,333		
D 26 Chhohara C2a	36.78	DEODAR	4413	6812	1307	783	206	185	79	54	58	13,895	PB IV	
		KAIL	523	407	81	52	38	40	23	12	13	1,189		
		FIR / SPRUCE	2120	2588	643	218	107	63	23	19	17	5,791		
		OBL	406	104	2	1	0	0	0	0	0	513		
		KHANOR	3	2	0	0	0	0	0	0	0	5		
		TOTAL	7,465	9,913	2,033	1,054	351	288	125	85	86	21,400		
D 26 Chhohara C2b	23.57	DEODAR	3424	4859	1282	567	465	255	168	108	71	11,204	PB IV	
		KAIL	1946	2328	768	386	221	122	36	12	7	5,826		
		FIR / SPRUCE	1757	1765	308	97	60	29	8	4	1	4,029		

Name & No. of forest Comp.	Area ha	Spp.	10to20 cm	20-30 cm	30-40 cm	40-50 cm	50-60 cm	60-70 cm	70-80 cm	80-90 cm	90-100 cm	Total	Allot.
		OBL	22	0	0	0	0	0	0	0	0	22	
		KHANOR	22	35	5	0	0	0	0	0	0	62	
		TOTAL	7.171	8.987	2.363	1.050	746	410	213	124	79	21.143	
D 26 Chhohara C4a	39.33	DEODAR	4288	6159	1578	963	545	282	208	96	45	14,164	PB IV
		KAIL	2630	3330	757	417	277	191	118	60	23	7,803	
		FIR / SPRUCE	2943	3220	792	378	221	149	108	56	14	7,881	
		OBL	13	8	3	2	0	0	0	0	0	26	
		TOTAL	9.874	12.717	3.130	1.760	1.043	622	434	212	82	29.874	
D 26 Chhohara C4b	31.53	DEODAR	5912	5280	1738	771	393	267	195	124	111	14,791	PB IV
		KAIL	2325	1642	441	330	208	169	88	38	22	5,241	
		FIR / SPRUCE	1936	1202	511	343	126	71	134	32	17	4,372	
		BAN	122	51	22	10	4	1	0	0	0	210	
		OBL	18	4	2	0	0	0	0	0	0	24	
		TOTAL	10.313	8.179	2.714	1.454	731	508	397	192	150	24,638	
D 30 Bedli Mandi W	48.37	DEODAR	6286	5832	3737	2370	1686	1151	595	56	0	21,713	PB IV
		KAIL	333	346	124	87	99	94	48	17	9	1,157	
		CHIL	4283	2147	1177	522	82	41	14	4	0	8,270	
		OBL	39	6	0	0	0	0	0	0	0	45	
		TOTAL	10,941	8,331	5,038	2,979	1,887	1,286	657	77	9	31,185	
					DEODAR-KAIL WORKING CIRCLE								
					PANGNA RANGE				PB	IV			
	Area	Spp.	10to20	20-30	30-40	40-50	50-60	60-70	70-80	80-90	90-100	Total	VOL.M3
	ha		cm	cm	cm	cm	cm	cm	cm	cm	cm		
	241.7	DEODAR	44502	33585	11664	6592	4222	2920	1854	791	452	106582	70045.14
		KAIL	10748	9053	2683	1683	1155	914	553	312	113	27214	18950.06
		CHIL	4304	2157	1181	533	92	43	15	4	0	8329	1504.42
		FIR / SPRUCE	8989	8834	2276	1047	517	313	276	111	49	22412	12537.36
		BAN	260	103	79	87	21	10	5	6	3	554	341.14
		KHANOR	25	37	5	0	0	0	0	0	0	67	12.369
		OBL	3666	566	147	30	6	0	0	0	0	4415	472.433
		TOTAL	72494	54335	18035	8952	6013	4200	2703	1224	817	169573	103862.9

ENUMERATION RESULTS													
DEODAR-KAIL WORKING CIRCLE													
KARSOG RANGE PB I													
Name & No. of forest	Area ha	Spp.	10to20 cm	20-30 cm	30-40 cm	40-50 cm	50-60 cm	60-70 cm	70-80 cm	80-90 cm	90-100 cm	Total	Allot.
Comp.													
D 164 Mashogra W	5.65	DEODAR	2	0	0	0	0	0	0	0	0	2	PB I
		KAIL	450	80	9	45	40	18	10	2	1	853	
		CHIL	177	5	5	12	11	2	0	0	0	212	
		TOTAL	629	85	14	57	51	18	10	2	1	857	
D 170 Takker Karsog	33.03	DEODAR	3300	622	139	57	16	8	10	2	2	4156	PB I
C4a		KAIL	5849	1416	564	274	150	77	43	30	19	8422	
		CHIL	15	1	0	0	1	0	0	0	0	17	
		RAI/FIR	1287	473	203	103	69	46	37	15	20	2253	
		BAN	3183	676	318	185	114	76	52	25	29	4652	
		OBL	1540	652	226	44	4	8	0	0	0	2474	
		TOTAL	15174	3840	1450	663	354	215	142	72	70	21980	
D 170 Takker Karsog	48.19	DEODAR	1330	178	37	9	3	2	0	0	0	1559	PB I
C4b		KAIL	3909	1309	633	403	227	173	120	45	40	6859	
		RAI/FIR	320	84	51	23	27	12	13	8	11	549	
		CHIL	226	42	11	4	5	10	5	1	2	306	
		BAN	5236	1384	565	420	344	245	163	65	67	8489	
		OBL	5335	1990	660	245	92	39	20	8	5	8394	
		TOTAL	16356	4987	1957	1104	698	481	321	127	125	26156	
D 170 Takker Karsog	19.36	DEODAR	660	115	72	52	50	21	4	0	2	976	PB I
C4c		KAIL	2198	1178	328	183	128	84	40	15	11	4165	
		RAI/FIR	316	202	106	59	47	16	10	5	30	791	
		CHIL	860	385	147	85	38	18	8	4	0	1525	
		BAN	5364	1713	477	330	158	90	59	30	23	8244	
		OBL	1495	549	153	51	10	11	3	0	0	2261	
		TOTAL	10893	4122	1283	760	431	229	124	54	66	17962	
D 171 Dapha-II C2	15.88	DEODAR	153	88	217	132	44	59	8	1	0	752	PB I
		KAIL	1244	1450	1670	1846	1791	1184	817	357	127	10,486	
		CHIL	4	2	1	1	0	0	0	0	0	8	
		RAI/FIR	90	30	8	36	16	17	14	18	0	229	
		BAN	2170	2698	2282	1474	995	435	357	248	179	10,838	

ENUMERATION RESULTS													
DEODAR-KAIL WORKING CIRCLE													
KARSOG RANGE PB II													
Name & No. of forest Comp.	Area ha	Spp.	10to20 cm	20-30 cm	30-40 cm	40-50 cm	50-60 cm	60-70 cm	70-80 cm	80-90 cm	90-100 cm	Total	Allot.
D 139 Odda C1	6.08	DEODAR	776	428	141	80	22	12	3	3	3	1468	PB II
		KAIL	54	12	3	2	0	0	0	0	0	71	
		CHIL	121	89	92	34	10	3	0	0	0	349	
		BAN OAK	12	7	0	0	1	0	0	0	0	20	
		OBL	23	6	0	0	0	0	0	0	0	29	
		TOTAL	986	542	236	116	33	15	3	3	3	1937	
D 143 Kandhi dech W	1.77	DEODAR	1154	320	196	162	56	23	13	13	8	1,945	PB II
		KAIL	19	9	2	0	0	0	0	0	0	30	
		CHIL	139	12	10	8	4	2	0	1	0	176	
		TOTAL	1312	341	208	170	60	25	13	14	8	2,151	
D 144 Kashmir W	23.45	DEODAR	17	23	8	5	0	1	0	0	0	54	PB II
		KAIL	116	56	129	96	41	17	13	4	1	471	
		CHIL	146	107	84	19	13	1	0	0	0	370	
		BAN OAK	2	0	0	0	0	0	0	0	0	2	
		OBL	3	1	1	0	0	0	0	0	0	5	
		TOTAL	284	187	222	120	54	19	11	4	1	902	
D 148 Karani C1	2.816	DEODAR	156	76	12	3	1	1	1	0	0	256	PB II
		KAIL	357	124	52	9	0	0	0	0	0	542	
		CHIL	645	74	6	7	4	3	0	0	0	739	
		TOTAL	1158	274	70	19	11	4	1	0	0	1537	
D 165 Chindhi C2	1.69	DEODAR	373	160	112	55	13	2	1	0	0	716	PB II
		KAIL	72	34	3	0	0	0	0	0	0	109	
		CHIL	120	28	5	3	2	2	0	0	0	160	
		TOTAL	565	222	120	58	15	4	1	0	0	985	
D 166 Chakranth C1	4.56	DEODAR	623	01	74	110	111	66	34	1	0	1108	PB II
		KAIL	1959	598	110	78	81	53	30	4	0	2913	
		CHIL	183	48	23	25	13	6	2	0	0	300	
		TOTAL	2765	727	207	213	205	125	66	5	0	4313	
D 167 Bajhu C1	4.71	DEODAR	164	24	16	8	6	2	0	0	0	220	PB II

Name & No. of forest Camp.	Area ha	Sp.	10to20 cm	20-30 cm	30-40 cm	40-50 cm	50-60 cm	60-70 cm	70-80 cm	80-90 cm	90-100 cm	Total	Allot.
		KAIL	114	41	51	16	9	5	0	0	0	442	
		RAI/FIR	2	0	0	0	0	0	0	0	0	2	
		CHIL	13	1	8	1	3	0	0	0	0	46	
		TOTAL	913	72	75	25	18	7	0	0	0	1110	
D 167 Baihu C2	5.78	DEODAR	318	84	24	8	7	9	3	1	0	446	PB II
		KAIL	587	111	7	2	1	0	1	0	0	709	
		RAI/FIR	803	60	15	11	10	3	2	0	0	904	
		TOTAL	1700	255	46	21	18	12	6	1	0	2059	
D 170 Tikar Karsog C2a	13.50	KAIL	382	271	224	56	20	6	4	0	0	963	PB II
		DEODAR	6	2	0	1	1	0	0	0	0	10	
		CHIL	452	191	105	54	16	9	3	6	0	836	
		BAN OAK	430	110	90	30	10	18	20	0	0	908	
		OBL	32	30	4	0	0	0	0	0	0	66	
		TOTAL	1302	804	423	141	47	33	27	6	0	2183	
D 173 Dapha C2d	9.02	KAIL	221	88	73	54	32	13	2	0	0	483	
		DEODAR	112	58	90	52	63	16	8	4	0	403	
		RAI/FIR	63	18	7	9	7	3	1	3	0	120	
		BAN OAK	597	196	103	90	78	23	30	10	9	1136	
		OBL	805	280	87	33	2	0	0	0	0	1207	
		TOTAL	1797	640	310	238	182	55	41	17	9	3349	
D 173 Dapha C2f	7.6	KAIL	327	405	99	115	102	27	28	0	0	1109	PB II
		DEODAR	116	95	49	15	9	7	3	0	0	294	
		CHIL	198	60	30	11	14	16	0	0	0	329	
		BAN OAK	507	141	91	23	18	8	0	0	0	794	
		OBL	51	161	122	5	3	1	0	0	0	343	
		TOTAL	1199	868	391	169	152	59	31	0	0	2869	
D 173 Dapha C4c	7.56	KAIL	293	113	82	52	33	14	2	0	0	589	PB II
		DEODAR	283	123	83	63	42	32	12	1	0	639	
		RAI/FIR	835	387	139	74	41	14	11	0	0	1541	
		BAN OAK	233	72	21	6	1	0	0	0	0	333	
		OBL	1644	695	365	195	117	60	25	1	0	3103	
D 173 Dapha C4d	15.1	KAIL	34	35	43	4	3	2	1	0	0	122	PB II
		DEODAR	464	373	742	232	181	152	54	22	2	2222	
		RAI/FIR	152	82	73	33	13	4	2	2	0	361	

Name & No. of forest Comp.	Area ha	Spp.	10to20 cm	20-30 cm	30-40 cm	40-50 cm	50-60 cm	60-70 cm	70-80 cm	80-90 cm	90-100 cm	Total	Allot.
		KHARSU	630	422	432	292	162	33	5	3	2	1981	
		OBL	4	1	1	1	0	0	0	0	0	7	
		TOTAL	1284	913	1291	562	359	191	62	27	4	4693	
D 173 Dapha C4e	8.5	KAIL	221	88	73	54	32	13	2	0	0	483	PB II
		DEODAR	1126	58	90	52	63	16	8	4	0	403	
		RAI/FIR	62	18	17	9	7	3	1	3	0	120	
		BAN OAK	597	196	103	90	78	23	30	10	9	1136	
		OBL	805	280	87	33	2	0	0	0	0	1207	
		TOTAL	1797	640	370	238	182	55	41	17	9	3349	
D 173 Dapha C4f	16.17	KAIL	532	222	102	31	0	2	2	1	0	892	PB II
		DEODAR	282	132	11	0	0	0	1	0	0	426	
		RAI/FIR	220	120	90	53	0	0	0	0	0	483	
		BAN OAK	1732	618	382	250	91	31	11	2	2	3119	
		OBL	530	284	174	13	0	0	0	0	0	1001	
		TOTAL	3296	1376	759	347	91	33	14	3	2	5921	
D 188 Kandhi C1	3.4	DEODAR	122	62	71	41	12	2	0	0	0	310	PB II
		KAIL	372	142	122	112	62	22	3	0	0	835	
		CHIL	382	145	72	21	4	2	0	0	0	626	
		BAN OAK	472	111	32	4	2	0	0	0	0	621	
		OBL	43	2	0	0	0	0	0	0	0	45	
		TOTAL	1391	482	297	178	80	26	3	0	0	2457	
D 188 Kandhi C4	10.95	DEODAR	501	504	601	502	135	60	12	3	2	2320	PB II
		KAIL	323	163	211	235	141	72	10	3	0	1158	
		RAI/FIR	15	20	21	10	8	5	4	0	0	83	
		CHIL	125	51	60	65	21	5	3	0	0	330	
		BAN OAK	200	50	20	10	0	0	0	0	0	280	
		OBL	100	11	0	0	0	0	0	0	0	111	
		TOTAL	1264	799	913	822	305	142	29	6	2	4282	
D 189 Kandhi W	1.26	DEODAR	307	145	62	33	21	3	3	0	0	574	PB II
		KAIL	283	114	7	1	1	1	0	0	0	407	
		TOTAL	590	259	69	34	22	4	3	0	0	981	

DEODAR-KAIL WORKING CIRCLE													
KARSOG RANGE PB II													
	Area	Spp.	10to20	20-30	30-40	40-50	50-60	60-70	70-80	80-90	90-100	Total	VOL M3
	ha		cm	cm	cm	cm	cm	cm	cm	cm	cm		
	131.12	DEODAR	6892	2748	2382	1422	749	404	156	52	15	14820	8862.076
		KAIL	6896	2683	1348	840	530	231	85	8	0	12621	5684.36
		CHIL	4244	1061	541	269	122	61	14	8	0	6320	1119.17
		RAI/FIR	2151	705	402	199	86	32	21	8	0	3604	1619.093
		BAN OAK	4782	1707	842	503	279	103	91	22	20	8349	3521.53
		KHARSU	630	422	432	292	162	33	5	3	2	1981	1796.7
		OBL	4040	1751	841	280	124	61	25	1	0	7123	1831.414
		TOTAL	29635	11077	6788	3805	2052	825	397	102	37	54818	25434.343
ENUMERATION RESULTS													
DEODAR-KAIL WORKING CIRCLE													
KARSOG RANGE PB III													
Name & No. of forest Comp.	Area	Spp.	10to20	20-30	30-40	40-50	50-60	60-70	70-80	80-90	90-100	Total	Allot.
	ha		cm	cm	cm	cm	cm	cm	cm	cm	cm		
D 171 Dopha-II C1	3.53	DEODAR	193	114	72	38	24	6	2	0	0	449	PB III
		KAIL	144	83	44	33	12	15	2	0	0	333	
		RAI/FIR	120	82	52	32	22	11	2	2	2	325	
		BAN OAK	172	133	93	43	32	22	16	11	4	526	
		OBL	324	212	84	54	24	32	21	12	6	769	
		TOTAL	953	624	345	200	114	86	43	25	12	2402	
D 171 Dopha-II C4	10.43	DEODAR	115	26	6	4	0	0	0	0	0	151	PB III
		KAIL	714	322	154	113	102	102	45	3	5	1580	
		CHIL	4	6	2	0	0	0	0	0	0	12	
		RAI/FIR	77	22	12	11	12	12	5	4	2	157	
		BAN OAK	890	252	103	62	33	35	41	32	22	1470	
		MORU	42	22	10	4	0	0	0	0	0	78	
		OBL	262	182	91	52	31	11	4	1	0	634	
		TOTAL	2124	832	378	246	178	160	95	40	29	4082	
D 171 Dopha-II C7	9.38	KAIL	243	111	32	12	12	1	0	0	0	411	PB III
		CHIL	91	31	21	11	8	4	2	0	0	168	
		BAN OAK	1383	422	162	112	122	40	31	31	4	2277	

ENUMERATION RESULTS													
DEODAR-KAIL WORKING CIRCLE													
KARSOG RANGE PB IV													
Name & No.	Area	Spp.	10to20	20-30	30-40	40-50	50-60	60-70	70-80	80-90	90-100	Total	Allot.
of forest	ha		cm	cm	cm	cm	cm	cm	cm	cm	cm		
Comp.													
D 188 Kandhi C5a	15.68	DEODAR	1297	387	104	47	54	24	25	2	0	1,940	PB IV
		KAIL	1648	599	258	332	193	245	88	23	12	3,398	
		CHIL	1343	839	366	101	24	16	2	1	0	2,692	
		FIR / SPRUCE	236	90	40	19	9	1	2	1	2	400	
		BAN	1888	222	241	279	117	18	12	7	3	2,789	
		OBL	165	87	69	17	1	3	0	0	0	342	
		W/NUT	0	0	2	1	0	0	0	0	0	3	
		TOTAL	4521	1915	768	499	280	286	117	27	14	11,564	
D 188 Kandhi C5b	26.32	DEODAR	5260	803	426	479	144	27	8	4	3	7,154	PB IV
		KAIL	2805	1490	1030	621	1066	517	252	25	14	7,820	
		CHIL	870	981	119	97	26	0	0	0	0	2,093	
		FIR / SPRUCE	1717	699	249	114	118	169	43	29	14	3,152	
		BAN	1363	475	163	56	26	12	4	2	0	2,101	
		OBL	801	418	19	9	2	2	2	1	0	1,254	
		TOTAL	10652	3973	1824	1311	1354	713	303	58	31	23,574	
DEODAR-KAIL WORKING CIRCLE													
KARSOG RANGE PB IV													
	Area	Spp.	10to20	20-30	30-40	40-50	50-60	60-70	70-80	80-90	90-100	Total	VOL M3
	ha		cm	cm	cm	cm	cm	cm	cm	cm	cm		
	42	DEODAR	8557	1190	530	526	198	51	33	6	3	9094	2795.996
		KAIL	4453	2089	1288	953	1259	762	340	48	26	11218	11194.95
		CHIL	2213	1820	485	198	50	16	2	1	0	4785	721.63
		FIR / SPRUCE	1953	789	289	133	127	170	45	30	16	3552	2523.227
		BAN	3251	697	406	335	143	30	16	9	3	4890	1657.42
		W/NUT	0	0	2	1	0	0	0	0	0	3	2.236
		OBL	966	505	88	26	3	5	2	1	0	1596	269.406
		TOTAL	19393	7090	3088	2172	1780	1034	438	95	48	35138	19164.865

ENUMERATION RESULTS													
DEODAR-KAIL WORKING CIRCLE													
SERI RANGE PB I													
Name & No. of forest	Area ha	Sp. cm	10-20 cm	20-30 cm	30-40 cm	40-50 cm	50-60 cm	60-70 cm	70-80 cm	80-90 cm	90-100 cm	Total	Allot.
Comp.													
D 221 Kajjuni C1	8.64	CHIL	347	98	49	28	4	2	0	0	0	528	PBI
		DEODAR	637	77	84	111	82	27	7	3	2	1030	
		KAIL	159	50	50	40	16	5	5	0	1	326	
		BAN OAK	21	1	0	0	0	0	0	0	0	22	
		OBL	207	43	30	4	0	0	0	0	0	284	
		TOTAL	1371	269	213	181	102	34	12	3	3	2188	
D 225 Dhamoon C2a	32.23	DEODAR	442	645	1355	1609	1412	1161	536	282	185	7,627	PBI
		KAIL	40	41	69	27	17	7	3	1	1	206	
		CHIL	0	0	0	0	0	0	0	0	0	0	
		FIR / SPRUCE	128	104	62	36	18	11	5	6	7	377	
		BAN	70	16	2	1	0	0	0	0	0	89	
		OBL	450	170	27	11	1	0	0	0	0	659	
		WALNUT	12	2	0	6	3	0	10	1	0	34	
		KHANOR	0	20	22	11	2	0	0	2	0	57	
		TOTAL	1142	998	1537	1701	1453	1179	554	292	193	9049	
D 225 Dhamoon C2b	57.31	DEODAR	1841	1824	1433	1976	1995	1949	1687	1124	503	14,332	PBI
		KAIL	242	181	163	171	132	26	16	6	1	938	
		FIR / SPRUCE	1192	752	644	625	443	294	189	144	71	4,354	
		BAN	2007	1306	304	43	2	0	1	1	0	3,664	
		OBL	673	135	0	0	0	0	0	0	0	808	
		KHANOR	55	24	22	19	13	10	3	2	1	149	
		WALNUT	7	6	6	12	7	3	2	2	0	45	
		RAKHAL	21	10	5	6	3	2	0	0	0	47	
		TOTAL	6038	4238	2577	2852	2595	2284	1898	1279	576	24,337	
D 225 Dhamoon C2c	22.03	DEODAR	1843	1738	1604	1301	812	659	377	144	58	8,535	PBI
		KAIL	377	273	210	169	86	50	35	15	6	1,221	
		FIR / SPRUCE	425	343	39	68	16	21	4	13	4	933	
		BAN	788	158	44	11	2	0	0	0	0	1,003	
		OBL	532	111	38	9	2	2	1	0	0	691	
		KHANOOR	5	5	0	1	0	0	0	0	1	12	

Name & No. of forest Comp.	Area ha	Spp.	10-20 cm	20-30 cm	30-40 cm	40-50 cm	50-60 cm	60-70 cm	70-80 cm	80-90 cm	90-100 cm	Total	Allot.
		RAJHAL	0	4	1	1	0	1	0	0	0	7	
		TOTAL	3970	2632	1938	1560	818	734	417	172	69	12,408	
D 226 Khadra C4a	4.89	DEODAR	358	168	110	142	133	59	45	16	9	1039	PBI
		KAIL	528	142	187	378	349	259	116	52	26	2045	
		CHIL	11	1	12	10	1	0	0	0	0	35	
		BAN OAK	41	12	2	0	0	0	0	0	0	55	
		OBL	61	12	2	2	0	0	0	0	0	77	
		TOTAL	1000	333	323	530	483	318	161	68	35	3251	
D 226 Khadra C4b	8.26	DEODAR	198	162	368	288	111	16	1	0	1	1145	PBI
		KAIL	378	183	188	168	133	78	34	4	4	1170	
		RAI/FIR	3	1	7	1	2	1	1	0	0	16	
		OBL	6	0	0	0	0	0	0	0	0	6	
		TOTAL	585	346	563	457	246	95	36	4	5	2337	
D 223 Khadra C4c	5.21	DEODAR	246	6	4	2	5	3	1	2	1	270	PBI
		KAIL	433	91	143	161	120	71	30	5	0	1052	
		CHIL	1060	268	18	9	10	4	0	0	0	1371	
		BAN OAK	42	5	0	1	2	2	0	0	1	53	
		OBL	17	4	1	1	0	0	0	0	0	23	
		TOTAL	1798	374	166	174	137	80	31	7	2	2769	
D 236 Pathrevi C2a	7.78	DEODAR	382	234	67	41	17	23	13	7	4	788	PBI
		KAIL	160	121	92	44	34	16	8	1	1	477	
		RAI/FIR	46	10	0	0	7	6	4	5	4	82	
		CHIL	1	0	0	0	0	0	0	0	0	1	
		BAN OAK	680	345	101	51	60	42	40	22	32	1373	
		OBL	85	48	11	11	1	2	0	0	0	158	
		TOTAL	1354	758	271	147	119	89	65	35	41	2879	
D 236 Pathrevi C2b	5.57	DEODAR	278	310	64	31	40	31	19	9	1	783	PBI
		KAIL	141	134	147	32	18	7	3	1	1	484	
		RAI/FIR	31	30	28	18	12	20	2	3	2	146	
		BAN OAK	422	382	124	0	0	0	0	0	0	928	
		OBL	72	31	7	4	1	0	0	0	0	115	
		TOTAL	944	887	370	85	71	58	24	13	4	2458	
D 236 Pathrevi C2c	10.89	DEODAR	486	380	201	169	127	59	29	8	3	1462	
		KAIL	217	219	88	101	45	14	3	2	1	690	

Name & No. of forest Comp.	Area ha	Spp.	10to20 cm	20-30 cm	30-40 cm	40-50 cm	50-60 cm	60-70 cm	70-80 cm	80-90 cm	90-100 cm	Total	Allot.
		RAI/FIR	119	100	82	71	44	21	3	8	1	449	
		BAN OAK	1321	958	389	121	57	47	32	10	12	2947	
		OBL	271	138	39	9	1	0	0	0	0	458	
		TOTAL	2414	1795	799	471	274	141	72	23	17	6006	
D 236 Pathrevi C2d	4.07	DEODAR	288	140	110	82	36	30	20	3	2	711	PBI
		KAIL	104	122	70	80	26	14	2	0	0	418	
		RAI/FIR	32	22	12	8	8	2	1	1	1	91	
		CHIL	0	0	0	1	0	0	0	0	0	1	
		BAN OAK	860	370	111	112	75	50	22	17	10	1627	
		OBL	182	60	22	12	2	0	0	0	0	278	
		TOTAL	1466	714	325	299	147	96	45	21	13	3128	
D 236 Pathrevi C2e	3.85	DEODAR	412	201	82	72	37	17	5	0	0	826	PBI
		KAIL	322	164	120	98	34	14	4	3	2	761	
		RAI/FIR	1	0	0	0	0	0	0	0	0	1	
		BAN OAK	516	282	174	124	71	43	34	8	3	1255	
		OBL	44	22	15	13	4	0	0	0	0	98	
		TOTAL	1295	669	391	307	146	74	43	11	5	2941	
D 236 Pathrevi C2f	3.87	DEODAR	290	130	110	55	15	13	11	8	3	635	PBI
		KAIL	221	286	54	32	31	11	8	1	1	645	
		RAI/FIR	42	12	11	9	8	2	3	2	1	90	
		BAN OAK	412	151	96	37	38	11	8	2	2	757	
		OBL	142	102	53	21	5	0	0	0	0	323	
		TOTAL	1107	681	324	154	97	37	30	13	7	2450	
D 254 Sursan C2	47.1	DEODAR	360	273	92	50	35	20	2	3	3	838	PBI
		KAIL	775	629	315	334	288	415	338	162	22	3,278	
		CHIL	14	4	2	26	52	60	70	5	1	234	
		FIR / SPRUCE	0	0	0	2	1	0	1	0	0	4	
		BAN	435	407	217	70	0	0	0	0	0	1,129	
		OBL	687	757	291	117	32	0	0	0	0	1,884	
		WALNUT	0	0	0	0	8	3	1	0	1	14	
		TOTAL	1149	906	409	412	378	495	411	171	25	7,381	
D 254 Sursan C3	58.42	DEODAR	970	745	168	83	53	16	14	12	7	2,069	PBI
		KAIL	1342	994	390	427	447	428	389	228	112	4,757	
		CHIL	0	1	0	4	0	2	0	0	0	7	

Name & No. of forest Comp.	Area ha	Spp.	10to20 cm	20-30 cm	30-40 cm	40-50 cm	50-60 cm	60-70 cm	70-80 cm	80-90 cm	90-100 cm	Total	Allot.
		FIR / SPRUCE	0	0	0	0	0	0	0	0	0	0	
		BAN	644	642	130	27	5	0	0	0	2	1,350	
		OBL	1291	1151	201	86	15	23	0	0	0	2,787	
		TOTAL	2312	1740	558	614	500	446	403	240	119	10,949	
		DEODAR-KAIL WORKING CIRCLE											
		SERI RANGE PB I											
	Area	Spp.	10to20	20-30	30-40	40-50	50-60	60-70	70-80	80-90	90-100	Total	VOL.M3
	ha		cm	cm	cm	cm	cm	cm	cm	cm	cm		
	280.15	DEODAR	9032	7031	5852	6012	4910	4083	2767	1621	782	42090	77315.896
		KAIL	5439	3630	2296	2260	1776	1415	994	481	179	18470	25464.14
		CHIL	1433	372	81	76	67	68	70	5	1	2173	779.33
		FIR / SPRUCE	2019	1374	885	838	559	378	213	182	91	6539	9143.694
		RAKHAL	21	14	6	7	3	3	0	0	0	54	43.222
		BAN	8259	4935	1694	598	312	195	137	60	62	16252	6100.89
		KHANOR	60	49	44	31	15	10	3	4	2	218	130.386
		W.NUT	19	8	6	18	18	6	13	3	1	92	108.404
		OBL	4720	2784	737	300	64	28	1	0	0	8634	1813.836
		TOTAL	31002	20197	11601	10140	7724	6186	4198	2356	1118	94522	120899.8
		ENUMERATION RESULTS											
		DEODAR-KAIL WORKING CIRCLE											
		SERI RANGE PB II											
Name & No. of forest Comp.	Area ha	Spp.	10to20 cm	20-30 cm	30-40 cm	40-50 cm	50-60 cm	60-70 cm	70-80 cm	80-90 cm	90-100 cm	Total	Allot.
D 210 Singh Kufri C1	5.28	DEODAR	394	302	245	183	211	175	193	0	0	1703	PB II
		KAIL	115	152	123	101	84	103	133	2	0	813	
		BAN	376	83	3	2	1	1	1	0	0	467	
		TOTAL	885	537	371	286	296	279	327	2	0	2983	
D 213 Nihari nal C2	7.46	KAIL	355	24	161	82	73	4	0	0	0	918	PB II
		CHIL	665	336	173	124	62	5	4	1	0	1370	
		OBL	13	3	1	0	0	0	0	0	0	17	
		TOTAL	1033	582	335	206	135	9	4	1	0	2305	

Name & No. of forest	Area ha	Sp.	10to20 cm	20-30 cm	30-40 cm	40-50 cm	50-60 cm	60-70 cm	70-80 cm	80-90 cm	90-100 cm	Total	Allot.
Comp.													
D 213 Niharinal	7.08	KAIL	835	583	232	185	106	71	4	0	0	1926	PB II
C4a		CHIL	81	43	55	36	31	4	2	0	0	232	
		OBL	18	5	1	0	0	0	0	0	0	22	
		TOTAL	912	631	288	201	137	75	6	0	0	2250	
D 213 Niharinal	3.29	KAIL	695	603	445	332	203	115	15	0	0	2408	PB II
C4b		CHIL	53	41	23	11	7	5	2	0	0	142	
		OBL	15	4	1	1	0	0	0	0	0	21	
		TOTAL	763	648	469	344	210	120	17	0	0	2571	
D 213 Niharinal	4.48	KAIL	663	484	315	213	73	22	2	0	0	1772	PB II
C4c		CHIL	132	75	36	22	16	9	6	0	0	296	
		OBL	34	15	2	0	0	0	0	0	0	51	
		TOTAL	829	574	353	235	89	31	8	0	0	2119	
D 222 Pog C1	7.35	CHIL	287	64	164	197	105	22	1	0	0	840	PB II
		DEODAR	216	123	364	281	96	29	9	1	0	1119	
		KAIL	374	161	259	130	18	3	0	0	0	945	
		RAI/FIR	2	2	1	0	0	0	0	0	0	5	
		BAN OAK	2	0	0	0	0	0	0	0	0	2	
		OBL	4	0	0	0	0	0	0	0	0	4	
		TOTAL	885	350	788	608	219	54	10	1	0	2915	
D 225 Dhamoon	6.18	DEODAR	496	164	39	85	67	26	5	2	2	886	PB II
C1		KAIL	484	340	159	108	80	48	24	7	5	1235	
		BAN OAK	34	62	20	8	0	0	0	1	0	125	
		WALNUT	0	0	0	0	2	3	2	0	2	9	
		OBL	87	29	3	1	0	0	0	1	0	121	
		TOTAL	1081	595	221	202	149	77	31	11	9	2376	
D 225 Dhamoon	3.91	DEODAR	511	320	198	214	137	84	29	17	31	1541	PB II
C3a		KAIL	284	133	34	16	6	2	0	26	0	501	
		RAI/FIR	8	16	4	5	3	1	0	0	0	37	
		BAN	0	0	0	1	0	0	0	0	0	1	
		OBL	11	36	0	0	0	0	0	0	0	47	
		TOTAL	814	505	236	236	146	87	29	43	31	2127	
D 225 Dhamoon	9.49	DEODAR	569	159	143	88	147	96	82	26	18	1328	PB II
C3b		KAIL	387	118	143	140	182	98	37	12	5	1122	

Name & No.	Area	1 pp.	10-20	20-30	30-40	40-50	50-60	60-70	70-80	80-90	90-100	Total	Allot.
of forest	Ha		cm	cm	cm	cm	cm	cm	cm	cm	cm		
Comp.													
		RAINFIR	78	68	84	66	81	10	10	8	8	350	
		BAN	58	27	3	0	0	10	1	0	0	93	
		MALENT	0	0	0	1	1	1	1	0	0	4	
		OBL	213	100	25	12	2	1	1	0	0	354	
		TOTAL	1289	472	378	287	383	218	132	44	29	3260	
D 226 Khadra C1	3.47	DEODAR	358	141	357	272	98	53	14	0	0	1300	PB II
		KAIL	0	0	13	10	3	0	0	0	0	26	
		CHIL	0	0	1	0	0	0	0	0	0	1	
		BAN	4	3	1	0	0	0	0	0	0	8	
		OBL	2	1	0	0	0	0	0	0	0	3	
		TOTAL	365	145	372	282	98	53	14	0	0	1338	
D 226 Khadra C5	13.61	DEODAR	108	3	1	0	0	0	0	0	0	109	PB II
		KAIL	2470	143	17	17	13	18	4	4	1	2688	
		CHIL	143	7	18	22	7	3	1	0	0	201	
		BAN OAK	280	58	15	10	9	2	1	1	1	387	
		OBL	312	78	20	8	4	0	0	0	0	420	
		TOTAL	3320	287	71	57	33	24	6	5	2	3805	
D 229 Jachh C1	7.61	DEODAR	1344	147	103	106	144	82	54	27	1	2018	PB II
		KAIL	570	85	74	53	52	36	21	8	1	897	
		CHIL	3	2	2	1	2	2	1	0	0	13	
		RAINFIR	2	0	0	0	0	0	0	0	0	2	
		OBL	2	0	1	0	0	0	0	0	0	3	
		TOTAL	1921	234	180	160	196	129	76	33	2	2833	
D 229 Jachh C2	1.83	DEODAR	404	180	54	44	45	4	1	1	1	735	PB II
		KAIL	400	164	117	32	35	12	8	5	0	776	
		CHIL	42	12	13	3	1	1	0	0	0	72	
		BAN OAK	21	14	16	5	5	4	1	1	1	67	
		OBL	27	12	11	3	2	0	0	0	0	55	
		TOTAL	894	382	210	87	88	21	7	8	1	1609	
D 232 Surandha C3	2.1	CHIL	14	2	4	8	1	2	0	0	0	36	PB II
		KAIL	74	17	8	7	3	1	0	0	0	110	
		DEODAR	838	87	41	41	11	5	0	0	0	1018	
		BAN OAK	6	6	2	1	0	0	0	0	0	15	
		OBL	0	2	0	0	0	0	0	0	0	2	

Name & No. of forest Comp.	Area ha	Spp.	10to20 cm	20-30 cm	30-40 cm	40-50 cm	50-60 cm	60-70 cm	70-80 cm	80-90 cm	90-100 cm	Total	Allot.
		TOTAL	932	94	58	62	30	8	0	0	0	1184	
D 234 Sundaroo	9.89	DEODAR	227	50	38	98	87	40	25	14	7	566	PB II
C2		KAIL	360	98	218	208	106	34	13	5	6	1048	
		CHIL	201	3	12	5	4	3	1	1	1	231	
		RAI/FIR	21	13	28	24	8	5	2	1	0	102	
		BAN OAK	121	40	12	6	0	1	0	0	0	180	
		OBL	16	3	0	0	0	0	0	0	0	19	
		TOTAL	946	207	306	341	185	83	41	21	14	2144	
D 234 Sundaroo	2.62	DEODAR	433	36	50	81	43	19	2	1	0	659	PB II
C3a		KAIL	415	120	88	60	16	6	1	0	0	706	
		RAI/FIR	34	16	21	16	14	3	3	0	0	107	
		TOTAL	882	166	159	157	73	28	8	1	0	1472	
D 234 Sundaroo	3.04	DEODAR	452	28	48	100	20	11	3	1	0	663	PB II
C3b		KAIL	243	11	25	20	12	8	4	0	0	321	
		RAI/FIR	339	42	90	80	66	30	12	6	0	665	
		OBL	13	0	0	0	0	0	0	0	0	13	
		TOTAL	1047	81	163	200	98	47	19	7	0	1662	
D 234 Sundaroo	2.62	DEODAR	303	175	60	137	120	114	52	22	2	985	PB II
C3c		TOTAL	303	175	60	137	120	114	52	22	2	985	
D 236 Pathrevi C3a	6.88	DEODAR	182	62	42	24	16	2	2	1	0	331	PB II
		KAIL	170	70	124	122	76	13	10	1	0	588	
		CHIL	0	2	0	2	2	0	2	0	0	8	
		BAN OAK	635	543	312	129	76	12	11	18	15	1751	
		OBL	25	13	0	3	4	1	0	0	0	46	
		TOTAL	1012	692	478	280	174	28	25	20	15	2724	
D 236 Pathrevi C3b	70.06	DEODAR	444	140	26	6	0	0	0	0	0	616	PB II
		KAIL	5685	2169	534	340	249	172	110	42	12	9313	
		CHIL	20	6	0	2	3	2	1	1	0	35	
		RAI/FIR	28	6	2	1	0	1	0	0	0	38	
		BAN OAK	13571	1870	451	202	149	66	55	23	19	16406	
		OBL	5960	877	112	22	3	0	0	0	0	6974	
		TOTAL	25708	5068	1125	573	404	241	166	66	31	33382	
D 240 Bahal C3a	4.25	DEODAR	320	37	9	4	0	0	0	0	0	370	PB II
		KAIL	1380	246	33	74	26	4	0	0	0	1763	

[illegible]

ENUMERATION RESULTS													
DEODAR-KAIL WORKING CIRCLE													
SERI RANGE PB IV													
Name & No. of forest	Area ha	Spp.	10to20 cm	20-30 cm	30-40 cm	40-50 cm	50-60 cm	60-70 cm	70-80 cm	80-90 cm	90-100 cm	Total	Allot. VOL M3
Comp.													
D 227 Charog C1	39.23	DEODAR	10736	2042	643	294	121	24	8	4	2	13.774	PB IV 2373.14
		KAIL	8775	1394	332	222	212	96	43	18	3	11.093	2739.62
		CHIL	16	4	3	0	0	0	0	0	0	23	2.08
		FIR / SPRUCE	2580	842	155	42	19	7	1	2	0	3.648	770.85
		BAN	328	504	322	114	40	11	9	2	2	1.332	785.41
		OBL	274	130	19	8	0	0	0	0	1	432	64.501
		TOTAL	22107	4282	1033	558	352	127	52	22	5	30.302	6735.601
ENUMERATION RESULTS													
DEODAR-KAIL WORKING CIRCLE													
MAGROO RANGE PB I													
Name & No. of forest	Area ha	Spp.	10to20 cm	20-30 cm	30-40 cm	40-50 cm	50-60 cm	60-70 cm	70-80 cm	80-90 cm	90-100 cm	Total	Allot.
Comp.													
D 255 Shgach C3b	34.35	DEODAR	166	110	33	7	2	0	0	0	0	318	PB I
		KAIL	714	940	470	305	220	104	50	54	9	2.866	
		FIR / SPRUCE	293	290	268	183	126	93	40	27	31	1.351	
		BAN	419	453	236	120	63	17	19	2	1	1.330	
		OBL	525	690	288	78	2	1	8	0	0	1.592	
		KHANOR	23	25	23	10	1	10	0	0	2	94	
		TOTAL	2.140	2.508	1.318	703	414	225	117	83	43	7.551	
D 255 Shgach C3c	3.65	DEODAR	60	0	0	0	0	0	0	0	0	60	PB I
		KAIL	580	152	160	140	147	120	70	50	41	1.460	
		RAI/TOSH	220	130	70	160	110	150	92	50	30	1012	
		BAN OAK	51	20	0	0	0	0	0	0	0	71	
		KHANOR	30	0	10	0	0	0	0	10	0	50	
		OBL	340	130	10	0	0	0	0	0	0	480	
		TOTAL	1281	432	250	300	257	270	162	110	71	3133	
D 255 Shagach	3.04	KAIL	290	160	175	190	180	120	99	89	92	1396	PB I

Name & No. of forest	Area ha	Sp.	10to20 cm	20-30 cm	30-40 cm	40-50 cm	50-60 cm	60-70 cm	70-80 cm	80-90 cm	90-100 cm	Total	Allot.
Comp.													
C3d		RAI/TOSH	180	182	240	260	220	190	100	40	20	1432	
		BAN OAK	12	1	0	0	1	0	0	0	0	14	
		KHANOR	0	0	4	14	8	11	20	0	0	54	
		OBL	251	60	11	0	0	0	0	0	0	322	
		TOTAL	733	403	434	464	410	321	219	129	112	3221	
D 255 Shagach	11.31	DEODAR	63	24	11	4	0	0	0	0	0	102	PB I
C4		KAIL	660	222	173	171	173	162	122	101	23	1808	
		CHIL	125	44	4	3	0	0	0	0	0	176	
		BAN OAK	51	34	3	0	0	0	0	0	0	88	
		OBL	164	204	105	0	0	0	0	0	0	473	
		TOTAL	1063	528	296	179	173	162	122	101	23	2647	
D 255 Shagach	4.95	DEODAR	65	10	0	2	0	0	0	0	0	77	PB I
C5a		KAIL	1	0	1	0	0	0	0	0	0	2	
		CHIL	537	339	244	73	62	8	2	1	0	1266	
		TOTAL	603	341	245	75	62	8	2	1	0	1345	
D 255 Shagach	9.77	DEODAR	3	0	0	0	0	0	0	0	0	3	PB I
C5b		KAIL	176	141	85	3	0	0	0	0	0	413	
		CHIL	559	533	460	219	166	87	92	19	2	2137	
		TOTAL	738	682	545	222	166	87	92	19	2	2553	
D 255 Shagach	12.06	KAIL	426	431	261	190	167	189	67	30	1	1764	PB I
C5c		CHIL	345	282	248	35	40	4	1	2	0	957	
		BAN OAK	185	170	67	0	0	0	0	0	0	422	
		OBL	353	294	126	17	25	16	0	3	0	835	
		TOTAL	1309	1180	702	242	232	209	68	35	1	3978	
D 259 Lotia C1a	3.74	DEODAR	490	103	15	0	15	7	4	0	0	634	PB I
		KAIL	665	367	244	162	195	143	145	74	45	2040	
		RAI/TOSH	164	105	104	103	15	5	0	17	4	517	
		BAN OAK	525	384	325	121	118	125	0	0	0	1588	
		TOTAL	1844	959	688	386	343	280	149	91	49	4789	
D 259 Lotia C1b	26.02	DEODAR	2	4	1	1	0	0	0	0	0	8	PB I
		KAIL	621	201	380	319	226	152	61	10	9	1,989	
		FIR / SPRUCE	7	5	4	6	2	2	1	0	0	27	
		LIAN	1234	283	188	153	208	54	41	28	28	2,217	
		OBL	663	551	392	192	70	5	1	1	0	1,875	

Name & No. of forest Comp.	Area ha	Spp.	10to20 cm	20-30 cm	30-40 cm	40-50 cm	50-60 cm	60-70 cm	70-80 cm	80-90 cm	90-100 cm	Total	Allot.
		TOTAL	2,527	1,044	965	871	515	213	104	38	37	8,115	
D 259 Lotla C1c	7.4	DEODAR	107	3	11	0	0	0	0	0	0	121	PB I
		KAIL	1229	327	308	210	198	155	100	31	11	2827	
		BAN OAK	597	210	165	93	65	57	57	33	24	1291	
		JAMUN	0	0	0	1	1	0	0	0	0	2	
		OBL	523	315	248	85	14	8	0	0	0	1171	
		TOTAL	2456	855	790	369	268	218	157	64	35	5212	
D 259 Lotla C2a	52.64	DEODAR	1149	498	455	300	164	117	17	6	1	2,707	PB I
		KAIL	4980	1395	1004	785	742	363	270	52	21	9,592	
		CHIL	7	4	4	1	0	1	1	0	0	18	
		FIR / SPRUCE	1436	993	523	264	175	60	37	16	7	3,511	
		BAN	1716	825	454	169	140	85	111	55	41	3,596	
		TAXUS	9	111	14	4	2	1	0	0	0	141	
		KHANOR	11	4	3	6	2	0	1			27	
		OBL	2353	1156	917	289	105	22	4	0	0	4,846	
		TOTAL	11641	4960	3374	1010	1330	649	441	129	70	24438	
D 259 Lotla C2b	27.95	DEODAR	629	358	418	348	193	138	89	20	6	2,197	PB I
		KAIL	368	387	311	138	58	32	14	4	0	1,332	
		FIR / SPRUCE	242	188	156	35	14	0	0	0	0	835	
		BAN	178	9	3	0	0	0	0	0	0	190	
		OBL	75	4	1	3	0	0	0	0	0	83	
		TOTAL	1,512	946	889	522	265	170	103	24	6	4,437	
D 259 Lotla C4a	11.37	DEODAR	235	124	0	0	0	0	0	0	0	359	PB I
		KAIL	1670	806	609	387	366	317	253	174	42	4624	
		RAI/TOSH	115	9	23	31	13	10	4	0	0	205	
		BAN OAK	96	26	26	23	34	38	13	14	8	278	
		OBL	138	44	24	6	0	0	0	0	0	212	
		TOTAL	2254	1009	682	447	413	365	270	188	50	5678	
D 259 Lotla C4b	33.74	DEODAR	1816	700	763	601	491	258	147	69	7	4,852	PB I
		KAIL	1111	594	498	379	293	164	122	45	7	3,213	
		CHIL	600	291	224	115	78	65	48	21	0	1,442	
		FIR / SPRUCE	32	21	2	1	0	0	0	0	0	56	
		BAN	440	262	146	108	61	40	0	0	0	1,057	

Name & No. of forest Comp.	Area ha	Sp.	10-20 cm	20-30 cm	30-40 cm	40-50 cm	50-60 cm	60-70 cm	70-80 cm	80-90 cm	90-100 cm	Total	Allot
		GHANOR	13	4	4	12	2	15	2	11	10	73	
		TOTAL	4012	1872	1637	1218	925	542	319	146	24	10693	
D 267 Shagoradhar	9.98	DEODAR	735	552	463	370	394	290	172	140	126	3,242	PB I
C1		KAIL	485	548	427	293	327	248	217	208	123	2,854	
		FIR / SPRUCE	174	149	124	60	41	48	18	20	16	850	
		BAN	137	58	49	0	0	0	0	0	0	244	
		KHANOOR	5	3	7	3	11	2	5	0	4	40	
		OBL	1388	614	264	145	127	78	11	3	0	2,830	
		TOTAL	2904	1924	1334	871	900	666	423	369	269	9,660	
D 267 Shagoradhar	31.19	DEODAR	551	544	350	291	237	187	215	121	74	2,570	PB I
C2		KAIL	960	847	573	575	503	519	446	369	308	5,100	
		FIR / SPRUCE	564	576	365	276	226	144	93	65	44	2,353	
		BAN	273	269	150	84	67	32	1	0	0	876	
		KHANOOR	12	8	10	8	2	3	4	2	0	49	
		JAMUN	39	25	4	0	0	0	0	0	0	68	
		OBL	2282	1183	510	287	88	63	103	41	36	4,593	
		TOTAL	4,881	3,452	1,962	1,521	1,123	948	862	598	462	15,609	
D 268 Jonehar C1	8.74	DEODAR	312	204	114	104	104	150	166	82	86	1322	PB I
		KAIL	64	24	16	7	4	10	25	7	2	159	
		RAITOSH	82	14	2	1	0	12	3	2	12	128	
		OBL	1	0	0	0	0	0	0	0	0	1	
		TOTAL	459	242	132	112	108	172	184	91	100	1610	
D 268 Jonehar C2	10.97	DEODAR	473	337	213	195	269	272	253	119	122	2253	PB I
		KAIL	91	33	21	16	13	14	2	0	0	199	
		RAITOSH	191	63	22	11	4	2	0	0	1	302	
		TOTAL	755	433	256	219	293	285	269	121	123	2754	
D 270 Ruhmani C3	73.95	DEODAR	9704	9264	6441	3595	2451	1459	1123	702	565	35,304	PB I
		KAIL	3063	2570	1402	1005	681	251	148	94	101	9,316	
		CHIL	0	0	0	0	0	0	0	0	0	0	
		FIR / SPRUCE	718	581	235	94	30	30	23	12	5	1,728	
		MOHRU	58	23	23	17	12	0	0	0	0	133	
		OBL	50	58	56	69	37	24	0	0	0	294	
		JAMUN	58	49	31	0	0	0	0	0	0	138	

Name & No. of forest Comp.	Area ha	Spp.	10to20 cm	20-30 cm	30-40 cm	40-50 cm	50-60 cm	60-70 cm	70-80 cm	80-90 cm	90-100 cm	Total	Allot.
D 273 Lassi W	11.48	DEODAR	850	455	414	383	340	325	344	298	303	3712	PB I
		KAIL	215	238	197	180	148	184	150	150	124	1540	
		RAWTOSH	75	36	85	58	45	0	0	0	0	371	
		BAN DAR	203	145	25	0	74	65	15	0	0	627	
		OBL	480	324	155	0	0	0	0	0	0	959	
		TOTAL	1823	1195	856	613	639	599	509	448	427	7109	
D 292 Siri NarsinC1	44.15	DEODAR	1029	937	909	704	773	605	454	370	300	8091	PB I
		KAIL	941	847	619	469	446	380	330	209	198	4239	
		RALFIR	798	727	511	382	342	318	305	235	230	3848	
		BAN	324	307	118	108	27	20	5	4	6	919	
		TEXUS	7	8	0	0	0	0	0	0	0	15	
		KHANOR	12	10	11	13	10	2	22	5	36	121	
		OBL	1803	1704	1133	744	399	301	333	146	21	6584	
		TOTAL	4914	4340	3301	2420	1997	1626	1459	969	791	21817	
DEODAR-KAIL WORKING CIRCLE													
			MAGROO RANGE					PB	I				
	Area	Spp.	10to20	20-30	30-40	40-50	50-60	60-70	70-80	80-90	90-100	Total	VOL. M3
	ha		cm	cm	cm	cm	cm	cm	cm	cm	cm		
	496.18	DEODAR	3687	2197	1687	1392	1501	1359	1231	869	811	14734	93771.602
		KAIL	19290	11037	7996	5905	5093	3602	2704	1751	1157	58535	78629.55
		RALFIR	5291	4069	2714	1944	1370	1066	718	484	400	18056	26488.705
		BAN	6441	3456	1955	979	848	533	262	136	108	14718	9806.13
		CHIL	2173	1493	1184	446	346	165	144	43	2	5996	2697.43
		TEXUS	16	119	14	4	2	1	0	0	0	156	63.935
		MORU	58	23	23	17	12	0	0	0	0	133	96.5
		KHANOR	76	54	58	52	28	32	34	18	52	408	327.914
		JAMAN	97	74	35	1	0	0	0	0	1	201	44.444
		OBL	12086	7683	4486	2129	955	630	576	228	62	28835	12039.557
		TOTAL	49215	30205	20152	12869	10155	7388	5669	3529	2593	192971	223965.86

ENUMERATION RESULTS													
DEODAR-KAIL WORKING CIRCLE													
MAGROO RANGE													
Name & No. of forest	Area ha	Spp.	10-20 cm	20-30 cm	30-40 cm	40-50 cm	50-60 cm	PB 60-70 cm	I 70-80 cm	80-90 cm	90-100 cm	Total	Allot
Comp.													
D 255 Shagach	10.42	DEODAR	198	27	14	5	0	0	0	0	0	242	PB II
C2a		KAIL	382	190	215	98	68	70	50	33	20	1126	
		RAITOSH	16	1	2	3	4	1	1	0	1	29	
		CHIL	127	39	26	15	4	2	1	1	0	215	
		BAN OAK	100	45	15	8	0	0	0	0	0	168	
		KHANOR	4	2	14	11	1	3	10	12	2	59	
		OBL	377	177	69	4	2	14	2	0	1	648	
		TOTAL	1202	481	355	144	79	90	64	46	24	2485	
D 255 Shagach	4.06	DEODAR	403	155	143	47	24	8	4	0	0	784	PB II
C2b		KAIL	267	99	73	49	82	45	33	9	2	659	
		RAITOSH	11	10	7	2	3	5	0	1	1	40	
		CHIL	7	4	15	14	7	1	5	0	0	53	
		WALNUT	0	0	0	1	2	0	0	0	0	3	
		KHANOR	5	4	8	4	0	1	0	1	0	23	
		OBL	83	54	28	13	1	1	0	0	0	160	
		TOTAL	758	326	274	130	119	61	42	11	3	1722	
D 255 Shagach	7.28	DEODAR	2	1	0	0	0	0	0	0	0	3	PB II
C7		KAIL	543	227	133	175	182	158	179	75	13	1665	
		BAN OAK	199	53	21	6	3	0	0	0	0	282	
		OBL	221	117	149	62	40	19	0	0	0	608	
		TOTAL	965	398	303	243	205	177	179	75	13	2558	
D 258 Bagund C1	10.06	DEODAR	309	186	155	86	210	51	30	8	5	1040	PB II
		KAIL	257	219	92	109	127	157	139	83	13	1176	
		CHIL	3	0	3	1	15	8	14	2	0	46	
		RAITOSH	0	4	2	1	0	0	0	0	0	7	
		OBL	114	92	8	0	0	0	0	0	0	214	
		TOTAL	683	501	260	197	352	216	183	73	18	2483	
D 265 Khatoo C1	3.48	DEODAR	104	25	35	55	26	15	24	4	3	291	PB II
		KAIL	12	5	42	65	84	154	72	54	41	529	

Name & No. of forest Comp.	Area ha	Spp.	10-20 cm	20-30 cm	30-40 cm	40-50 cm	50-60 cm	60-70 cm	70-80 cm	80-90 cm	90-100 cm	Total	Allot.
		CHIL	0	0	0	1	0	1	13	3	3	21	
		OBL	1	0	0	0	0	0	0	0	0	1	
		TOTAL	117	30	77	121	110	170	109	61	47	842	
D 265 Khatoo C2	7.18	DEODAR	45	3	0	0	1	3	2	0	0	54	PB II
		KAIL	8	5	0	0	5	2	0	0	0	21	
		CHIL	1096	235	30	33	43	62	45	2	3	1549	
		TOTAL	1150	243	30	33	49	67	47	2	3	1624	
D 272 Lahair W	10.17	DEODAR	950	780	405	464	374	345	288	280	95	3961	PB II
		KAIL	614	470	330	325	284	375	290	245	156	3089	
		RAI/TOSH	270	188	164	115	114	76	68	0	0	975	
		JAMUN	35	0	0	15	0	0	0	0	0	50	
		TOTAL	1869	1418	899	919	772	796	646	505	251	8075	
D 274 Chhatri W	7.71	DEODAR	385	326	695	384	460	400	366	295	96	3407	PB II
		KAIL	55	0	0	0	5	0	0	0	0	60	
		OBL	7	1	0	0	0	0	0	0	0	8	
		TOTAL	447	327	695	384	465	400	366	295	96	3475	
D 281 Chhona C1	8.57	DEODAR	1175	616	475	480	353	480	425	400	64	4468	PB II
		KAIL	7	12	18	154	175	150	160	124	25	833	
		OBL	325	0	0	0	0	0	0	0	0	325	
		TOTAL	1507	628	493	634	528	630	585	524	89	5626	
D 285 Chaplandi W	7.73	DEODAR	25	65	70	65	194	163	125	130	70	914	PB II
		KAIL	65	84	125	153	243	204	125	35	5	1039	
		BAN OAK	123	95	34	5	3	0	0	0	0	260	
		TOTAL	213	244	229	223	440	367	250	170	75	2214	
D 287 Hall W	15.17	DEODAR	135	189	140	190	170	82	6	0	7	922	PB II
		KAIL	145	163	163	186	225	73	155	13	10	1136	
		BAN OAK	95	64	15	2	0	0	1	0	0	177	
		OBL	170	123	64	104	0	0	0	0	0	367	
		TOTAL	545	539	382	388	395	158	162	16	17	2602	
D 291 Phaidhar C2	4.75	DEODAR	200	225	215	217	175	31	69	3	3	1138	PB II
		KAIL	305	270	137	141	200	31	20	9	11	1124	
		RAI/FIR	375	321	215	37	31	32	4	1	2	1008	
		JAMUN	19	7	3	2	1	0	0	0	0	32	
		OBL	90	21	1	2	0	0	0	0	0	114	

Name & No. of forest Comp.	Area ha	Spp.	10to20 cm	20-30 cm	30-40 cm	40-50 cm	50-60 cm	60-70 cm	70-80 cm	80-90 cm	90-100 cm	Total	Allot.
		TOTAL	883	841	561	399	407	94	90	11	16	3416	
D 292 Sri Naram C2	6.45	DEODAR	35	22	25	27	16	3	4	1	3	135	PB II
		KAIL	185	133	170	125	95	37	3	1	1	754	
		RAI/FIR	408	302	240	340	145	37	25	0	0	1415	
		BAN OAK	3	2	1	0	0	0	0	0	0	6	
		OBL	170	133	119	57	2	3	2	1	4	471	
		TOTAL	798	610	551	423	252	80	34	9	16	2781	
DEODAR-KAIL WORKING CIRCLE													
MAGROO RANGE PB II													
	Area	Spp.	10to20	20-30	30-40	40-50	50-60	60-70	70-80	80-90	90-100	Total	VOL.M3
	ha		cm	cm	cm	cm	cm	cm	cm	cm	cm		
	105.05	DEODAR	3862	2504	2255	1895	1920	1648	1372	1207	441	17104	36346.72
		KAIL	2841	1881	1498	1580	1755	1459	1234	661	297	13211	27203.86
		CHIL	1231	278	74	64	69	74	78	8	6	1884	842.33
		RAI/FIR	1075	809	636	398	297	151	98	8	12	3484	3699.531
		BAN OAK	520	259	85	21	6	0	1	0	0	893	199.1
		JAMUN	54	7	3	17	1	0	0	0	0	82	27.026
		KHANOR	9	6	22	15	1	4	18	13	2	82	71.403
		W.NUT	0	0	0	1	2	0	0	0	0	3	4.418
		OBL	1538	718	438	128	45	37	4	1	5	2914	810.507
		TOTAL	11137	6462	5012	4119	4096	3373	2797	1898	762	39657	69204.895
ENUMERATION RESULTS													
DEODAR-KAIL WORKING CIRCLE													
MAGROO RANGE PB III													
Name & No. of forest Comp.	Area ha	Spp.	10to20 cm	20-30 cm	30-40 cm	40-50 cm	50-60 cm	60-70 cm	70-80 cm	80-90 cm	90-100 cm	Total	ALLOT.
D 269 Kaleru C2	7.81	DEODAR	143	108	120	113	165	145	85	55	80	1015	PB III
		KAIL	6	2	2	1	3	1	4	2	0	21	
		RAI/TOSH	1	1	0	0	0	0	0	0	0	2	
		JAMUN	9	8	4	0	0	0	0	0	0	21	
		OBL	1	0	2	0	0	0	0	0	0	3	

Name & No. of forest Comp.	Area ha	Spp.	10to20 cm	20-30 cm	30-40 cm	40-50 cm	50-60 cm	60-70 cm	70-80 cm	80-90 cm	90-100 cm	Total	ALLO.	
		TOTAL	160	119	128	114	168	146	89	58	80	1062		
D 270 Ruhmani C1	7.8	DEODAR	860	770	280	215	186	196	90	54	28	2358	PB III	
		KAIL	34	23	8	38	16	8	6	1	0	130		
		RAI/TOSH	33	8	1	1	0	0	0	0	0	44		
		OBL	3	1	2	0	0	0	0	0	0	6		
		TOTAL	930	503	271	252	202	202	96	55	28	2539		
D 270 Ruhmani C2	12.35	DEODAR	940	365	198	190	220	289	279	111	43	2635	PB III	
		KAIL	285	225	184	138	123	94	85	32	25	1191		
		RAI/TOSH	5	1	0	0	0	0	0	0	0	6		
		OBL	5	0	0	0	0	0	0	0	0	5		
		TOTAL	1235	591	382	328	343	383	364	143	68	3837		
D 275 Kathnalo W	13.78	DEODAR	655	444	300	335	300	266	305	245	154	3004	PB III	
		KAIL	766	555	340	285	280	260	254	233	82	3055		
		RAI/TOSH	455	310	154	105	186	175	194	168	125	1872		
		JAMUN	304	275	195	145	0	0	0	0	0	919		
		TOTAL	2180	1584	989	870	766	701	753	646	361	8850		
D 281 Chhonai C2	5.58	DEODAR	1214	675	458	306	385	404	315	166	124	4047	PB III	
		CHIL	74	0	0	0	0	0	0	0	0	74		
		TOTAL	1288	675	458	306	385	404	315	166	124	4121		
D 286 Latehar Shil W	0.81	DEODAR	10	0	0	10	14	32	33	25	27	151	PB III	
		KAIL	1	0	0	0	0	0	0	0	0	1		
		CHIL	1	2	5	38	38	34	16	3	0	137		
		TOTAL	12	2	5	48	52	66	49	28	27	289		
		DEODAR-KAIL WORKING CIRCLE												
		MAGROO RANGE							PB	III				
	Area	Spp.	10to20	20-30	30-40	40-50	50-60	60-70	70-80	80-90	90-100	Total		VOL.M3
	ha		cm	cm	cm	cm	cm	cm	cm	cm	cm			
	47.94	DEODAR	3822	2362	1336	1169	1270	1332	1107	657	456	13511		26230.09
		KAIL	1165	805	534	460	422	361	349	268	107	4471		8251.67
		CHIL	75	2	5	38	38	34	16	3	0	211		259.11
		RAI/TOSH	494	321	155	106	186	175	194	168	125	1924		5093.271
		JAMUN	313	283	199	145	0	0	0	0	0	940		353.491
		OBL	9	1	4	0	0	0	0	0	0	14		3.018
		TOTAL	5878	3774	2233	1818	1916	1902	1666	1096	688	21071		40190.65

ENUMERATION RESULTS													
DEODAR-KAIL WORKING CIRCLE													
MAGROO RANGE PB IV													
Name & No. of forest	Area ha	Spp.	10to20 cm	20-30 cm	30-40 cm	40-50 cm	50-60 cm	60-70 cm	70-80 cm	80-90 cm	90-100 cm	Total	ALL OT.
Comp.													
D 255 Shagach	26.67	DEODAR	1021	397	108	92	32	16	12	2	6	1.683	PB IV
C1a		KAIL	1744	1314	675	603	814	375	223	160	120	5.828	
		FIR / SPRUCE	599	634	508	558	344	152	115	72	137	3.120	
		BAN	837	735	448	244	113	55	42	16	20	2.510	
		KHANOOR	8	10	5	6	7	13	8	3	13	71	
		OBL	1168	857	455	142	114	16	3	1	0	2.756	
		TOTAL	5.377	3.947	2.197	1.706	1.224	628	401	254	296	16.028	
D 255 Shagach	24.28	DEODAR	1572	564	202	149	79	110	57	51	92	2.876	PB IV
C1b		KAIL	1380	868	670	418	290	208	151	111	155	4.247	
		CHIL	390	341	273	154	42	34	31	7	14	1.286	
		FIR / SPRUCE	65	44	20	17	12	0	1	1	0	160	
		BAN	285	200	188	78	33	5	7	0	0	794	
		OBL	625	512	375	194	35	43	34	5	5	1.828	
		TOTAL	3407	1817	1165	736	423	350	240	170	261	11.191	
D 255 Shagach	36.41	DEODAR	521	481	318	188	115	93	34	10	6	1.764	PB IV
C1c		KAIL	1188	789	788	570	324	260	147	77	64	4.207	
		FIR / SPRUCE	505	432	347	253	151	55	34	21	75	1.873	
		BAN	695	677	557	320	255	118	97	64	3	2.784	
		KHANOOR	1	10	8	11	9	10	2	3	3	57	
		OBL	903	469	345	106	80	35	12	2	2	1.953	
		TOTAL	3.813	2.858	2.363	1.445	934	569	326	177	153	12.638	
D 255 Shagach	20.51	DEODAR	955	699	322	130	87	45	22	8	5	2.273	PB IV
C3a		KAIL	2022	1426	763	269	213	100	57	29	41	4.920	
		FIR / SPRUCE	485	401	305	143	71	42	14	5	13	1.479	
		BAN	913	564	453	169	73	38	12	8	5	2.233	
		POPULAR	103	197	115	65	0	0	0	0	0	480	
		OBL	2321	1237	765	372	242	117	14	8	5	5.081	
		TOTAL	6.799	4.524	2.723	1.148	586	342	115	56	69	18.468	
D 259 Lotla C3a	32.78	DEODAR	1721	819	409	274	214	165	83	35	0	3.720	PB IV
		KAIL	1721	801	469	266	165	184	47	25	1	3.679	

Name & No. of forest Comp.	Area ha	Spp.	10-20 cm	20-30 cm	30-40 cm	40-50 cm	50-60 cm	60-70 cm	70-80 cm	80-90 cm	90-100 cm	Total	ALLOT.
		FIR / SPRUCE	1810	841	431	341	341	300	223	120	42	3,968	
		BAN	1270	728	503	374	290	239	168	108	51	3,731	
		RAKHAL	18	7	21	13	1	1	1	1	1	64	
		OBL	1380	581	399	180	51	107	48	12	4	2,745	
		TOTAL	7,604	3,585	2,238	1,453	1,064	998	570	300	99	17,907	
D 259 Lotla C3b	60.35	DEODAR	2505	800	184	102	107	28	2	10	0	3,748	PB IV
		KAIL	2706	1645	1070	966	683	576	497	218	63	8,424	
		CHIL	0	0	0	0	0	0	0	0	0	0	
		FIR / SPRUCE	2448	1019	757	488	418	361	276	136	99	6,002	
		BAN	2309	1333	859	605	397	368	279	153	121	6,424	
		OBL	3238	1836	1187	785	385	237	140	58	52	7,918	
		TAXUS	22	25	21	11	12	0	0	0	1	92	
		AKHNOOR	0	6	31	17	10	15	1	0	5	94	
		TOTAL	13237	6664	4119	2974	2012	1585	1195	575	341	32702	
D 259 Lotla C3c	56.88	DEODAR	5711	110	48	28	4	5	2	0	0	775	PB IV
		KAIL	1003	676	568	537	299	189	139	65	44	3,520	
		FIR / SPRUCE	2015	753	779	709	358	260	103	72	65	5,114	
		BAN	958	302	169	111	48	31	37	20	26	1,702	
		KHANOOR	4	0	10	14	20	18	19	16	12	113	
		WALNUT	2	0	1	0	1	2	1	3	0	10	
		OBL	465	145	47	19	6	3	1	1	1	688	
		TOTAL	5,025	1,986	1,622	1,418	736	508	302	177	148	11,922	
D 259 Lotla C6a	52.64	DEODAR	1707	375	56	41	25	9	7	2	0	2,222	PB IV
		KAIL	2074	533	520	410	317	269	137	47	31	4,338	
		CHIL	75	42	11	5	0	3	0	0	0	136	
		FIR / SPRUCE	45	10	4	0	1	0	0	1	0	61	
		BAN	393	189	143	55	34	35	27	25	35	936	
		KHANOOR	16	8	4	20	10	4	10	2	4	78	
		WALNUT	62	24	12	2	0	4	1	0	0	105	
		POPULAR	127	53	86	39	23	13	4	4	0	349	
		OBL	1841	865	172	102	44	11	1	0	0	3,036	
		TOTAL	6,340	2,099	1,008	674	454	348	187	81	70	11,261	
D 261 Garjooob C1	38.52	DEODAR	2466	1170	1003	523	310	177	96	60	43	6548	PB IV
		KAIL	3509	2083	824	320	150	144	29	23	17	7099	

Name & No. of forest Comp.	Area ha	Spp.	10-20 cm	20-30 cm	30-40 cm	40-50 cm	50-60 cm	60-70 cm	70-80 cm	80-90 cm	90-100 cm	Total	ALLOT.
		RAU/FIR	1151	673	519	360	317	162	92	63	39	3376	
		BAN OAK	3923	1243	434	420	412	253	163	106	129	7083	
		OBL	2168	849	440	154	34	8	4	1	5	3683	
		TOTAL	13217	6718	3220	1777	1223	744	384	263	233	27769	
D 262 Kathaundhar C1a	63.41	DEODAR	1816	360	87	41	24	13	9	2	0	2,152	PB IV
		KAIL	1860	280	84	51	51	28	7	0	0	2,381	
		FIR / SPRUCE	706	146	27	19	22	3	1	0	0	924	
		BAN	1770	924	359	188	55	37	17	1	1	3,352	
		OBL	802	315	102	1	2	2	0	0	0	1,224	
		AKHNOOR	16	8	14	7	6	0	0	0	0	51	
		TOTAL	6770	2033	673	307	160	83	34	3	1	10,064	
D 262 Kathaundhar C1b	34.9	DEODAR	311	95	62	46	40	31	15	7	9	616	PB IV
		KAIL	1120	371	153	93	108	124	75	53	23	2,120	
		CHIL	0	1	4	3	4	3	3	2	0	20	
		FIR / SPRUCE	23	13	4	8	2	3	1	0	0	54	
		BAN	448	286	246	91	106	78	33	21	42	1,351	
		OBL	278	246	148	33	23	5	3	1	1	738	
		TOTAL	2,180	1,012	617	274	283	244	130	84	75	4,899	
D 262 Kathaundhar C1c	31.31	DEODAR	7257	1107	371	275	151	125	113	92	117	9,608	PB IV
		KAIL	2317	406	105	74	38	44	24	23	7	3,038	
		CHIL	0	4	1	8	8	3	0	0	0	24	
		FIR / SPRUCE	171	38	4	2	2	1	0	0	0	218	
		BAN	1414	490	125	86	46	32	21	8	9	2,231	
		OBL	679	186	65	28	9	5	2	2	13	989	
		TOTAL	11,838	2,231	671	473	254	210	160	125	146	16,108	
D 262 Kathaundhar C1d	53.09	DEODAR	693	336	346	275	278	231	107	45	23	2,334	PB IV
		KAIL	2948	1182	630	288	202	158	86	61	15	5,570	
		CHIL	476	137	181	202	88	89	21	6	3	1,203	
		FIR / SPRUCE	2	1	2	1	2	0	0	0	0	8	
		BAN	935	237	98	80	71	52	29	28	17	1,547	
		OBL	1449	557	276	63	22	24	20	10	20	2,441	
		AKHNOOR	0	0	1	1	0	0	0	0	0	2	
		TOTAL	6,503	2,450	1,534	910	663	554	263	150	78	13,105	
D 262 Kathaundhar C2a	17.34	DEODAR	2333	1009	714	563	580	548	336	73	20	6,176	PB IV
		KAIL	94	78	192	251	148	71	35	12	2	883	

		CHIL	0	0	0	0	0	0	0	0	0	0	
		FIR / SPRUCE	124	15	7	0	1	0	0	0	0	147	
		BAN	30	1	1	0	0	0	0	0	0	32	
		OBL	31	54	22	1	0	3	0	0	0	111	
		TOTAL	2,812	1,157	930	815	729	822	371	85	22	7,349	
D 262 Kathaundhar	61.76	DEODAR	2943	1292	1857	1207	741	410	199	114	40	8,803	PB IV
C2b		KAIL	933	490	543	416	248	807	59	19	4	3,517	
		CHIL	2028	852	555	522	295	211	160	82	25	4,730	
		FIR / SPRUCE	8	2	0	0	0	0	0	0	0	10	
		BAN	1171	325	93	31	21	2	2	1	1	1,647	
		OBL	759	319	66	58	29	18	0	2	1	1,252	
		TOTAL	7,842	3,280	3,114	2,234	1,332	1,448	420	218	71	19,959	
D 262 Kathaundhar	80.38	DEODAR	17355	3678	1212	782	437	360	220	102	48	24,192	PB IV
C3a		KAIL	10531	1936	1062	592	453	577	435	197	67	15,850	
		CHIL	0	0	0	1	0	0	0	0	0	1	
		FIR / SPRUCE	2908	842	454	29	29	35	25	14	6	4,342	
		BAN	1440	533	181	50	17	4	2	0	0	2,227	
		RAKHAL	17	9	0	0	0	0	0	0	0	26	
		POPULAR	239	139	75	41	10	9	1	0	0	514	
		OBL	1693	934	319	78	14	5	3	0	0	3,046	
		TOTAL	34,183	8,071	3,303	1,573	960	990	686	313	119	50,188	
D 262 Kathaundhar	28.56	DEODAR	5180	698	434	283	292	282	190	143	153	7,635	PB IV
C3b		KAIL	1409	580	412	434	560	301	238	240	152	4,326	
		CHIL	162	52	24	12	15	21	0	0	0	281	
		FIR / SPRUCE	4	0	0	0	0	0	0	0	0	4	
		BAN	60	30	0	0	0	0	0	0	0	90	
		OBL	120	30	0	0	0	0	0	0	0	150	
		TOTAL	6,935	1,390	870	709	867	604	428	383	305	12,491	
D 262 Kathaundhar	27.92	DEODAR	4175	1080	361	77	127	141	161	93	70	6,285	PB IV
C3c		KAIL	2232	536	303	173	202	225	241	178	91	4,192	
		CHIL	5	0	1	2	3	0	1	0	0	13	
		FIR / SPRUCE	8	1	0	0	2	0	0	0	0	11	
		BAN	446	231	79	24	11	22	0	0	0	813	
		OBL	1202	458	217	78	8	1	5	0	0	1,969	
		TOTAL	8,068	2,308	961	354	358	393	418	271	161	13,283	
D 266 Lahari Shil	49.86	DEODAR	1849	1452	1011	705	431	336	304	201	159	6,449	PB IV

Name & No. of forest Comp.	Area ha	Spp.	10to20 cm	20-30 cm	30-40 cm	40-50 cm	50-60 cm	60-70 cm	70-80 cm	80-90 cm	90-100 cm	Total	ALLOT.
C1		KAIL	1286	1128	861	687	554	453	374	328	187	5,859	
		FIR / SPRUCE	2198	1136	567	374	236	151	101	66	45	4,872	
		BAN	369	97	34	9	0	0	0	0	0	509	
		KHANOOR	12	19	41	57	28	48	40	32	31	308	
		RAKHAL	2	3		0	0	0	0	0	0	5	
		OBL	1017	439	165	116	34	27	10	3	1	1,812	
		TOTAL	6731	4274	2679	1949	1283	1015	829	631	423	19,814	
D 266 Lahari Shil	19.62	DEODAR	750	544	405	306	204	188	165	125	83	2,770	PB IV
C2		KAIL	347	229	264	270	192	154	148	114	59	1,777	
		CHIL	3	0	0	0	1	0	0	0	0	4	
		RAJ/FIR	138	105	81	55	30	10	14	8	6	447	
		BAN	148	88	59	2	0	0	0	0	0	295	
		OBL	283	359	191	143	111	24	5	0	0	1,116	
		TOTAL	1238	878	750	631	427	352	327	247	148	6,409	
D 266 Lahari Shil	25.13	DEODAR	1133	560	350	196	194	194	188	119	87	3,021	PB IV
C3		KAIL	588	287	113	90	148	179	136	101	59	1,699	
		FIR/SPRUCE	7	5	4	0	2	1	0	0	0	19	
		BAN	26	6	0	0	0	0	0	0	0	32	
		OBL	415	183	56	21	7	11	0	0	0	693	
		TOTAL	2169	1041	523	307	349	385	324	220	146	5,464	
D 269 Kaleriu C1	56.97	DEODAR	11812	5366	3401	2067	1576	1344	968	743	743	28,020	PB IV
		KAIL	4812	1792	899	639	432	390	272	267	137	9,440	
		FIR / SPRUCE	4550	1729	867	352	242	250	211	126	109	8,436	
		BAN	1	3	10	0	10	4	10	30	0	68	
		JAMUN	278	132	37	67	48	36	53	38	22	711	
		KHANOOR	0	0	0	2	3	6	7	10	10	38	
		OBL	1291	642	445	146	128	43	10	4	0	2,709	
		TOTAL	22544	9664	5659	3273	2439	2073	1531	1218	1021	49,422	
D 291 Phaidhar	52	DEODAR	3108	1498	1021	727	589	506	388	249	280	8,346	PB IV
C1		KAIL	1085	761	530	319	238	144	91	38	14	3,220	
		RAJ/FIR	292	161	60	0	0	5	0	0	0	518	
		BAN	208	145	81	10	15	3	0	0	0	462	
		CHIL	424	314	163	127	100	107	83	75	33	1,426	

Name & No. of forest Comp.	Area ha	Spp.	10to20 cm	20-30 cm	30-40 cm	40-50 cm	50-60 cm	60-70 cm	70-80 cm	80-90 cm	90-100 cm	Total	ALLOT.
		KHANOR	4	16	6	9	4	5	12	6	3	65	
		OBL	2086	1038	592	245	331	110	81	17	11	4421	
		TOTAL	7207	3933	2453	1637	1127	880	656	385	244	18518	
DEODAR-KAIL WORKING CIRCLE													
			MAGROO RANGE				PB		IV				
	Area ha	Spp.	10to20 cm	20-30 cm	30-40 cm	40-50 cm	50-60 cm	60-70 cm	70-80 cm	80-90 cm	90-100 cm	Total	VOL.M3
	951.34	DEODAR	69605	24329	14148	9108	6709	5434	3736	2412	2131	137702	126102.7
		KAIL	48709	20191	12498	8794	6625	5962	3655	2387	1353	110174	113247.73
		CHIL	3563	1743	1213	1036	556	471	300	172	75	9129	6072.15
		RAI/FIR	19960	8809	5751	3715	2585	1791	1211	705	636	45163	47541.731
		BAN	20047	9367	5120	2945	2007	1374	946	587	460	42853	28077.18
		KHANOR	70	77	120	144	97	119	97	72	81	877	972.083
		TEXUS	60	44	42	24	13	1	1	0	2	187	159.194
		POPLAR	469	389	276	145	33	22	5	4	0	1343	549.833
		W.NUT	64	24	13	2	1	6	2	3	0	115	40.157
		JAMUN	278	132	37	67	48	36	53	38	22	711	460.544
		OBL	26197	13111	6849	3164	1579	855	396	127	121	52399	17579.934
		TOTAL	189022	78216	46067	29234	20253	16071	10402	6507	4881	400653	340803.24

ENUMERATION RESULTS													
CHIL WORKING CIRCLE													
PANGNA RANGE PB I													
Name & No.	Area	Spp.	10to20	20-30	30-40	40-50	50-60	60-70	70-80	80-90	90-100	Total	Allot.
of forest	ha		cm	cm	cm	cm	cm	cm	cm	cm	cm		
Comp.													
D 24 Bamog W	26.14	DEODAR	616	442	441	444	270	116	33	4	5	2,376	PB I
		KAIL	742	477	509	372	182	76	24	7	6	2,395	
		CHIL	2856	1893	1748	1564	840	347	100	16	6	9,370	
		BAN	18	31	2	3	0	0	0	0	0	26	
		OBL	18	9	3	0	0	0	0	0	0	30	
		TOTAL	4,250	2,824	2,703	2,383	1,292	539	157	32	17	14,197	
D 27 Mahasu C5b	4.85	DEODAR	193	108	50	20	1	1	0	0	1	374	PB I
		KAIL	240	73	11	3	0	0	0	0	0	327	
		CHIL	898	314	147	76	33	11	0	0	0	1,479	
		TOTAL	1331	495	208	99	34	12	0	0	1	2,180	
D 27 Mahasu C5c	1.9	DEODAR	200	50	30	10	0	1	0	0	0	291	PB I
		KAIL	392	112	42	11	0	0	0	0	0	557	
		CHIL	312	122	92	42	33	15	0	0	0	616	
		TOTAL	904	284	164	63	33	16	0	0	0	1,464	
D 43 Kaneri C1	61.6	DEODAR	100	20	7	11	9	3	1	1	0	152	PB I
		KAIL	957	447	73	16	14	9	2	1	0	1,519	
		CHIL	18495	3413	362	354	332	103	15	4	0	23,078	
		BAN	355	73	26	19	9	2	2	0	0	486	
		OBL	163	127	30	7	1	0	0	0	0	328	
		TOTAL	20,070	4,080	498	407	365	117	20	6	0	25,563	
D 43 Kanan C2	81.22	DEODAR	1145	230	519	448	165	42	11	2	3	2,565	PB I
		KAIL	4214	1474	355	231	123	44	14	5	0	6,460	
		CHIL	11712	3394	1973	1463	855	232	47	4	0	19,680	
		FIR / SPRUCE	1	1	1	2	1	1	0	0	0	7	
		BAN	214	114	32	11	4	1	0	0	0	376	
		OBL	122	89	38	4	2	0	0	0	0	255	
		TOTAL	17,409	5,302	2,918	2,159	1,150	320	72	11	3	29,343	
D 55 Jandl W	11.83	CHIL	255	365	840	640	198	70	0	0	0	2368	PB I
		TOTAL	255	365	840	640	198	70	0	0	0	2368	

Name & No. of forest	Area ha	Spp.	10to20 cm	20-30 cm	30-40 cm	40-50 cm	50-60 cm	60-70 cm	70-80 cm	80-90 cm	90-100 cm	Total	Allot.
Comp.													
D 58 Dharmour C2	29.96	DEODAR	36	11	2	0	0	0	0	0	0	49	PB I
		KAIL	3720	773	100	41	58	23	12	12	1	4,740	
		CHIL	8811	210	1684	95	56	17	12	5	1	10,701	
		BAN	10	4	7	5	2	0	0	0	0	28	
		OBL	23	38	13	1	0	0	0	0	0	75	
		TOTAL	12,400	1,036	1,806	142	126	40	24	17	2	15,593	
D 58 Dharmour C3	46.77	DEODAR	1959	985	120	37	15	7	5	3	2	3,133	PB I
		KAIL	3829	1737	437	100	57	15	23	15	3	6,216	
		CHIL	11418	2116	242	149	113	38	33	11	3	14,123	
		BAN	789	524	235	147	23	8	2	0	0	1,728	
		OBL	489	377	125	37	1	0	0	0	0	1,029	
		TOTAL	18,484	5,739	1,159	470	209	68	63	29	8	26,229	
D 61 Sorsan C1	9.13	CHIL	803	365	267	232	191	84	14	1	0	1957	PB I
		DEODAR	220	150	104	76	64	57	33	10	0	714	
		KAIL	62	30	35	20	10	5	1	0	0	163	
		BAN OAK	104	34	20	8	4	0	0	0	0	170	
		OBL	11	24	18	3	6	4	4	0	0	70	
		TOTAL	1200	603	444	339	275	150	52	11	0	3074	
D 61 Sorsan C3	10.23	CHIL	1439	478	305	144	103	60	0	0	0	2529	PB I
		KAIL	70	20	10	0	1	0	0	0	0	101	
		OBL	0	0	0	1	1	0	0	0	0	2	
		TOTAL	1509	498	315	145	105	60	0	0	0	2632	
D 62 Kuns C1	24.65	DEODAR	850	575	345	185	110	40	17	14	8	2,144	PB I
		KAIL	12	10	5	4	0	0	0	0	0	31	
		CHIL	2463	1350	1041	801	544	362	163	89	9	6,822	
		BAN	259	180	123	59	5	0	2	0	0	628	
		OBL	54	34	33	17	4	5	0	0	0	147	
		TOTAL	3,638	2,149	1,547	1,066	663	407	182	103	17	9,772	
D 62 Kuns C2	17.08	CHIL	1663	1112	828	396	393	290	214	171	120	5,187	PB I
		OBL	2	4	1	2	0	0	0	0	0	9	
		TOTAL	1,665	1,116	829	398	393	290	214	171	120	5,196	
D 62 Kuns C3	32.89	DEODAR	3	0	0	0	0	0	0	0	0	3	PB I
		CHIL	3820	7151	13124	6269	3060	1050	292	60	15	34,841	
		BAN	10	4	0	0	0	0	0	0	0	14	

Ilamo & No. of forest Comp.	Area ha	Spp.	10-20 cm	20-30 cm	30-40 cm	40-60 cm	60-80 cm	80-100 cm	100-120 cm	120-140 cm	140-160 cm	Total	Alot
		OBL	223	67	8	0	0	0	0	0	0	298	
		TOTAL	4,058	7,222	13,132	8,269	3,060	1,050	292	60	15	35,156	
D 63 Panianu W	99.81	DEODAR	1383	516	306	256	144	57	31	24	6	2,723	PB I
		KAIL	142	52	20	4	2	1	0	0	0	221	
		CHIL	11811	4636	8343	6153	3517	1707	751	218	77	37,213	
		BAN	507	153	36	7	0	0	0	0	0	703	
		OBL	3392	1191	304	90	37	15	3	0	0	5,032	
		TOTAL	17,235	6,548	9,009	6,500	3,700	1,780	785	242	83	45,892	
D 72 Reshtadhar	15.7	DEODAR	1	0	0	0	0	0	0	0	0	1	PB I
C1b		KAIL	30	30	7	0	0	0	0	0	0	67	
		CHIL	1256	511	223	216	250	95	20	21	33	2,625	
		BAN	2157	764	298	123	82	26	22	14	26	3,512	
		OBL	1492	281	34	6	1	0	0	0	1	1,815	
		TOTAL	4,936	1,586	562	345	333	121	42	35	60	8,020	
D 72 Reshtadhar	11.72	DEODAR	2	0	0	0	0	0	0	0	0	2	PB I
C1c		KAIL	3	0	0	0	0	0	0	0	0	3	
		CHIL	3867	1440	451	331	274	93	20	16	3	6,555	
		BAN	961	306	186	104	37	30	12	1	2	1,639	
		OBL	1109	314	67	4	0	0	0	0	0	1,494	
		TOTAL	5,942	2,060	704	469	311	123	32	17	5	9,693	
D 84 Alias C1	70.55	CHIL	9754	4825	1734	478	384	163	28	3	0	17369	PB I
		DEODAR	97	20	0	0	0	0	0	0	0	117	
		BAN OAK	2556	812	363	443	243	110	29	5	4	4565	
		OBL	1801	437	43	2	0	0	0	0	0	2283	
		TOTAL	14208	6094	2140	923	627	273	57	11	4	24334	
D 102 Talehan C2a	56.13	CHIL	1989	1256	873	484	207	89	48	12	10	4,968	PB I
		OBL	916	230	72	50	5	0	0	0	0	1,273	
		TOTAL	2,905	1,486	945	534	212	89	48	12	10	6,241	
D 102LalehanC3	19.81	CHIL	1263	741	462	223	130	50	22	8	3	2902	PB I
		BAMBOO	102	0	0	0	0	0	0	0	0	102	
		KHAIR	52	0	0	0	0	0	0	0	0	52	
		SHISHAM	43	0	0	0	0	0	0	0	0	43	
		OBL	2310	792	181	71	12	0	0	0	0	3366	
		TOTAL	3770	1533	643	294	142	50	22	11	3	6465	

Name & No. of forest	Area ha	Spp.	10to20 cm	20-30 cm	30-40 cm	40-50 cm	50-60 cm	60-70 cm	70-80 cm	80-90 cm	90-100 cm	Total	Allot.
D 110 Ghaula C4	59.02	CHIL	823	455	217	54	21	12	5	0	0	1,387	PBI
		BAN	11	1	0	0	0	0	0	0	0	12	
		OBL	157	76	7	2	0	0	0	0	0	242	
		TOTAL	791	532	224	58	21	12	5	0	0	1,841	
D 110 Ghaula C8	4.86	CHIL	374	213	142	66	53	51	0	0	0	899	PBI
		BAN OAK	305	0	0	0	0	0	103	0	0	408	
		TOTAL	679	213	142	66	53	51	103	0	0	1307	
					CHIL WORKING CIRCLE								
					PANGNA RANGE			PB	I				
	Area	Spp.	10to20	20-30	30-40	40-50	50-60	60-70	70-80	80-90	90-100	Total	VOL M3
	ha		cm	cm	cm	cm	cm	cm	cm	cm	cm		
	695.88	CHIL	95682	36360	35098	20290	11597	4939	1784	639	180	206689	75872.65
		DEODAR	6805	3107	1924	1487	778	324	131	63	25	14644	9455.848
		KAIL	14413	5235	1604	802	447	173	76	40	10	22800	6759.19
		FIR / SPRUCE	1	1	1	2	1	1	0	0	7	14	11.397
		BAN	8256	2972	1328	929	409	177	172	20	32	14295	5877.91
		SHISHAM	43	0	0	0	0	0	0	0	0	43	2.752
		KHAIR	52	0	0	0	0	0	0	0	0	52	3.172
		OBL	12282	4090	977	297	70	24	7	0	1	17748	2712.036
		TOTAL	137534	51765	40932	23807	13302	5638	2170	762	255	216265	100694.96
					ENUMERATION RESULTS								
					CHIL WORKING CIRCLE								
					PANGNA RANGE			PB	II				
Name & No. of forest	Area ha	Spp.	10to20 cm	20-30 cm	30-40 cm	40-50 cm	50-60 cm	60-70 cm	70-80 cm	80-90 cm	90-100 cm	Total	Allot.
Com/sub-com													
D 19 Shalog C3	5.19	DEODAR	168	43	51	55	48	43	0	0	0	406	PB II
		CHIL	335	131	188	206	234	193	12	0	0	1290	
		TOTAL	501	174	239	261	282	236	12	0	0	1706	
D 19 Shalog C5	5.56	DEODAR	172	53	25	10	6	3	1	0	0	270	PB II
		KAIL	11	0	3	0	0	0	0	0	0	14	
		CHIL	1711	388	60	27	23	27	16	0	0	2,250	

Name & No. of forest Com/sub-com	Area ha	Spp.	10to20 cm	20-30 cm	30-40 cm	40-50 cm	50-60 cm	60-70 cm	70-80 cm	80-90 cm	90-100 cm	Total	Allot.
		TOTAL	1894	439	88	37	29	30	17	0	0	2,534	
D 27 Mahasu C5a	8.4	DEODAR	150	86	82	43	60	11	10	0	0	442	PB II
		KAIL	189	110	90	43	44	24	10	0	0	510	
		CHIL	400	220	120	112	115	43	21	0	0	1,031	
		TOTAL	739	416	292	198	219	78	41	0	0	1,983	
D 29 Begli Sukel C2	17.15	DEODAR	36	23	5	3	2	1	0	1	0	71	PB II
		KAIL	165	62	54	43	35	33	24	0	5	430	
		CHIL	383	312	386	336	122	73	72	48	33	1765	
		TOTAL	584	397	445	382	160	107	96	57	38	2266	
D 31 Dahi W	1.77	DEODAR	64	23	32	14	5	4	6	5	2	155	PB II
		KAIL	93	33	22	16	4	2	1	2	0	173	
		CHIL	25	13	5	4	3	2	3	1	0	56	
		BAN OAK	12	3	0	0	0	0	0	0	0	15	
		TOTAL	194	72	59	34	12	8	10	8	2	399	
D 35 Sanjog C2	4.24	CHIL	750	796	326	252	62	42	12	5	0	2245	PB II
		KAIL	15	4	0	0	0	0	0	0	0	19	
		BAN OAK	42	4	11	0	0	0	0	0	0	57	
		TOTAL	807	804	337	252	62	42	12	5	0	2321	
D 38 Bakaran C1	8.39	CHIL	145	173	63	52	42	34	13	4	2	528	PB II
		KAIL	242	204	152	143	66	62	33	11	5	920	
		DEODAR	66	44	33	22	2	0	0	0	0	167	
		BAN OAK	53	44	22	1	0	5	2	1	0	136	
		OBL	71	43	3	1	0	0	0	0	0	118	
		TOTAL	577	508	273	219	118	101	48	18	7	1869	
D 39 Shill C2	6.88	CHIL	286	167	133	74	43	34	17	6	5	765	PB II
		KAIL	158	111	59	44	33	16	12	8	3	444	
		BAN OAK	4	3	5	0	0	0	0	0	0	12	
		TOTAL	448	281	197	118	76	50	29	14	8	1221	
II 40 Bajhu C1	13.56	CHIL	166	174	103	64	17	2	0	0	0	526	PB II
		DEODAR	0	0	0	1	0	0	0	0	0	1	
		TOTAL	166	174	103	65	17	2	0	0	0	527	
D 46 Frash W	13.67	CHIL	590	294	217	126	74	43	14	0	0	1358	PB II
		DEODAR	415	164	129	47	11	0	0	0	0	766	
		KAIL	707	324	215	90	65	7	0	0	0	1408	

Name & No. of forest Com/sub-com	Area ha	Spp.	10to20 cm	20-30 cm	30-40 cm	40-50 cm	50-60 cm	60-70 cm	70-80 cm	80-90 cm	90-100 cm	Total	Allot.
		BAN OAK	156	64	43	76	0	0	0	0	0	339	
		TOTAL	1868	848	604	239	150	50	14	0	0	3871	
D 47 Chhaj W	7.53	CHIL	4810	1358	228	110	29	9	10	10	0	6558	PB II
		TOTAL	4810	1358	228	110	29	9	10	10	0	6558	
D 54 Sarai W	7.2	CHIL	1200	800	126	86	44	22	0	0	0	2008	PB II
		KAIL	5	1	0	0	0	0	0	0	0	6	
		DEODAR	23	9	0	0	0	0	0	0	0	32	
		TOTAL	1228	810	126	86	44	22	0	0	0	2046	
D 56 Karadal C1	10.71	CHIL	2116	755	448	304	143	86	1	0	0	3853	PB II
		DEODAR	53	13	0	0	0	0	0	0	0	66	
		KAIL	1	1	0	0	0	0	0	0	0	2	
		TOTAL	2170	769	448	304	143	86	1	0	0	3921	
D 61 Sorsan C2	7.82	CHIL	724	303	225	167	103	87	30	0	0	1639	PB II
		DEODAR	217	105	64	5	0	2	0	0	0	393	
		KAIL	314	110	20	10	0	0	0	0	0	454	
		BAN OAK	21	43	20	12	0	2	0	0	0	98	
		OBL	20	5	12	9	3	1	0	0	0	50	
		TOTAL	1295	566	341	203	106	92	30	0	0	2634	
D 67 Thuadhar C1	5	CHIL	907	358	105	52	37	20	7	0	0	1484	PB II
		TOTAL	907	358	105	52	37	20	7	0	0	1484	
D 69 Shil Badyar-II W	1.37	CHIL	10	84	123	96	82	11	0	0	0	406	PB II
		DEODAR	0	0	2	0	0	1	0	0	0	3	
		KAIL	1	8	8	4	0	0	0	0	0	21	
		BAN OAK	10	12	14	1	0	0	0	0	0	37	
		TOTAL	21	104	147	101	82	12	0	0	0	467	
D 70 Shil Badyar-I W	7.78	CHIL	21	203	356	313	325	214	5	1	0	1438	PB II
		DEODAR	2	2	0	0	0	0	0	0	0	4	
		BAN OAK	109	80	52	11	4	9	0	0	0	265	
		OBL	20	39	22	12	4	0	0	0	0	107	
		TOTAL	152	324	440	336	333	223	5	1	0	1814	
D 71 Shil Badyar C1a	4.01	CHIL	135	144	149	122	53	30	3	1	0	637	PB II
		BAN OAK	307	112	20	0	0	0	0	0	0	439	
		OBL	7	11	8	13	1	0	0	0	0	49	
		TOTAL	449	267	177	135	54	30	3	1	0	1116	

Name & No. of forest	Area ha	Spp.	10-20 cm	20-30 cm	30-40 cm	40-50 cm	50-60 cm	60-70 cm	70-80 cm	80-90 cm	90-100 cm	Total	Allel
Com/sub-com													
D 71 Shri Badyar C1b	7	CHIL	58	118	350	160	40	13	5	5	7	757	PB II
		DEODAR	8	9	0	1	0	0	0	0	0	17	
		KAIL	134	30	0	0	0	0	0	0	0	164	
		BAN OAK	1027	890	507	180	53	32	22	6	0	2711	
		OBL	160	0	0	0	0	0	0	0	0	160	
		TOTAL	1385	1047	857	340	93	45	30	5	7	3805	
D 72 Reshtadhar C1a	3.1	CHIL	83	65	100	67	59	18	10	3	2	407	PB II
		DEODAR	5	1	1	0	0	0	0	0	0	7	
		BAN OAK	225	169	186	107	63	34	0	0	0	784	
		OBL	21	10	4	1	0	0	0	0	0	36	
		TOTAL	334	245	291	175	122	52	10	3	2	1234	
D 72 Reshtadhar C2b	6.51	CHIL	155	104	49	38	11	23	0	0	0	380	PB II
		BAN OAK	1097	838	624	416	225	168	129	71	53	3521	
		OBL	14	21	23	11	3	2	1	0	0	75	
		TOTAL	1266	963	696	465	239	193	130	71	53	4076	
D 78 Kandha C1	16	CHIL	3047	865	813	459	327	162	204	85	14	5727	PB II
		DEODAR	30	10	10	0	0	0	1	1	0	52	
		TOTAL	3077	875	823	459	327	162	205	87	14	5779	
D 85 Trour C1	9.14	CHIL	1445	493	568	519	129	22	0	0	0	3175	PB II
		TOTAL	1445	493	568	519	129	22	0	0	0	3178	
D 102 Talehan C1a	3.01	CHIL	307	262	170	53	103	92	83	13	0	1083	PB II
		OBL	162	0	0	0	0	0	0	0	0	162	
		TOTAL	469	262	170	53	103	92	83	13	0	1245	
D 102 Talehan C1b	7.97	CHIL	152	243	312	164	134	183	92	0	0	1260	PB II
		OBL	207	0	0	0	0	0	0	0	0	207	
		TOTAL	359	243	312	164	134	183	92	0	0	1467	
D 110 Ghaula C1	7.43	CHIL	1402	665	222	173	152	21	11	12	0	2658	PB II
		KAIL	2	0	0	0	0	0	0	0	0	2	
		TOTAL	1404	665	222	173	152	21	11	12	0	2660	
D 110 Ghaula C2	3.2	CHIL	1395	603	201	112	93	66	3	0	0	2473	PB II
		BAN OAK	372	0	0	0	0	0	3	0	0	375	
		TOTAL	1767	603	201	112	93	66	6	0	0	2848	

CHIL WORKING CIRCLE													
PANGNA RANGE PB II													
Area	Spp.	10to20	20-30	30-40	40-50	50-60	60-70	70-80	80-90	90-100	Total		VOL M3
ha		cm	cm	cm	cm	cm	cm	cm	cm	cm			
200.05	DEODAR	1407	585	434	200	134	65	18	7	2	2652		1607.704
	KAIL	2037	998	823	393	248	144	80	31	13	4567		3157.62
	CHIL	22656	9798	6058	4198	2599	1572	647	195	83	47685		18963.1
	BAN OAK	3435	2282	1504	804	353	250	156	72	53	8889		5893.04
	OBL	682	129	82	47	11	3	1	0	0	955		196.051
	TOTAL	30117	13773	8699	5642	3345	2034	902	305	131	64948		29817.515
ENUMERATION RESULTS													
CHIL WORKING CIRCLE													
PANGNA RANGE PB III													
Name & No.	Area	Spp.	10to20	20-30	30-40	40-50	50-60	60-70	70-80	80-90	90-100	Total	Allot.
of forest	ha		cm	cm	cm	cm	cm	cm	cm	cm	cm		
Com/sub-com													
D 14 Sadas W	4.28	CHIL	1040	490	200	20	34	10	0	0	0	1794	PB III
		DEODAR	1	0	0	0	0	0	0	0	0	1	
		KAIL	8	0	0	0	0	0	0	0	0	8	
		BAN	8	0	0	0	0	0	0	0	0	8	
		TOTAL	1057	490	200	20	34	10	0	0	0	1811	
D 33 Khaneag W	6.4	CHIL	879	534	153	82	12	11	3	0	0	1674	PB III
		TOTAL	879	534	153	82	12	11	3	0	0	1674	
D 34 Tikkan W	11.56	CHIL	484	656	773	738	14	2	0	1	2	2670	PB III
		KAIL	9	5	0	0	0	0	0	0	0	14	
		TOTAL	493	661	773	738	14	2	0	1	2	2684	
D 72 Reshtadhar C1d	2.64	CHIL	959	555	158	114	0	12	0	0	0	1798	PB III
		TOTAL	959	555	158	114	0	12	0	0	0	1798	
D 72 Reshtadhar C1e	2.49	CHIL	1154	635	216	129	90	21	0	0	0	2245	PB III
		BAN OAK	10	6	1	2	1	2	0	0	0	22	
		OBL	2	1	1	0	0	0	0	0	0	4	
		TOTAL	1166	642	218	131	91	23	0	0	0	2271	
D 72 Reshtadhar C1f	5.57	CHIL	54	65	81	39	20	17	5	2	0	283	PB III
		BAN OAK	1733	1136	515	307	156	112	81	31	110	4181	
		OBL	44	65	73	40	20	10	2	0	0	254	

Name & No. of forest	Area ha	Sp.	10-20 cm	20-30 cm	30-40 cm	40-50 cm	50-60 cm	60-70 cm	70-80 cm	80-90 cm	90-100 cm	Total		
Com/sub-com														
		CHIL	38153	8234	1184	210	128	41	16	8	8	47,980		
		OBL	7	5	0	0	0	0	0	0	0	12		
		TOTAL	38,160	8,239	1,184	210	128	41	16	8	8	48,000		
D 15 Rakri C2a	37.04	DEODAR	544	34	12	8	8	12	4	3	0	625	PB IV	
		KAIL	290	29	1	1	0	2	0	0	0	328		
		CHIL	18866	903	109	170	185	130	38	9	6	20,416		
		BAN	1	0	1	1	3	5	3	0	0	16		
		OBL	8	0	1	1	0	0	0	0	0	9		
		TOTAL	19,711	966	125	182	196	149	45	12	6	21,392		
D 15 Rakri C2b	37.55	DEODAR	221	45	5	1	1	1	0	0	0	274	PB IV	
		KAIL	1066	230	47	20	10	8	4	2	0	1,387		
		CHIL	20410	1479	47	48	57	37	11	5	0	22,094		
		BAN	305	63	25	4	2	0	0	0	0	399		
		OBL	148	48	8	2	0	0	0	0	0	207		
		TOTAL	22,150	1,865	133	75	70	46	15	1	0	24,351		
D 17 Chhatni Suket W	29.05	DEODAR	1	1	1	1	0	0	0	0	0	4	PB IV	
		KAIL	165	12	14	5	1	1	0	0	0	198		
		CHIL	18738	4097	947	228	21	1	0	0	0	24,033		
		OBL	1	0	0	0	0	0	0	0	0	1		
		TOTAL	18,905	4,110	962	235	22	2	0	0	0	24,236		
D 19 Shalog Co	49.78	DEODAR	963	136	68	70	36	17	5	1	0	1,298	PB IV	
		KAIL	488	70	21	13	8	1	1	0	0	603		
		CHIL	23772	1854	411	56	71	77	20	4	3	25,905		
		BAN	22	12	1	1	0	0	0	0	0	36		
		TOTAL	25,245	2,072	131	140	115	97	26	7	3	27,842		
D 21 Bonas Nal W	9.4	DEODAR	206	24	14	6	1	0	0	0	0	251	PB IV	
		KAIL	43	5	0	1	0	0	1	0	0	50		
		CHIL	10521	366	230	131	24	11	1	2	0	11,398		
		TOTAL	10,870	395	255	138	25	12	2	2	0	11,699		
D 35 Sanod C1	35.42	KAIL	14	2	1	0	0	0	0	0	0	16	PB IV	
		CHIL	14014	2722	751	326	127	88	43	27	0	18,091		
		BAN	18	11	5	2	1	0	1	0	0	40		
		OBL	2	1	0	0	0	0	0	0	0	3		
		TOTAL	14,044	2,738	757	329	128	89	44	27	0	18,155		

Name & No. of forest	Area ha	Spp.	10to20 cm	20-30 cm	30-40 cm	40-50 cm	50-60 cm	60-70 cm	70-80 cm	80-90 cm	90-100 cm	Total		
Com/sub-com														
D 36 Kandhi W	24.11	DEODAR	35	15	5	4	6	4	2	0	0	71	PB IV	
		KAIL	162	15	4	2	0	0	0	0	0	183		
		CHIL	9174	3514	822	357	242	51	16	0	0	14,176		
		BAN	8	13	8	1	0	0	0	0	0	30		
		OBL	0	1	0	0	1	0	0	0	0	2		
		TOTAL	9,379	3,558	839	364	249	55	18	0	0	14,462		
D 37 Bhanesh W	36.98	DEODAR	81	21	7	5	2	1	1	0	0	118	PB IV	
		KAIL	3798	1514	786	492	435	260	74	29	4	7,392		
		CHIL	10780	3582	1470	842	546	296	59	19	4	17,558		
		BAN	5639	1906	1017	417	268	149	67	5	2	9,470		
		OBL	172	87	33	13	7	1	0	0	0	313		
		TOTAL	20,470	7,110	3,313	1,769	1,258	707	201	53	10	34,891		
D 41 Bakhras C1	89.26	DEODAR	248	62	120	137	73	31	12	7	0	590	PB IV	
		KAIL	2415	929	50	37	28	10	1	0	0	3,470		
		CHIL	28255	5475	831	840	506	212	47	7	0	35,973		
		FIR / SPRUCE	0	0	0	1	0	0	0	0	0	1		
		OBL	1	0	0	0	0	0	0	0	0	1		
		TOTAL	30,919	6,466	1,001	815	607	253	60	14	0	40,135		
D 41 Bakhras C2	84.71	DEODAR	482	78	82	100	53	34	11	2	0	822	PS IV	
		KAIL	2625	533	79	46	36	8	0	0	0	3,327		
		CHIL	9817	3097	1551	1127	674	217	58	7	0	16,546		
		FIR / SPRUCE	1	2	1	4	0	0	0	0	0	8		
		BAN	217	259	124	8	6	2	0	0	0	616		
		OBL	12	9	0	0	0	0	0	0	0	21		
		TOTAL	13,134	3,978	1,837	1,285	769	261	87	9	0	21,340		
D 42 Charkulri C2	58.12	DEODAR	216	52	52	39	12	1	0	2	0	374	PB IV	
		KAIL	3435	2060	297	70	15	11	7	0	0	5,895		
		CHIL	15879	6352	1412	307	105	34	6	2	1	24,093		
		BAN	310	196	58	26	10	5	5	0	0	610		
		OBL	66	68	20	8	2	0	0	0	0	164		
		TOTAL	19,906	8,728	1,839	450	144	51	18	4	1	31,141		
D 44 Kalach W	14.72	DEODAR	13	10	13	4	0	0	0	0	0	40	PB IV	
		KAIL	2560	1852	851	213	37	10	0	0	1	5,527		
		CHIL	5785	2446	711	381	225	124	48	10	4	9,734		

Name & No. of forest	Area ha	Spp.	10-20 cm	20-30 cm	30-40 cm	40-50 cm	50-60 cm	60-70 cm	70-80 cm	80-90 cm	90-100 cm	Total		
Cam/sub-cam														
		FIR / SPRUCE	8	1	1	1	0	0	0	0	0	8		
		BAN	2710	880	538	193	122	29	11	8	2	4,473		
		OBL	1823	488	109	64	2	2	2	0	0	2,260		
		TOTAL	12,896	5,657	2,223	858	386	165	64	18	7	22,072		
D 45 Sandahal W	75.55	DEODAR	112	3	2	3	0	0	0	0	0	120	PB IV	
		KAIL	2104	965	229	33	1	0	0	0	0	3,332		
		CHIL	94688	13828	2166	1168	610	215	67	11	3	112,754		
		BAN	0	2	1	0	0	0	0	0	0	3		
		OBL	95	18	8	0	0	0	0	0	0	121		
		TOTAL	96,999	14,816	2,405	1,204	611	215	67	9	3	115,330		
D 48 Mashog W	39.51	KAIL	36	11	0	0	0	0	0	0	0	47	PB IV	
		CHIL	28470	15429	3626	1121	415	167	71	40	9	49,348		
		OBL	12	5	4	0	0	0	0	0	0	21		
		TOTAL	28,518	15,445	3,630	1,121	415	167	71	40	9	49,415		
D 49 Kot Bahal-I	23.57	CHIL	12401	3362	1549	1122	685	269	124	38	28	19,578	PB IV	
W		TOTAL	12,401	3,362	1,549	1,122	685	269	124	38	28	19,578		
D 50 Kot Bahal-II	15.82	CHIL	13410	3338	1203	286	151	156	50	27	22	18,643	PB IV	
W		TOTAL	13,410	3,338	1,203	286	151	156	50	27	22	18,643		
D 51 Kot Bahal-III	16.17	CHIL	18602	4320	864	244	123	58	41	26	21	24,299	PB IV	
W		TOTAL	18,602	4,320	864	244	123	58	41	26	21	24,299		
D 52 Kot Bahal W	16.02	DEODAR	97	12	7	4	20	14	13	1	0	168	PB IV	
		CHIL	21464	5602	696	105	64	57	49	20	6	28,063		
		TOTAL	21,561	5,614	703	109	84	71	62	21	6	28,231		
D 53 Kot Bahal-IV	21.53	DEODAR	9	0	1	0	0	0	0	0	0	10	PB IV	
C1		KAIL	378	75	33	11	8	6	2	0	0	513		
		CHIL	6797	848	318	330	199	72	11	7	3	8,585		
		OBL	3	2	0	0	0	0	0	0	0	5		
		TOTAL	7,187	925	352	341	207	78	13	7	3	9,113		
D 53 Kot Bahal-IV	49.44	DEODAR	2	0	0	0	0	0	0	0	0	2	PB IV	
C2		KAIL	223	91	41	7	6	2	0	0	0	370		
		CHIL	9757	1206	996	831	599	194	42	8	2	13,635		
		BAN	1	2	3	0	0	11	0	0	0	8		
		TOTAL	9,985	1,299	1,040	838	605	196	42	8	2	14,015		
D 56 Karadal C2	27.33	CHIL	24600	6553	2099	251	227	179	62	30	6	34,007	PB IV	

Name & No. of forest	Area ha	Spp.	10-20 cm	20-30 cm	30-40 cm	40-50 cm	50-60 cm	60-70 cm	70-80 cm	80-90 cm	90-100 cm	Total		
Cem/sub-com														
		TOTAL	24.600	6.553	2.099	251	227	179	62	30	6	34.007		
D 57 Narota Nagra	31.63	CHIL	10195	4331	1590	106	76	61	43	11	3	16.416	PB IV	
W		TOTAL	10.195	4.331	1.590	106	76	61	43	11	3	16.416		
D 58 Dharmour C1	51.66	DEODAR	487	124	15	9	0	0	0	0	0	635	PB IV	
		KAIL	5044	1510	199	82	64	31	19	7	0	6.956		
		CHIL	37421	7689	1082	331	264	170	60	16	5	47.038		
		BAN	9	5	6	0	1	1	0	0	0	22		
		OBL	4	10	18	19	5	3	0	1	0	60		
		TOTAL	42.965	9.338	1.320	441	334	205	79	24	5	54.711		
D 60 Himn W	9.37	DEODAR	19	3	0	0	0	0	0	0	0	22	PB IV	
		KAIL	64	23	5	1	0	0	0	0	0	93		
		CHIL	16477	4031	1417	262	145	77	30	16	2	22.427		
		BAN	511	216	137	52	28	4	0	1	0	949		
		OBL	325	172	45	12	2	0	0	0	0	556		
		TOTAL	17396	4415	1604	327	175	81	30	17	2	24047		
D 64 Salara Dageh	64.56	CHIL	12437	9566	851	223	66	24	8	0	0	22.975	PB IV	
W		TOTAL	12.437	9.566	851	223	66	24	8	0	0	22.975		
D 66 Salara Dageh II	26.65	DEODAR	26	14	2	1	0	0	0	0	0	43	PB IV	
		KAIL	4	2	0	0	0	0	0	0	0	6		
		CHIL	14503	16909	325	71	13	7	5	2	0	31.825		
		BAN	0	0	0	3	1	0	0	0	0	4		
		OBL	0	0	7	8	1	0	0	0	0	16		
		TOTAL	14.533	16.925	334	83	15	7	5	2	0	31.904		
D 67 Thuadhar C2	23.82	DEODAR	4	4	5	2	0	0	0	0	0	15	PB IV	
		CHIL	17623	16474	3285	1381	239	100	12	5	0	39.115		
		BAN	14	6	3	2	0	0	0	0	0	25		
		OBL	3	3	2	1	1	1	0	0	0	11		
		TOTAL	17.644	16.487	3.295	1.386	240	101	12	5	0	39.170		
D 67 Thuadhar C3	27.37	DEODAR	125	70	63	29	26	10	2	0	0	325	PB IV	
		KAIL	1	0	0	0	0	0	0	0	0	1		
		CHIL	18061	17823	3568	1450	410	167	39	4	0	41.522		
		BAN	0	0	5	4	4	2	0	0	0	15		
		OBL	1	0	1	0	0	0	0	0	0	2		
		TOTAL	18.184	17.893	3.637	1.483	441	179	41	4	0	41.865		

Name & No. of forest	Area ha	Sp.	10-20 cm	20-30 cm	30-40 cm	40-50 cm	50-60 cm	60-70 cm	70-80 cm	80-90 cm	90-100 cm	Total		
Com/sub-com														
C4a		KAIL	3	0	0	0	0	0	0	0	0	3		
		CHIL	8387	7365	737	171	78	53	5	0	0	17,816		
		BAN	2324	1385	253	97	11	3	2	0	0	4,454		
		OBL	9	0	0	0	0	0	0	0	0	9		
		TOTAL	11,732	9,159	996	271	89	55	7	0	0	22,305		
D 72 Reshtadhar	16.33	CHIL	8599	10494	970	278	55	14	2	0	0	20,410	PB IV	
C4I		BAN	2687	2605	383	228	114	32	11	2	1	6,041		
		TOTAL	11,268	13,099	1,353	502	169	46	13	2	1	26,451		
D 78 Kandha C2	140.39	DEODAR	1027	773	450	259	95	54	11	8	4	2,681	PB IV	
		KAIL	3	2	0	0	0	0	0	0	0	5		
		CHIL	37703	33283	5293	1135	260	111	9	0	0	77,775		
		BAN	1339	1140	345	145	47	28	2	0	0	3,044		
		OBL	427	460	93	22	3	0	0	0	0	1,005		
		TOTAL	40,499	35,638	6,181	1,562	405	191	22	8	4	84,510		
D 82 Devikal C1	91.73	DEODAR	14	4	0	0	0	0	0	0	0	18	PB IV	
		KAIL	7	0	0	0	0	0	0	0	0	7		
		CHIL	27062	8414	1700	952	428	238	68	29	6	38,897		
		BAN	72	113	66	19	9	8	0	0	0	317		
		OBL	32	24	10	2	1	3	0	0	0	72		
		TOTAL	27,187	8,555	1,806	973	438	249	68	29	6	39,311		
D 82 Devikal C2	95.19	CHIL	35842	32804	8630	814	322	162	33	11	0	76,618	PB IV	
		BAN	470	749	288	21	10	1	0	0	0	1,538		
		TOTAL	38,312	33,553	8,918	834	332	163	33	11	0	78,156		
D 83 Mandap W	185.38	DEODAR	99	35	3	2	0	1	2	0	0	142	PB IV	
		KAIL	4	0	0	0	0	0	0	0	0	4		
		CHIL	36439	9987	3477	1351	632	242	86	16	0	52,230		
		BAN	239	92	11	3	0	0	0	0	0	345		
		OBL	92	28	9	0	0	0	0	0	0	129		
		TOTAL	36,873	10,142	3,500	1,353	632	243	88	16	0	52,850		
D 102 Telhan C2b	51.97	CHIL	6881	10436	2998	922	343	76	18	10	0	23,684	PB IV	
		OBL	2700	1274	305	63	9	1	0	0	0	4,352		
		SHISHAM	28	21	1	0	0	0	0	0	0	50		
		KHAIR	33	4	0	0	0	0	0	0	0	37		
		TOTAL	11,642	11,735	3,304	985	352	77	18	10	0	28,123		

Name & No. of forest	Area ha	Spp.	10to20 cm	20-30 cm	30-40 cm	40-50 cm	50-60 cm	60-70 cm	70-80 cm	80-90 cm	90-100 cm	Total		
Com/sub-com														
D 102 Telehan C2c	85.92	CHIL	7661	11107	3341	1009	348	81	25	8	2	23.582	PB IV	
		OBL	1912	517	74	16	2	1	0	0	0	2.522		
		SHISHAM	0	1	0	0	0	0	0	0	0	0		
		TOTAL	9,573	11,626	3,415	1,025	350	82	25	8	2	26.106		
D 109 Ghaula W	42.16	KAIL	0	1	1	1	0	0	0	0	0	3	PB IV	
		CHIL	7181	9853	3905	1272	209	43	8	2	0	22.473		
		BAN	271	90	8	0	0	0	0	0	0	369		
		OBL	135	471	84	29	2	0	0	0	0	1,321		
		TOTAL	8,187	10,415	3,998	1,302	211	43	8	2	0	24.166		
D 110 Ghaula C3	42.98	CHIL	6944	5734	1602	866	95	17	4	0	0	15,262	PB IV	
		BAN	303	180	70	24	4	2	0	0	0	583		
		OBL	610	379	104	22	1	0	0	0	0	1,116		
		TOTAL	7,857	6,293	1,776	912	100	19	4	0	0	16,961		
D 110 Ghaula C5	65.6	KAIL	2	0	0	0	0	0	0	0	0	2	PB IV	
		CHIL	2727	2763	1730	1099	78	30	12	3	1	8,443		
		BAN	495	333	74	13	3	0	0	0	0	918		
		OBL	569	357	210	78	6	0	0	0	0	1,220		
		TOTAL	3,793	3,453	2,014	1,190	87	30	12	3	1	10,583		
CHIL WORKING CIRCLE														
PANGNA RANGE PB IV														
	Area	Spp.	10to20	20-30	30-40	40-50	50-60	60-70	70-80	80-90	90-100	Total		VOL.M3
	ha		cm	cm	cm	cm	cm	cm	cm	cm	cm			
	2171.6	DEODAR	5413	1861	1150	814	405	206	67	29	4	9949		5297.936
		KAIL	25426	10181	2787	1096	671	361	112	38	5	40677		11161.92
		CHIL	920406	440513	89920	32019	13384	5547	1652	524	147	1504112		187881.87
		FIR/SPRUCE	6	3	2	6	0	0	0	0	0	17		13.089
		BAN	30355	21981	6514	3030	1502	780	320	142	52	64676		24765.92
		KHAIR	33	4	0	0	0	0	0	0	0	37		2.881
		SHISHAM	28	23	1	0	0	0	0	0	0	52		6.307
		OBL	10436	4890	1350	411	55	14	2	1	0	17159		3043.392
		TOTAL	992,103	479,456	101,724	37,376	16,017	6,908	2,153	734	208	1,636,679		232,173

ENUMERATION RESULTS													
CHIL WORKING CIRCLE													
KARSOG RANGE													
PB I													
Name & No. of forest	Area ha	Spp.	10to20 cm	20-30 cm	30-40 cm	40-50 cm	50-60 cm	60-70 cm	70-80 cm	80-90 cm	90-100 cm	Total	Allel
Comp.													
D 123 TikkerKaprasi W	11.95	CHIL	837	474	488	93	8	2	0	0	0	1898	PB I
		KAIL	3	1	0	0	0	0	0	0	0	4	
		BAN	15	3	1	4	2	0	0	0	0	25	
		OBL	26	12	2	0	0	0	0	0	0	40	
		TOTAL	881	490	491	97	8	2	0	0	0	1967	
D 139 Odda C2	11.16	CHIL	697	663	486	322	95	48	11	2	0	2324	PB I
		DEODAR	47	4	2	3	1	0	0	0	0	57	
		KAIL	11	0	0	0	0	0	0	0	0	11	
		BAN	7	2	0	0	0	0	0	0	0	9	
		OBL	86	43	6	0	0	0	0	0	0	135	
		TOTAL	848	712	494	325	96	48	11	2	0	2636	
D 150 Jham Parala C2b	19.47	DEODAR	1	0	0	0	0	0	0	0	0	1	PB I
		KAIL	0	0	0	0	0	0	0	0	0	0	
		CHIL	5430	2060	577	350	149	65	20	5	0	8646	
		TOTAL	5431	2060	577	350	149	65	20	5	0	8647	
D 161 Dumal C1	37.88	KAIL	786	254	8	2	2	3	1	1	0	1,057	PB I
		CHIL	8988	878	210	285	181	44	6	1	0	10,403	
		OBL	1	3	0	0	0	0	0	0	0	4	
		TOTAL	9,775	935	218	297	183	47	7	2	0	11,464	
D 161 Dumal C2	59.68	KAIL	37	24	0	0	1	0	0	0	0	62	PB I
		CHIL	15604	3309	968	1026	550	145	19	4	0	21,625	
		BAN	6	12	6	0	0	0	0	0	0	24	
		OBL	18	5	2	0	0	0	0	0	0	25	
		TOTAL	15,665	3,350	976	1,026	551	145	19	4	0	21,736	
D 162 Kanjol C1	34.56	DEODAR	4	5	0	0	1	1	1	0	0	12	PB I
		KAIL	2150	431	4	7	9	2	0	0	0	2,603	
		CHIL	11195	1182	241	377	294	111	18	0	0	13,418	
		BAN	7	1	0	0	0	0	0	0	0	8	
		OBL	8	14	3	2	0	0	0	0	0	27	
		TOTAL	13364	1633	248	386	304	114	19	0	0	16068	

CHIL WORKING CIRCLE													
KARSOG RANGE													
PB I													
Area	Spp.	10to20	20-30	30-40	40-50	50-60	60-70	70-80	80-90	90-100	Total	VOL M3	
ha		cm	cm	cm	cm	cm	cm	cm	cm	cm			
305.78	DEODAR	502	188	97	118	41	9	5	1	0	959	498.512	
	KAIL	8135	2337	1544	1068	552	176	49	25	9	11893	5793.02	
	CHIL	64428	18340	5855	4314	2184	717	157	37	4	93834	15757.04	
	BAN	5772	3504	1508	1100	397	278	119	38	27	12743	6616.4	
	OBL	9520	4719	2713	1758	437	160	37	14	9	19367	6287.429	
	TOTAL	86355	27088	11517	8354	3611	1340	367	115	49	138796	34952.401	
ENUMERATION RESULTS													
CHIL WORKING CIRCLE													
KARSOG RANGE													
PB II													
Name & No.	Area	Spp.	10to20	20-30	30-40	40-50	50-60	60-70	70-80	80-90	90-100	Total	Allot.
of forest	ha		cm	cm	cm	cm	cm	cm	cm	cm	cm		
Comp.													
D 111 Bagsharh	12.62	CHIL	387	258	215	204	42	19	5	1	0	1131	PB II
C1b		BAN	19	9	0	0	0	0	0	0	0	28	
		OBL	8	1	0	0	0	0	0	0	0	9	
		TOTAL	414	268	215	204	42	19	5	1	0	1168	
D 111 Bagsharh	10.31	CHIL	1298	536	243	66	26	23	7	2	0	2201	PB II
C1c		BAN	34	4	0	0	0	0	0	0	0	38	
		OBL	4	1	2	0	0	0	0	0	0	7	
		TOTAL	1336	541	245	66	26	23	7	2	0	2246	
D 111 Bagsharh	14.26	CHIL	3107	1083	201	35	18	11	1	0	0	4456	PB II
C1d		BAN	161	48	5	2	0	0	0	0	0	216	
		OBL	1	3	0	0	0	0	0	0	0	4	
		TOTAL	3269	1134	206	37	18	11	1	0	0	4676	
D 111 Bagsharh	11.38	CHIL	626	285	198	62	11	2	1	0	0	1185	PB II
C1e		KAIL	16	3	1	0	0	0	0	0	0	20	
		BAN	647	249	86	32	12	5	1	0	0	1032	
		OBL	137	52	34	7	0	0	0	0	0	230	
		TOTAL	1426	589	319	101	23	7	2	0	0	2467	
D 111 Bagsharh	2.74	CHIL	665	271	65	44	12	2	1	0	0	1060	PB II
C1f		DEODAR	69	27	2	0	0	1	0	0	0	99	

Name & No. of forest Comp.	Area ha	Spp.	10to20 cm	20-30 cm	30-40 cm	40-50 cm	50-60 cm	60-70 cm	70-80 cm	80-90 cm	90-100 cm	Total	Allet
		TOTAL	734	288	87	44	12	3	1	0	0	1159	
D 111 Bagsharh C1g	7.7	CHIL	878	407	245	164	44	15	4	1	0	1759	PB II
		DEODAR	279	73	47	31	9	2	1	0	0	452	
		KAIL	2	0	0	0	0	0	0	0	0	2	
		BAN OAK	16	2	2	0	0	0	0	0	0	20	
		OBL	8	2	0	0	0	0	0	0	0	10	
		TOTAL	1193	484	294	195	53	17	5	1	0	2242	
D 111 Bagsharh C2a	13.26	CHIL	721	373	396	136	42	11	3	0	0	1682	PB II
		DEODAR	69	22	7	4	1	0	0	0	0	103	
		BAN OAK	77	17	10	1	0	0	0	0	0	105	
		OBL	18	2	0	0	0	0	0	0	0	20	
		TOTAL	885	414	413	141	43	11	3	0	0	1910	
D 111 Bagsharh C2b	9.77	CHIL	403	169	147	64	21	3	4	0	0	811	PB II
		KAIL	0	1	0	0	0	0	0	0	0	1	
		BAN OAK	346	188	49	17	5	0	0	0	0	605	
		OBL	1	1	0	0	0	0	0	0	0	2	
		TOTAL	750	359	196	81	26	3	4	0	0	1419	
D 111 Bagsharh C2c	9.2	CHIL	225	206	279	223	56	62	28	12	3	1094	PB II
		DEODAR	238	46	3	0	0	0	0	0	0	287	
		KAIL	35	37	9	3	0	0	0	0	0	84	
		BAN OAK	656	374	137	35	52	29	11	10	9	1313	
		OBL	29	44	16	9	5	0	0	0	0	103	
		TOTAL	1183	707	444	270	113	91	39	22	12	2881	
D 111 Bagsharh C2e	16.83	CHIL	441	902	996	682	225	27	5	2	1	3281	PB II
		BAN OAK	2	0	0	0	0	0	0	0	0	2	
		OBL	9	1	0	0	0	0	0	0	0	10	
		TOTAL	452	903	996	682	225	27	5	2	1	3293	
D 116 Dharmour C1	6.77	CHIL	661	387	343	32	30	29	9	3	0	1494	PB II
		BAN OAK	216	84	26	19	7	5	1	0	0	358	
		OBL	74	28	8	6	2	0	0	0	0	150	
		TOTAL	951	499	401	59	43	36	10	3	0	2002	
D 116 Dharmour C2	7.53	CHIL	2150	239	246	133	62	33	12	3	1	2875	PB II
		BAN OAK	12	0	0	0	0	0	0	0	0	12	
		OBL	7	2	0	0	0	0	0	0	0	9	

Name & No. of forest Comp.	Area ha	Opp.	10to20 cm	20-30 cm	30-40 cm	40-50 cm	50-60 cm	60-70 cm	70-80 cm	80-90 cm	90-100 cm	Total	Allot.
		TOTAL	2169	241	246	133	62	33	12	3	1	2900	
D 119 Mehran C2a	6.43	CHIL	294	135	39	15	3	6	1	0	0	493	PB II
		DEODAR	240	128	44	50	59	20	4	2	2	557	
		KAIL	31	11	7	2	0	0	0	0	0	51	
		OBL	1	0	0	0	0	0	0	0	0	1	
		TOTAL	574	274	90	67	62	26	5	2	2	1102	
D 119 Mehran C2b	5.75	CHIL	2595	548	129	31	11	5	0	0	0	3319	PB II
		DEODAR	0	2	0	0	1	0	0	0	0	3	
		KAIL	1	2	1	0	0	0	0	0	0	4	
		TOTAL	2596	552	130	31	12	5	0	0	0	3326	
D 119 Mehran C2c	4.1	CHIL	944	634	81	23	18	9	2	2	0	1713	PB II
		DEODAR	51	35	12	10	11	6	4	1	1	132	
		KAIL	6	3	1	1	0	0	0	0	0	11	
		TOTAL	1001	673	94	34	29	15	6	3	1	1856	
D 119 Mehran C2d	6.66	CHIL	957	524	120	25	2	0	0	0	0	1636	PB II
		TOTAL	957	524	128	25	2	0	0	0	0	1636	
D 119 Mehran C2e	9.37	CHIL	1119	756	229	97	11	2	1	0	0	2217	PB II
		BAN	29	17	6	3	1	0	0	0	0	55	
		OBL	13	5	0	0	0	0	0	0	0	18	
		TOTAL	1161	778	234	100	14	2	1	0	0	2290	
D 119 Mehran C2f	3.46	CHIL	191	174	79	27	10	0	0	0	0	481	PB II
		TOTAL	191	174	79	27	10	0	0	0	0	481	
D 120 Jinal W	1.29	CHIL	137	132	49	15	6	2	1	0	0	342	PB II
		OBL	0	1	0	0	0	0	0	0	0	1	
		TOTAL	137	133	49	15	6	2	1	0	0	343	
D 121 Basoli W	1.83	CHIL	543	227	135	77	18	0	5	1	0	1015	PB II
		TOTAL	543	227	135	77	18	0	5	1	0	1015	
D 122 Chalot W	0.42	CHIL	177	41	8	4	5	0	0	0	0	235	PB II
		TOTAL	177	41	8	4	5	0	0	0	0	235	
D 138 Bag Bakhari C2a	6.76	CHIL	909	189	126	39	18	5	2	0	0	1279	PB II
		DEODAR	143	21	0	0	0	0	0	0	0	164	
		KAIL	696	436	87	24	10	2	1	0	0	1256	
		BAN OAK	21	8	4	0	1	0	0	0	0	34	
		OBL	95	50	16	1	0	0	0	0	0	162	

Name & No. of forest Comp.	Area ha	Spp.	10to20 cm	20-30 cm	30-40 cm	40-50 cm	50-60 cm	60-70 cm	70-80 cm	80-90 cm	90-100 cm	Total	Allot.
		TOTAL	1855	704	233	64	29	7	3	0	0	2895	
D 138 Bag Bakhan C2b	6.69	CHIL	1039	527	165	31	24	10	1	1	1	1799	PB II
		KAIL	111	75	4	2	3	0	0	0	0	195	
		BAN OAK	97	99	33	7	3	0	0	0	0	239	
		OBL	31	37	12	3	1	0	0	0	0	84	
		TOTAL	1278	738	214	43	31	10	1	1	1	2317	
D 138 Bag Bakhan C2c	7.42	CHIL	1167	715	228	117	44	16	3	1	0	2291	PB II
		OBL	3	1	0	0	0	0	0	0	0	4	
		TOTAL	1170	716	228	117	44	16	3	1	0	2295	
D 138 Bag Bakhan C2d	5.64	CHIL	1044	547	61	15	9	5	1	0	0	1682	PB II
		OBL	9	2	0	0	0	0	0	0	0	11	
		TOTAL	1053	549	61	15	9	5	1	0	0	1693	
D 139 Odda C3a	5.47	CHIL	1227	422	179	65	18	5	0	0	0	1927	PB II
		DEODAR	45	11	0	8	2	1	0	1	0	74	
		KAIL	6	2	1	0	0	0	0	0	0	9	
		BAN OAK	5	0	0	0	0	0	0	0	0	5	
		OBL	42	4	0	0	0	0	0	0	0	46	
		TOTAL	1335	439	186	74	20	6	0	1	0	2061	
D 139 Odda C3b	8.45	CHIL	1435	612	151	26	12	4	0	0	0	2240	PB II
		DEODAR	127	52	15	15	3	1	1	0	0	214	
		KAIL	125	95	48	15	6	0	0	0	0	289	
		BAN OAK	3	1	0	0	0	0	0	0	0	4	
		OBL	27	19	1	0	0	0	0	0	0	47	
		TOTAL	1717	779	215	56	21	6	1	0	0	2790	
D 142 Bilasoo C2	4.55	CHIL	645	59	154	79	30	13	2	1	0	983	PB II
		DEODAR	43	18	1	7	0	1	0	2	0	70	
		KAIL	186	98	11	5	1	0	0	0	0	291	
		BAN OAK	10	0	0	0	0	0	0	0	0	10	
		TOTAL	884	171	166	91	31	14	2	3	0	1362	
D 148 Karani C2	2.36	CHIL	949	204	16	14	13	1	0	0	0	1197	PB II
		KAIL	3	1	0	0	0	0	0	0	0	4	
		BAN	0	0	1	0	0	0	0	0	0	1	
		OBL	2	1	0	0	0	0	0	0	0	3	
		TOTAL	954	206	17	14	13	1	0	0	0	1205	

Name & No. of forest Comp.	Area ha	Spp.	10to20 cm	20-30 cm	30-40 cm	40-50 cm	50-60 cm	60-70 cm	70-80 cm	80-90 cm	90-100 cm	Total	Allot.
D 149 Chandu W	7.37	CHIL	1987	784	235	32	7	4	2	1	1	3033	PB II
		BAN	1	2	0	0	0	0	0	0	0	3	
		OBL	5	1	1	2	0	0	0	0	0	9	
		TOTAL	1993	787	236	34	7	4	2	1	1	3045	
D 151 Karadal W	1.8	CHIL	838	196	31	10	13	2	1	0	0	1091	PB II
		TOTAL	838	196	31	10	13	2	1	0	0	1091	
D 152 Marandhi C1	7.47	CHIL	1779	436	168	71	29	15	3	1	1	2503	PB II
		TOTAL	1779	436	168	71	29	15	3	1	1	2503	
D 152 Marandhi C2	4.58	CHIL	998	305	266	112	21	4	0	0	0	1706	PB II
		TOTAL	998	305	266	112	21	4	0	0	0	1706	
D 158 Kufriidhar W	10.83	CHIL	4779	512	13	8	4	5	1	0	0	5323	PB II
		TOTAL	4779	512	13	9	4	5	1	0	0	5323	
D 160 Chalauni W	2.15	CHIL	1475	87	5	5	3	1	1	0	0	1577	PB II
		TOTAL	1475	87	5	5	3	1	1	0	0	1577	
D 162 Kanjol C3	4.35	CHIL	872	483	222	0	0	0	0	0	0	1577	PB II
		DEODAR	402	37	12	11	18	13	2	1	0	494	
		KAIL	52	24	2	1	0	0	0	0	0	79	
		TOTAL	1326	544	236	12	18	13	2	1	0	2150	
D 167 Baihu C3b	5.67	CHIL	991	224	210	85	51	50	13	0	0	1624	PB II
		DEODAR	60	10	9	1	1	4	1	0	0	86	
		KAIL	22	21	3	0	1	0	0	0	0	47	
		BAN	33	40	12	2	0	0	0	0	0	87	
		OBL	11	9	6	2	2	2	3	0	0	38	
		TOTAL	1120	304	240	90	55	56	17	0	0	1882	
D 167 Baihu C5	7.06	CHIL	3010	712	192	110	52	28	10	0	1	4115	PB II
		TOTAL	3010	712	192	110	52	28	10	0	1	4115	
D 170 Tikker Karsog C3b	4.17	CHIL	1688	332	99	21	12	0	0	1	0	2153	PB II
		KAIL	6	1	0	0	0	0	0	0	0	7	
		TOTAL	1694	333	99	21	12	0	0	1	0	2160	
D 171 Dopha-II C6	7.01	CHIL	1363	335	227	107	96	71	62	3	1	2265	PB II
		KAIL	88	20	0	1	1	1	1	0	0	112	
		BAN	547	302	101	14	5	3	1	1	0	974	
		OBL	91	35	6	0	0	0	0	0	0	132	
		TOTAL	2089	692	334	122	102	75	64	4	1	3483	

Name & No. of forest	Area ha	Spp.	10to20 cm	20-30 cm	30-40 cm	40-50 cm	50-60 cm	60-70 cm	70-80 cm	80-90 cm	90-100 cm	Total	Allet.
Comp.													
D 176 Ghaliach C2	9.72	CHIL	1498	194	25	18	30	17	5	0	0	1747	PB II
		DEODAR	459	134	33	33	18	9	0	0	0	686	
		KAIL	731	379	148	33	12	7	0	0	0	1310	
		BAN	280	194	49	1	1	0	1	0	0	526	
		TOTAL	2928	901	255	85	61	33	6	0	0	4269	
D 180 Tikendhar C1c	3.72	CHIL	1984	552	265	53	21	3	3	1	0	2862	PB II
		TOTAL	1984	552	265	53	21	3	3	1	0	2862	
D 181 Sanahardhar C2a	1.72	CHIL	316	261	110	37	34	10	14	0	0	782	PB II
		KAIL	15	0	1	0	0	0	0	0	0	16	
		OBL	8	2	3	0	1	0	0	0	0	14	
		TOTAL	339	263	114	37	35	10	14	0	0	812	
D 181 Sanahardhar C2b	2.44	CHIL	1245	623	194	39	39	26	14	3	0	2183	PB II
		KAIL	2	0	0	0	0	0	0	0	0	2	
		TOTAL	1247	623	194	39	39	26	14	3	0	2185	
D 182 Shill C2a	2.86	CHIL	2630	322	2	7	12	6	3	0	0	2982	PB II
		TOTAL	2630	322	2	7	12	6	3	0	0	2982	
D 182 Shill C2b	2.13	CHIL	1192	181	46	34	30	20	15	7	4	1529	PB II
		BAN	6	0	0	0	0	0	0	0	0	6	
		OBL	1	0	0	0	1	1	0	1	0	4	
		TOTAL	1199	181	46	34	31	21	15	8	4	1539	
D 183 Mahadev-Ki Banoni C2	1.58	CHIL	812	16	0	0	1	0	0	0	0	829	PB II
		DEODAR	0	1	0	0	0	0	0	0	0	1	
		TOTAL	812	17	0	0	1	0	0	0	0	830	
D 186 Kelodhar Saranda C1	8.56	CHIL	3115	325	6	4	13	21	15	1	0	3500	PB II
		KAIL	6	1	0	0	0	0	0	0	0	7	
		OBL	2	0	0	0	0	0	0	0	0	2	
		TOTAL	3123	326	6	4	13	21	15	1	0	3509	
D 186 Kelodhar Saranda C2	5.28	CHIL	1802	723	112	52	11	5	4	0	0	2809	PB II
		TOTAL	1802	723	112	52	11	5	4	0	0	2809	
D 186 Kelodhar Saranda C3	8.48	CHIL	2340	1022	465	165	103	73	32	0	0	4201	PB II
		DEODAR	10	0	0	0	0	0	0	0	0	10	
		KAIL	7	4	0	0	0	0	0	0	0	11	
		TOTAL	2357	1026	465	165	103	73	32	0	0	4222	
D 187 Kelodhar	3.12	CHIL	2014	401	301	20	4	0	0	0	0	2740	PB II

Name & No. of forest	Area ha	Sp.	10-20 cm	20-30 cm	30-40 cm	40-50 cm	50-60 cm	60-70 cm	70-80 cm	80-90 cm	90-100 cm	Total	Allot.
Comp.													
Saranda C1		DEODAR	20	0	0	0	0	0	0	0	0	20	
		KAIL	10	0	0	0	0	0	0	0	0	10	
		TOTAL	2044	401	301	20	4	0	0	0	0	2770	
D 187 Kelodhar	7	CHIL	1381	332	154	52	21	5	0	0	0	1946	PB II
Saranda C2a		DEODAR	92	74	16	8	5	3	2	0	0	200	
		KAIL	42	11	4	1	0	0	0	0	0	58	
		TOTAL	1516	417	174	61	26	8	2	0	0	2204	
D 187 Kelodhar	3.6	CHIL	904	262	125	70	34	10	2	0	0	1407	PB II
Saranda C2b		DEODAR	52	24	31	11	3	0	0	0	0	121	
		KAIL	21	4	2	1	0	0	0	0	0	28	
		OBL	65	2	1	0	0	0	0	0	0	68	
		TOTAL	1042	292	159	82	37	10	2	0	0	1624	
D 187 Kelodhar	9.5	CHIL	2124	803	402	202	53	0	0	0	0	3584	PB II
C3a		TOTAL	2124	803	402	202	53	0	0	0	0	3584	
D 187 Kelodhar	3.5	CHIL	1325	205	103	37	21	6	0	0	0	1697	PB II
C3b		DEODAR	2	4	5	0	0	0	0	0	0	11	
		KAIL	10	5	4	0	0	0	0	0	0	19	
		TOTAL	1337	214	112	37	21	6	0	0	0	1727	
D 188 Kandhi C2	6.09	CHIL	1454	152	302	235	102	54	5	0	0	2304	PB II
		KAIL	53	11	5	8	1	2	0	0	0	81	
		BAN	21	5	0	0	0	0	0	0	0	26	
		OBL	162	11	0	0	0	0	0	0	0	173	
		TOTAL	1690	179	307	243	104	56	5	0	0	2584	
D 190 Bajh-I W	0.82	CHIL	866	468	165	73	34	21	12	0	0	1639	PB II
		KAIL	45	56	33	44	31	24	4	0	0	237	
		TOTAL	911	524	198	117	65	45	16	0	0	1876	
D 191 Bajh-II	0.77	CHIL	745	482	225	113	75	11	3	0	0	1654	PB II
		DEODAR	6	1	1	1	2	2	1	0	0	14	
		TOTAL	751	483	226	114	77	13	4	0	0	1668	
D 192 Bajh W	4.79	CHIL	2556	2285	9	6	4	7	5	0	0	4872	PB II
		TOTAL	2556	2285	9	6	4	7	5	0	0	4872	
D 193 Katach C1	5.43	CHIL	1316	1224	633	381	317	186	83	0	0	4140	PB II
		TOTAL	1316	1224	633	381	317	186	83	0	0	4140	
D 193 Katach C3	6.71	CHIL	1463	1026	498	386	175	31	11	0	0	3582	PB II

					CHIL WORKING CIRCLE									
					KARSOG RANGE			PB	II					
	Area	Spp.	10to20	20-30	30-40	40-50	50-60	60-70	70-80	80-90	90-100	Total		VOL.M3
	ha		cm	cm	cm	cm	cm	cm	cm	cm	cm			
	398.06	DEODAR	3261	1556	833	560	170	122	34	7	3	6546		3182.9
		KAIL	2396	1332	382	142	67	36	6	0	0	4361		1210.59
		CHIL	88923	34823	13067	5948	2642	1257	538	54	14	147268		26042.77
		BAN	3262	1664	523	133	87	42	15	11	9	5746		1601.94
		OBL	1003	333	110	30	12	3	3	1	0	1495		264.362
		TOTAL	98845	39708	14915	6813	2978	1460	596	73	26	165414		32302.562
					ENUMERATION RESULTS									
					CHIL WORKING CIRCLE									
					KARSOG RANGE			PB	III					
Name & No.	Area	Spp.	10to20	20-30	30-40	40-50	50-60	60-70	70-80	80-90	90-100	Total	Allot.	
of forest	ha		cm	cm	cm	cm	cm	cm	cm	cm	cm			
Comp.														
D136 Bag Bakhan	8.28	CHIL	142	137	205	79	32	10	5	1	0	611	PB III	
C1c		DEODAR	0	1	0	0	0	0	0	0	0	1		
		KAIL	256	73	91	51	23	18	5	2	0	519		
		BAN OAK	155	114	71	15	9	2	1	0	0	367		
		OBL	239	136	30	6	2	1	0	0	0	414		
		TOTAL	792	461	397	151	66	31	11	3	0	1912		
D 153 Dharanda	6.5	CHIL	1249	435	153	67	25	6	0	0	0	1935	PB III	
C1		OBL	2	0	0	0	0	0	0	0	0	2		
		TOTAL	1251	435	153	67	25	6	0	0	0	1937		
D 153 Dharanda	6.08	CHIL	1105	377	35	22	2	0	0	0	0	1541	PB III	
C2		TOTAL	1105	377	35	22	2	0	0	0	0	1541		
D 157 Kandha-II W	12.14	CHIL	952	559	174	57	32	25	6	0	0	1805	PB III	
		TOTAL	952	559	174	57	32	25	6	0	0	1805		
D 171 Dopha-II C8	3.72	CHIL	1278	368	187	67	56	49	28	3	0	2038	PB III	
		DEODAR	55	6	2	0	0	1	1	0	0	65		
		KAIL	13	3	0	0	0	0	0	0	0	16		
		BAN OAK	285	157	41	14	2	0	0	0	0	499		
		OBL	24	3	0	0	0	0	0	0	0	27		
		TOTAL	1655	537	230	81	58	50	29	3	0	2643		

Name & No. of forest	Area ha	Spp.	10to20 cm	20-30 cm	30-40 cm	40-50 cm	50-60 cm	60-70 cm	70-80 cm	80-90 cm	90-100 cm	Total		
Comp.														
D 207 Gandhoi C1	11.38	CHIL	2616	1546	1016	165	15	11	3	0	0	5372	PB III	
		TOTAL	2616	1546	1016	165	15	11	3	0	0	5372		
					CHIL WORKING CIRCLE									
					KARSOG RANGE			PB	III					
	Area	Spp.	10to20	20-30	30-40	40-50	50-60	60-70	70-80	80-90	90-100	Total		VOL.M3
	ha		cm	cm	cm	cm	cm	cm	cm	cm	cm			
	48.12	DEODAR	55	7	2	0	0	1	1	0	0	66		15 484
		KAIL	269	76	91	51	23	18	5	2	0	535		322 34
		CHIL	7342	3422	1770	457	162	101	42	4	0	13300		2269 1
		BAN OAK	440	271	112	29	11	2	1	0	0	866		256 82
		OBL	265	139	30	6	2	1	0	0	0	443		75 509
		TOTAL	8371	3915	2005	543	198	123	49	6	0	15210		2939 253
					ENUMERATION RESULTS									
					CHIL WORKING CIRCLE									
					KARSOG RANGE			PB	IV					
Name & No. of forest	Area ha	Spp.	10to20 cm	20-30 cm	30-40 cm	40-50 cm	50-60 cm	60-70 cm	70-80 cm	80-90 cm	90-100 cm	Total	Allot.	
Comp.														
D 111 Thaloo W	33.12	DEODAR	14	6	14	6	7	10	4	0	3	64	PB IV	
		CHIL	13871	8805	3571	634	344	155	66	22	3	27 471		
		OBL	23	8	0	0	0	0	0	0	0	31		
		TOTAL	13 908	8 819	3 585	640	351	165	70	22	6	27 566		
D 113 Khamaroo	29.15	CHIL	8999	5668	1811	538	284	45	19	14	0	17 378	PB IV	
C1		BAN	16	4	1	0	0	0	0	0	0	21		
		OBL	31	16	4	0	0	0	0	0	0	51		
		TOTAL	9 046	5 688	1 816	538	284	45	19	14	0	17 450		
D 113 Khamaroo	21.36	CHIL	7664	6862	2180	501	93	33	12	2	0	17 347	PB IV	
C2		OBL	18	7	2	1	0	0	0	0	0	28		
		TOTAL	7 682	6 869	2 182	502	93	33	12	2	0	17 375		
D 114 Falindi W	2.86	CHIL	384	137	37	15	3	0	0	0	0	576	PB IV	
		TOTAL	384	137	37	15	3	0	0	0	0	576		
D 115 Khamaroo W	4.3	CHIL	2662	1504	595	93	22	2	2	0	0	4 980	PB IV	

Name & No. of forest Comp.	Area ha	Spp.	10to20 cm	20-30 cm	30-40 cm	40-50 cm	50-60 cm	60-70 cm	70-80 cm	80-90 cm	90-100 cm	Total	Allot.
		OBL	48	29	8	1	1	2	6	6	6	80	
		TOTAL	2,710	1,633	603	95	23	4	2	6	6	5,070	
D 117 Dharmour	27.58	DEODAR	1494	365	86	62	57	24	25	8	5	2,126	PB IV
Allad C1		KAIL	73	36	7	5	4	4	0	0	0	129	
		CHIL	9907	2206	866	860	496	190	48	15	0	14,588	
		BAN	154	43	29	20	23	5	6	2	1	283	
		OBL	42	27	7	1	0	1	0	0	0	80	
		TOTAL	11670	2677	995	950	590	224	79	25	6	17,206	
D 117 Dharmour	12.35	CHIL	7181	2516	434	194	84	57	22	9	2	10,499	PB IV
Allad C2		BAN	8	8	3	2	0	0	0	0	0	21	
		OBL	2	3	6	3	0	0	0	0	0	14	
		TOTAL	7191	2527	443	199	84	57	22	9	2	10,534	
D 118 Kot C1	19.24	DEODAR	281	65	20	26	22	8	1	0	0	423	PB IV
		KAIL	7	2	2	0	0	0	0	0	0	11	
		CHIL	14138	4321	845	503	246	63	7	1	1	20,125	
		BAN	29	5	3	7	4	1	1	0	2	52	
		OBL	22	7	3	2	2	0	1	0	0	37	
		TOTAL	14,477	4,400	873	538	274	72	10	1	3	20,648	
D 118 Kot C2	42.48	DEODAR	197	102	1	3	3	4	4	1	0	315	PB IV
		KAIL	15	0	1	2	0	0	0	0	0	18	
		CHIL	15432	4663	1275	414	311	26	12	0	0	22,133	
		OBL	2	2	1	0	1	0	0	0	0	6	
		TOTAL	15,646	4,767	1,278	419	315	30	16	1	0	22,472	
D 119 Mehran C1a	16.3	DEODAR	302	112	17	65	29	12	3	4	0	544	PB IV
		KAIL	47	30	6	6	0	0	0	0	0	89	
		CHIL	7795	2227	422	150	95	64	46	29	3	10,831	
		OBL	5	0	0	0	0	0	0	0	0	5	
		TOTAL	8,149	2,369	445	221	124	76	49	33	3	11,469	
D 119 Mehran C1b	72.83	DEODAR	187	193	53	37	17	14	1	0	0	502	PB IV
		KAIL	27	31	7	8	3	1	0	0	0	77	
		CHIL	22753	16243	4086	763	160	48	5	1	2	44,061	
		TOTAL	22,967	16,467	4,146	808	180	63	6	1	2	44,640	
D 124 Kalhautha	23.5	DEODAR	328	223	33	7	0	1	1	0	0	593	PB IV
C1a		KAIL	27	22	0	0	0	0	0	0	0	49	

Name & No. of forest Comp.	Area ha	Spp.	10to20 cm	20-30 cm	30-40 cm	40-50 cm	50-60 cm	60-70 cm	70-80 cm	80-90 cm	90-100 cm	Total	Allot.
		CHIL	10372	8163	1855	440	154	68	30	0	0	19,094	
		BAN	23	10	2	0	0	0	0	0	0	35	
		OBL	100	81	7	0	0	0	0	0	0	188	
		TOTAL	10,856	8,479	1,906	447	155	69	31	0	0	19,939	
D 124 Kalhautha	32.35	CHIL	15112	5957	491	147	69	45	10	3	0	21,842	PB IV
C1b		BAN	29	13	7	2	0	0	0	0	0	51	
		OBL	541	127	0	0	0	0	0	0	0	668	
		TOTAL	15,682	6,097	498	149	69	45	10	3	0	22,561	
D 124 Kalhautha	43.64	DEODAR	1	0	0	0	0	0	0	0	0	1	PB IV
C1c		KAIL	1	0	0	0	0	0	0	0	0	1	
		CHIL	14998	10186	735	383	201	67	15	1	0	26,586	
		OBL	05	4	0	0	0	0	0	0	0	69	
		TOTAL	15,065	10,190	735	383	201	67	15	1	0	26,657	
D 124 Kalhautha	19.08	DEODAR	63	61	23	9	4	0	0	0	0	160	PB IV
C2a		KAIL	24	15	7	0	0	0	0	0	0	46	
		CHIL	14472	11530	1826	255	41	9	5	2	1	28,141	
		BAN	6	0	2	0	0	0	0	0	0	8	
		OBL	69	8	0	0	0	0	0	0	0	77	
		TOTAL	14,634	11,614	1,858	264	45	9	5	2	1	28,432	
D 124 Kalhautha	28.99	DEODAR	85	45	33	27	7	3	2	1	0	203	PB IV
C2b		KAIL	421	481	163	67	22	8	4	3	0	1,149	
		CHIL	7032	4619	1061	253	80	33	5	4	0	13,087	
		BAN	18	10	5	0	0	0	0	0	0	33	
		OBL	61	10	3	0	0	0	0	0	0	74	
		TOTAL	7,617	5,145	1,265	347	109	44	11	8	0	14,546	
D 124 Kalhautha	31.74	DEODAR	21	1	2	2	0	0	0	0	0	28	PB IV
C3		KAIL	1380	1391	784	310	101	58	34	10	4	4,072	
		CHIL	12622	9786	1612	562	152	53	14	5	0	25,006	
		BAN	411	520	100	31	5	1	0	0	0	1,068	
		OBL	518	272	39	4	0	0	0	0	0	833	
		WALNUT	0	1	0	0	1	0	0	0	0	2	
		TOTAL	15,152	11,973	2,537	909	259	112	48	15	4	31,009	
D 140 Dharanda W	13.43	CHIL	4556	1428	81	11	5	3	3	1	0	6088	PB IV
		KAIL	1	0	0	0	0	0	0	0	0	1	

Name & No. of forest Comp.	Area ha	Spp.	10-20 cm	20-30 cm	30-40 cm	40-50 cm	50-60 cm	60-70 cm	70-80 cm	80-90 cm	90-100 cm	Total	Allot.
		OBL	19	3	1	0	0	0	0	0	0	23	
		TOTAL	4576	1431	82	11	5	3	3	1	0	6112	
D 141 Thanger W	30.36	CHIL	15629	2510	465	198	109	61	26	7	1	19006	PB IV
		KAIL	1	2	0	0	0	0	0	0	0	3	
		BAN	111	4	1	1	0	0	0	0	0	24	
		OBL	13	2	1	0	0	0	0	0	0	16	
		TOTAL	15661	2518	467	199	109	61	26	7	1	19049	
D 142 Bilasoo C1	18.42	CHIL	9747	3103	497	114	43	20	6	2	0	13532	PB IV
		DEODAR	13	4	1	0	0	0	0	0	0	18	
		KAIL	89	78	57	25	3	0	0	0	0	252	
		BAN	824	212	70	18	7	2	0	0	0	1133	
		OBL	289	71	18	2	0	0	0	0	0	380	
		TOTAL	10962	3468	643	159	53	22	6	2	0	15315	
D 145 Kashmir-III W	27.55	DEODAR	7511	268	158	122	13	5	1	4	2	1,331	PB IV
		KAIL	459	474	213	134	67	10	20	0	0	1,377	
		CHIL	15266	5143	759	146	113	11	4	1	0	21,443	
		RAINFIR	54	36	17	6	3	2	0	0	0	118	
		BAN	1	4	1	0	1	0	0	0	0	7	
		OBL	1	4	4	0	0	0	0	0	0	9	
		TOTAL	16537	5921	1147	408	196	28	25	5	2	24,285	
D 146 Kashmir-II W	64.24	CHIL	11062	5304	1949	713	286	128	45	17	10	19514	PB IV
		KAIL	346	246	68	31	10	1	0	0	0	702	
		BAN	10	14	0	0	0	0	0	0	0	24	
		OBL	107	98	15	2	0	0	0	0	0	222	
		TOTAL	11525	5662	2032	748	296	129	45	17	10	20462	
D 147 Kashmir-IV W	28.08	DEODAR	207	38	15	10	4	1	0	0	0	275	PB IV
		KAIL	291	111	46	37	15	1	1	0	0	502	
		CHIL	9495	3314	1638	942	665	227	46	10	3	16,340	
		BAN	154	132	53	24	10	3	2	0	0	378	
		OBL	156	56	30	38	2	0	0	0	0	282	
		TOTAL	10,303	3,651	1,782	1,051	696	232	49	10	3	17,777	
D 150 Jhau Parala C1a	35.89	CHIL	8900	1564	536	406	199	55	16	2	1	11679	PB IV
		DEODAR	0	0	0	0	1	0	0	0	0	1	
		KAIL	223	101	13	7	7	2	0	0	0	353	

Name & No. of forest	Area ha	Spp.	10to20 cm	20-30 cm	30-40 cm	40-50 cm	50-60 cm	60-70 cm	70-80 cm	80-90 cm	90-100 cm	Total	Allot.
Comp.													
		BAN	18	5	6	3	1			0	0	33	
		OBL	22	5	2	0	0			0	0	36	
		TOTAL	9175	1675	557	416	202	37	14	1	0	12102	
D 150 Jhau Parala C1b	14.05	CHIL	6944	3715	471	244	146	37	14	1	0	11.572	PB IV
		BAN	8	5	3	0	0	0	0	0	0	16	
		OBL	5	1	0	1	0	0	0	0	0	7	
		TOTAL	6.857	3.721	474	245	146	37	14	1	0	11.595	
D 150 Jhau Parala C1c	10.67	CHIL	2380	830	85	73	55	18	1	0	0	3.442	PB IV
		TOTAL	2380	830	85	73	55	18	1	0	0	3.442	
D 150 Jhau Parala C2a	32.51	KAIL	1	0	0	0	0	0	0	0	0	1	PB IV
		CHIL	5314	2334	647	411	185	38	10	1	0	8.940	
		OBL	3	1	0	0	0	0	0	0	0	4	
		TOTAL	5.318	2.335	647	411	185	38	10	1	0	8.945	
D 156 Kandha-I W	23.06	CHIL	1229	654	4	0	0	0	0	0	0	1.887	PB IV
		TOTAL	1229	654	4	0	0	0	0	0	0	1.887	
D 159 Saned W	28.9	CHIL	8187	1044	8	2	1	1	0	0	0	9.253	PB IV
		TOTAL	8187	1044	8	2	1	1	0	0	0	9.253	
D 162 Kanjol C2	45.87	DEODAR	203	37	4	5	2	4	0	1	0	256	PB IV
		KAIL	189	65	1	0	1	0	0	0	0	256	
		CHIL	16930	1987	169	177	107	44	12	1	0	19.427	
		TOTAL	17.322	2.089	174	182	110	48	12	2	0	19.939	
D 163 Kol W	11.96	CHIL	4585	1020	17	6	0	0	0	0	0	5.628	PB IV
		TOTAL	4585	1020	17	6	0	0	0	0	0	5.628	
D 165 Chindhi C1	15.74	DEODAR	376	92	96	104	63	18	5	0	0	754	PB IV
		KAIL	756	281	82	79	48	14	0	0	0	1.260	
		CHIL	2235	770	132	138	110	17	3	0	0	3.405	
		BAN	0	0	2	1	0	0	0	0	0	3	
		TOTAL	3.367	1.143	312	322	221	49	8	0	0	5.422	
D 166 Chakranth C3	24.92	DEODAR	1	1	0	0	0	0	0	0	0	2	PB IV
		KAIL	211	61	4	0	0	0	0	0	0	276	
		CHIL	7339	712	235	204	82	14	0	0	0	8.586	
		TOTAL	7.551	774	239	204	82	14	0	0	0	8.864	
D 168 Nauba W	8.66	CHIL	311	921	313	3	0	0	0	0	0	1.548	PB IV
		TOTAL	311	921	313	3	0	0	0	0	0	1.548	

Name & No. of forest Comp.	Area ha	Spp.	10to20 cm	20-30 cm	30-40 cm	40-50 cm	50-60 cm	60-70 cm	70-80 cm	80-90 cm	90-100 cm	Total	Allot.
D 170 Tikker Karsog C1a	12.45	DEODAR	300	107	23	15	14	18	9	5	0	482	PB IV
		KAIL	15	7	4	0	0	1	1	0	0	28	
		CHIL	9891	2531	702	212	51	12	0	0	0	13,393	
		BAN	18	21	8	0	0	0	0	0	0	47	
		OBL	17	12	0	2	0	0	0	0	0	31	
		TOTAL	10,241	2,678	737	229	65	32	10	5	0	13,997	
D 170 Tikker Karsog C1b	33.3	DEODAR	1	1	0	0	0	0	0	0	0	2	PB IV
		KAIL	11	11	7	3	1	1	0	0	0	34	
		CHIL	8068	4435	871	273	58	14	1	0	0	13,718	
		BAN	41	35	9	2	0	0	0	0	0	87	
		OBL	16	3	0	0	0	0	0	0	0	19	
		TOTAL	8,137	4,485	887	278	57	15	1	0	0	13,860	
D 170 Tikker Karsog C1c	15.15	DEODAR	12	11	3	3	2	6	0	0	0	37	PB IV
		KAIL	30	16	7	1	0	0	0	0	0	54	
		CHIL	9137	3757	329	51	11	4	0	1	0	13,290	
		TOTAL	9,179	3,784	339	55	13	10	0	1	0	13,381	
D 170 Tikker Karsog C1d	35.47	DEODAR	0	0	1	2	0	0	0	0	0	3	PB IV
		KAIL	488	1113	785	261	56	25	9	0	0	2,737	
		CHIL	3637	1744	542	259	128	41	5	1	0	6,355	
		BAN	120	168	65	18	7	5	0	0	0	381	
		OBL	294	324	95	37	6	1	1	0	0	758	
		TOTAL	4,539	3,347	1,488	577	195	72	15	1	0	10,234	
D 172 Dophal C1	62.15	DEODAR	2	0	0	0	0	0	1	0	0	3	PB IV
		KAIL	741	160	42	17	10	7	7	0	0	984	
		CHIL	20044	8452	1159	549	199	83	18	4	3	28,509	
		BAN	2582	1090	537	336	116	26	8	7	5	4,707	
		OBL	2118	1068	450	284	81	17	4	2	1	4,035	
		TOTAL	25,487	8,770	2,188	1,196	406	133	36	13	9	38,238	
D 172 Dophal C2	58.07	DEODAR	91	0	0	0	0	0	0	0	0	91	PB IV
		KAIL	254	121	85	2	1	0	0	0	0	463	
		CHIL	27133	4373	912	192	115	104	44	13	4	32,890	
		BAN	3671	1552	442	310	125	60	26	6	4	6,195	
		OBL	1721	1003	654	184	43	17	2	1	1	3,626	
		TOTAL	32,870	7,049	2,093	688	284	181	72	20	9	43,265	

Name & No. of forest	Area ha	Sp.	10-20 cm	20-30 cm	30-40 cm	40-50 cm	50-60 cm	60-70 cm	70-80 cm	80-90 cm	90-100 cm	Total	Allot.
Comp.													
D 172 Dophal	62.5	DEODAR	23	6	8	1	0	0	0	0	0	28	PB IV
C3		KAIL	149	14	20	3	1	0	0	0	0	187	
		CHIL	28152	3313	746	214	198	108	47	12	3	32,783	
		BAN	3684	1705	1037	663	328	207	95	59	21	7,779	
		OBL	1160	688	319	99	24	4	1	1	0	2,296	
		TOTAL	33,148	5,726	2,130	980	551	319	143	72	24	43,093	
D 172 Dophal	72.47	DEODAR	106	45	6	2	1	0	0	0	0	160	PB IV
C4		KAIL	1213	780	770	574	237	91	31	7	2	3,705	
		CHIL	12708	2554	507	219	137	59	21	5	1	16,211	
		FIR / SPRUCE	5	3	4	2	0	0	0	0	0	14	
		BAN	7783	3827	2046	1052	389	217	57	28	15	15,414	
		OBL	2951	1699	797	302	88	12	8	1	0	5,858	
		TOTAL	14032	3382	1287	797	375	150	52	12	3	41,362	
D 176 Ghaliach C3	23.81	DEODAR	207	31	10	11	5	0	0	0	0	264	PB IV
		KAIL	797	587	143	9	0	0	0	0	0	1,536	
		CHIL	16760	1426	220	252	268	119	33	5	0	19,083	
		BAN	185	34	11	4	5	0	0	0	0	239	
		TOTAL	17,949	2,078	384	276	278	119	33	5	0	21,122	
D 179 Mamaidhar	14.07	CHIL	2484	5175	503	0	0	0	0	0	0	8,162	PB IV
IV		EUCALYPTUS	5	50	34	9	1	2	0	0	0	107	
		TOTAL	2,489	5,231	537	9	1	2	0	0	0	8,269	
D 180 Tikkeridhar	24.89	CHIL	19594	2311	644	48	21	7	0	1	0	22,626	PB IV
C1a		OBL	5	0	0	0	0	0	0	0	0	5	
		TOTAL	19,599	2,311	644	48	21	7	0	1	0	22,631	
D 180 Tikkeridhar	26.1	CHIL	29259	1211	206	143	73	22	4	0	0	30,918	PB IV
C1b		TOTAL	29259	1211	206	143	73	22	4	0	0	30,918	
D 180 Tikkeridhar	11.58	CHIL	8750	1391	100	14	28	19	17	4	1	10,334	PB IV
C2a		BAN	36	35	7	7	2	0	0	0	0	87	
		OBL	26	18	8	0	0	0	0	0	0	52	
		TOTAL	8,812	1,444	123	21	30	19	17	4	1	10,473	
D 180 Tikkeridhar	20.11	KAIL	310	97	19	12	0	0	0	0	0	446	PB IV
C2b		CHIL	9670	1526	814	398	185	78	31	17	0	12,717	
		BAN	959	252	422	337	151	38	21	21	7	2,210	
		OBL	129	120	54	19	3	4	2	3	3	337	

Name & No. of forest Comp.	Area ha	Spp.	10to20 cm	20-30 cm	30-40 cm	40-50 cm	50-60 cm	60-70 cm	70-80 cm	80-90 cm	90-100 cm	Total	Allot	
		TOTAL	11.068	1.995	1.309	766	349	118	54	41	10	15.710		
D 181 Sanahardhar C1	15.32	KAIL	340	159	34	21	6	0	0	0	0	562	PB IV	
		CHIL	4931	686	973	900	438	162	39	13	1	8,143		
		BAN	405	127	186	136	60	42	20	4	6	986		
		TOTAL	5,676	972	1,193	1,059	504	204	59	17	7	9,691		
D 181 Sanahardhar C3	16.95	CHIL	13857	4401	1046	502	290	83	22	6	2	20,209	PB IV	
		TOTAL	13857	4401	1046	502	290	83	22	6	2	20,209		
D 181 Sanahardhar C4	28.37	DEODAR	1	0	0	0	0	0	0	0	1	2	PB IV	
		KAIL	15	5	1	0	0	0	0	0	0	21		
		CHIL	13367	3228	582	1064	270	136	41	11	2	18,701		
		BAN	26	37	25	16	2	1	1	1	2	111		
		OBL	5	1	0	1	0	0	0	0	0	7		
		TOTAL	13,414	3,271	608	1,081	272	137	42	12	5	18,842		
D 182 Shill C1a	6.42	KAIL	39	9	0	0	0	0	0	0	0	48	PB IV	
		CHIL	10624	1127	261	77	86	78	35	16	1	12,305		
		TOTAL	10,663	1,136	261	77	86	78	35	16	1	12,353		
D 182 Shill C1b	13.87	KAIL	11	2	0	0	0	0	0	0	0	13	PB IV	
		CHIL	21776	1354	308	492	264	99	17	4	0	24,314		
		OBL	97	15	4	0	0	0	0	0	0	116		
		TOTAL	21,884	1,371	312	492	264	99	17	4	0	24,443		
D 184 Mahadev- Ki-Banoni-I W	35.85	CHIL	14886	423	36	25	12	8	2	0	0	15,392	PB IV	
		OBL	5	1	1	0	0	0	0	0	0	7		
		TOTAL	14,891	424	37	25	12	8	2	0	0	15,399		
D 185 Mahadev- Ki-Banoni-II W	44.91	KAIL	2	1	0	0	0	0	0	0	0	3	PB IV	
		CHIL	27046	2339	415	390	199	72	32	15	0	30,508		
		OBL	2	0	0	0	0	0	0	0	0	2		
		TOTAL	27,050	2,340	415	390	199	72	32	15	0	30,513		
D 187 Kelodhar Saranda C4a	27.27	DEODAR	568	146	310	163	104	15	3	0	1	1,310	PB IV	
		KAIL	1327	279	48	2	0	0	0	0	0	1,656		
		CHIL	13409	2778	1273	688	433	225	47	9	0	18,862		
		BAN	183	47	18	12	11	4	1	0	0	278		
		OBL	22	0	0	0	0	0	0	0	0	22		
		TOTAL	15,509	3,250	1,649	865	548	244	51	9	1	22,128		
D 187 Kelodhar	54.72	DEODAR	646	252	97	15	14	1	1	0	0	1,028	PB IV	

Name & No. of forest Comp.	Area ha	Spp.	10to20 cm	20-30 cm	30-40 cm	40-50 cm	50-60 cm	60-70 cm	70-80 cm	80-90 cm	90-100 cm	Total	Allot.
Saranda C4b		KAIL	1344	797	34	22	0	0	0	0	0	2,187	
		CHIL	12204	2488	573	428	38	25	10	3	0	15,767	
		BAN	217	55	29	18	7	6	2	1	1	336	
		OBL	40	2	1	0	0	0	0	0	0	43	
		TOTAL	14,451	3,592	734	483	59	32	13	4	1	19,368	
D 194 Bherm Shil W	13.56	CHIL	15384	1337	30	14	12	20	9	1	0	16,807	PB IV
		TOTAL	15384	1337	30	14	12	20	9	1	0	16,807	
D 195 Bhagyar W	2.2	CHIL	1180	123	0	0	0	0	0	0	0	1,303	PB IV
		TOTAL	1180	123	0	0	0	0	0	0	0	1,303	
D 196 Kufridhar W	3.93	CHIL	1683	75	0	0	0	0	0	0	0	1,758	PB IV
		TOTAL	1683	75	0	0	0	0	0	0	0	1,758	
D 203 Thach C1	33.08	DEODAR	1994	386	88	18	14	4	2	0	0	2,506	PB IV
		KAIL	537	180	23	16	6	2	1	0	0	775	
		CHIL	2837	1657	790	315	138	15	0	0	0	5,752	
		BAN	403	175	99	19	2	0	0	0	0	698	
		OBL	10	2	3	0	0	0	0	0	0	15	
		TOTAL	5,781	2,410	1,003	368	160	21	3	0	0	9,746	
D 204 Shanao W	64.96	CHIL	3350	1112	433	169	60	15	0	0	0	7,139	PB IV
		BAN	11	13	10	0	0	0	0	0	0	34	
		OBL	15	7	11	0	0	0	0	0	0	33	
		TOTAL	5,376	1,132	454	169	60	15	0	0	0	7,206	
					CHIL WORKING CIRCLE								
					KARSOG RANGE				PB	IV			
	Area	Spp.	10to20	20-30	30-40	40-50	50-60	60-70	70-80	80-90	90-100	Total	VOL M3
	ha		cm	cm	cm	cm	cm	cm	cm	cm	cm		
	1728.7	DEODAR	8482	2600	1102	715	383	149	63	24	12	13530	5140.8
		KAIL	12212	7755	3483	1658	607	226	108	20	6	26073	9873.15
		CHIL	879534	205171	46694	18381	8650	3238	985	300	47	963000	110314.27
		RAI/FIR	59	39	21	8	3	2	0	0	0	132	64.761
		BAN	22031	10160	5239	3039	1258	618	240	129	64	42778	19001.36
		EUCAL	5	56	34	9	1	2	0	0	0	107	47.889
		W.NUT	0	1	0	0	1	0	0	0	0	2	1.871
		OBL	10802	5785	2548	996	251	58	19	8	5	20472	5060.422
		TOTAL	733125	231567	59121	24804	11154	4293	1415	481	134	1066094	149504.52

ENUMERATION RESULTS													
CHIL WORKING CIRCLE													
Name & No. of forest	Area ha	Spp.	10to20	20-30	SER	RANGE	PB		I		Total	Aiol.	
			cm	cm	30-40 cm	40-50 cm	50-60 cm	60-70 cm	70-80 cm	80-90 cm			90-100 cm
Comp.													
D 224 Mambli C2	14.53	DEODAR	0	0	1	1	0	0	0	0	0	2	PBI
		KAIL	3	0	0	0	0	0	0	0	0	3	
		CHIL	1224	373	366	319	244	153	20	12	0	2,711	
		OBL	0	101	42	0	0	0	0	0	0	143	
		TOTAL	1227	474	409	320	244	153	20	12	0	2859	
D 224 Mambli C3	12.34	CHIL	2666	598	594	478	460	354	42	9	4	5,205	PBI
		OBL	100	46	33	1	0	0	0	0	0	180	
		TOTAL	2766	644	627	479	460	354	42	9	4	5385	
D 224 Mambli C4	9.78	CHIL	1884	490	339	104	58	33	16	1	0	2,923	PBI
		OBL	14	8	10	0	0	0	0	0	0	32	
		TOTAL	1898	498	349	104	58	33	16	1	0	2957	
D 224 Mambli C5	23.56	CHIL	5529	1631	658	157	70	34	11	7	0	8,098	PBI
		OBL	2005	415	94	15	1	0	0	0	0	2,530	
		SHISHAM	20	12	0	0	0	0	0	0	0	32	
		TOTAL	7554	2058	753	172	71	34	11	7	0	10660	
D 228 Bhunda Shill C1a	0.68	CHIL	1538	101	3	3	5	7	8	10	4	1677	PBI
		OBL	2	1	0	0	0	0	0	0	0	3	
		TOTAL	1538	102	3	3	5	7	8	10	4	1680	
D 228 Bhunda Shill C1b	2.494	CHIL	2996	22	11	12	17	13	11	7	0	3088	PBI
		OBL	2	1	0	0	0	0	0	0	0	3	
		TOTAL	2998	23	11	12	17	13	11	7	0	3092	
D 228 Bhunda Shill C1c	2.78	CHIL	1854	260	220	135	122	43	4	0	0	2638	PBI
		KAIL	3	0	0	0	0	0	0	0	0	3	
		DEODAR	0	0	1	0	0	0	0	0	0	1	
		TOTAL	1857	260	221	135	122	43	4	0	0	2642	
D 228 Bhunda Shill C1d	3.08	CHIL	1829	223	72	47	23	4	0	0	0	2198	PBI
		KAIL	1	1	0	0	0	0	0	0	0	2	
		TOTAL	1830	224	72	47	23	4	0	0	0	2200	
D 228 Bhunda Shill C1e	2.43	CHIL	1259	167	110	42	17	4	3	1	0	1603	PBI
		KAIL	3	2	0	0	0	0	0	0	0	5	

Name & No. of forest	Area ha	Spp.	10-20 cm	20-30 cm	30-40 cm	40-50 cm	50-60 cm	60-70 cm	70-80 cm	80-90 cm	90-100 cm	Total	Allot
Comp.													
		TOTAL	1262	169	110	42	17	4	3	1	0	1608	
D 237 Katanda C1a	35.43	KAIL	1	1	0	0	0	0	0	0	0	2	PB I
		CHIL	758	606	527	568	320	200	100	22	0	3,099	
		BAN	22	18	0	0	0	0	1	0	0	41	
		OBL	170	99	44	13	0	0	0	0	0	326	
		TOTAL	949	724	571	581	320	200	101	22	0	3468	
D 237 Katanda C1c	39.88	CHIL	419	279	268	262	177	101	76	15	0	1,597	PB I
		BAN	130	110	90	86	77	68	49	31	7	648	
		OBL	173	186	119	68	22	19	20	17	16	640	
		TOTAL	722	575	477	416	276	188	145	63	23	2885	
D 237 Katanda C1d	21	KAIL	40	10	23	10	12	3	1	0	0	99	PB I
		CHIL	815	531	736	414	170	81	33	4	0	2,784	
		BAN	205	182	225	93	95	52	67	51	22	992	
		OBL	89	85	81	48	58	40	40	30	7	458	
		TOTAL	1149	788	1065	565	335	176	141	85	29	4333	
D 237 Katanda C1e	31.6	DEODAR	40	20	22	7	4	0	0	0	0	93	PB I
		KAIL	61	47	53	42	55	32	26	4	3	323	
		CHIL	357	449	561	343	106	45	25	6	0	1,892	
		FIR / SPRUCE	4	2	3	0	0	0	0	0	0	9	
		BAN	318	212	183	147	94	80	76	61	5	1,174	
		OBL	210	200	99	3	15	6	1	1	0	535	
		TOTAL	462	518	639	392	165	77	51	10	3	4,026	
D 239 Orail C1b	98.61	CHIL	1570	943	459	401	348	130	36	3	0	3,890	PB I
		BAN	2604	1105	905	505	296	126	59	17	0	5,617	
		OBL	660	289	187	94	46	25	2	0	0	1,283	
		TOTAL	4834	2337	1531	1000	690	281	97	20	0	10790	
D 240 Bahal C1b	10.28	CHIL	1060	292	183	126	4	0	0	0	0	1665	PB I
		DEODAR	13	16	4	4	0	0	0	0	0	37	
		KAIL	13	12	26	15	2	0	0	0	0	68	
		BAN	254	203	126	44	0	0	0	0	0	627	
		OBL	111	4	16	0	0	0	0	0	0	131	
		TOTAL	1451	527	355	189	6	0	0	0	0	2528	
D 240 Bahal C2a	38.01	DEODAR	15	0	0	1	1	2	0	0	0	19	PB I
		KAIL	21	4	2	1	0	0	0	0	0	28	

Name & No. of forest Comp.	Area ha	Spp.	10to20 cm	20-30 cm	30-40 cm	40-50 cm	50-60 cm	60-70 cm	70-80 cm	80-90 cm	90-100 cm	Total	Allot
		CHIL	5397	1354	541	376	153	43	2	0	1	7.867	
		BAN	466	68	9	0	1	1	0	0	0	543	
		OBL	655	260	131	55	2	0	0	0	0	1.103	
		TOTAL	6554	1684	683	433	157	46	2	0	1	9560	
D 240 Bahal C2b	48.64	DEODAR	19	25	11	3	6	3	1	0	0	68	PB I
		KAIL	220	88	86	62	70	60	51	41	18	696	
		CHIL	6083	1969	521	183	217	69	38	11	0	9.091	
		BAN	671	260	16	2	0	0	0	0	0	949	
		OBL	2143	829	290	88	40	48	26	18	6	3.488	
		TOTAL	9136	3171	924	338	333	180	116	70	24	14292	
D 241 Kandloo C1a	8.09	CHIL	557	284	164	193	52	21	6	4	0	1281	PB I
		OBL	3	0	0	0	0	0	0	0	0	3	
		TOTAL	560	284	164	193	52	21	6	4	0	1284	
D 241 Kandloo C1c	13.87	CHIL	876	27	144	161	47	9	2	0	0	1266	PB I
		OBL	2	0	0	0	0	0	0	0	0	2	
		TOTAL	878	27	144	161	47	9	2	0	0	1268	
D 249 Makra C2a	26.73	DEODAR	13	3	2	0	0	0	0	0	0	18	PB I
		KAIL	81	28	21	2	0	0	0	0	0	132	
		CHIL	6373	4386	40	3	0	0	0	0	0	10.802	
		TOTAL	6467	4417	63	5	0	0	0	0	0	10952	
D 249 Makra C2b	41.66	DEODAR	2	0	0	0	0	0	0	0	0	2	PB I
		KAIL	300	73	22	1	0	0	0	0	0	396	
		CHIL	9499	5107	117	2	0	1	1	0	0	14.727	
		BAN	0	0	0	0	0	0	0	0	0	0	
		OBL	10	3	1	0	0	0	0	0	0	14	
		TOTAL	9811	5183	140	3	0	1	1	0	0	15139	
D 252 Naganal C2c	41.15	CHIL	4828	1725	512	536	391	290	24	2	0	8.308	PB I
		OBL	57	14	0	0	0	0	0	0	0	71	
		TOTAL	4885	1739	512	536	391	290	24	2	0	8379	
D 253 Jakhol C3	48.42	KAIL	2	0	0	0	1	0	0	0	0	3	PB I
		CHIL	8785	4875	1445	791	327	214	134	55	14	16.640	
		POPLAR	30	20	0	0	0	0	0	0	0	50	
		OBL	909	345	210	54	0	0	0	0	0	1.518	
		TOTAL	9726	5240	1655	845	328	214	134	55	14	18211	

Name & No. of forest Comp.	Area ha	Spp.	10to20 cm	20-30 cm	30-40 cm	40-50 cm	50-60 cm	60-70 cm	70-80 cm	80-90 cm	90-100 cm	Total	Allot.
D 254 Suran C1	31.8	DEODAR	57	23	16	1	2	0	0	0	1	100	PB I
		KAIL	1088	223	45	58	53	55	74	29	11	1,646	
		CHIL	2407	1028	338	288	307	357	307	56	6	5,092	
		BAN	838	162	60	17	8	5	3	0	0	891	
		OBL	435	278	108	50	24	6	0	0	4	903	
		TOTAL	4633	1710	567	414	394	423	384	85	22	8632	
					CHIL WORKING CIRCLE								
					SERI	RANGE		PB	I				
	Area	Spp.	10to20	20-30	30-40	40-50	50-60	60-70	70-80	80-90	90-100	Total	VOL.M3
	ha		cm	cm	cm	cm	cm	cm	cm	cm	cm		
	607.28	DEODAR	159	87	57	17	13	5	1	0	1	340	154.084
		KAIL	1647	489	278	191	183	150	152	74	32	3406	3315.49
		CHIL	70558	27718	8930	5944	3635	2208	899	225	29	120145	29608.62
		RAI/FIR	4	2	3	0	0	0	0	0	0	8	3.628
		BAN	5304	2318	1814	894	571	332	255	160	34	11482	7534.06
		POPLAR	30	20	0	0	0	0	0	0	0	50	6.17
		SHISHAM	20	12	0	0	0	0	0	0	0	32	3.392
		OBL	7750	3142	1445	489	208	144	89	66	33	13366	3452.636
		TOTAL	85673	33788	12327	7535	4620	2837	1386	525	129	148830	44078.08
					ENUMERATION RESULTS								
					CHIL WORKING CIRCLE								
					SERI	RANGE		PB	II				
Name & No. of forest Comp.	Area ha	Spp.	10to20 cm	20-30 cm	30-40 cm	40-50 cm	50-60 cm	60-70 cm	70-80 cm	80-90 cm	90-100 cm	Total	Allot.
D 219 Ganu C1	10.46	CHIL	329	86	54	39	24	9	10	0	0	551	PB II
		DEODAR	10	0	0	0	0	0	0	0	0	10	
		KAIL	256	114	81	35	8	7	2	0	1	504	
		BAN DAK	612	357	192	57	6	13	11	0	0	1248	
		OBL	339	261	75	95	25	0	0	2	0	797	
		TOTAL	1546	818	402	226	63	28	23	2	1	3110	
D 221 Kauri C2	3.02	CHIL	1402	1349	169	0	1	1	3	1	0	2926	PB II

Name & No. of forest Comp.	Area ha	Spp.	10-20 cm	20-30 cm	30-40 cm	40-50 cm	50-60 cm	60-70 cm	70-80 cm	80-90 cm	90-100 cm	Total		
		OBL	182	40	0	0	0	0	0	0	0	192		
		TOTAL	1554	1389	169	0	1	1	3	1	0	3118		
D 224 Mambli C1	1.42	CHIL	420	40	7	32	35	8	0	0	6	540	PB II	
		DEODAR	5	0	0	0	0	2	1	0	0	8		
		KAIL	24	5	4	15	9	3	2	0	1	63		
		RAINFIR	0	0	0	0	0	1	0	0	0	1		
		TOTAL	449	45	11	47	44	12	3	0	1	612		
D 226 Khadra C2a	4.078	CHIL	589	480	443	310	120	23	13	14	10	2002	PB II	
		DEODAR	191	92	31	32	26	13	14	2	2	403		
		KAIL	26	12	17	17	8	7	5	1	4	97		
		BAN OAK	0	0	0	1	0	0	0	0	0	1		
		OBL	20	4	0	0	0	0	0	0	0	24		
		TOTAL	826	588	491	360	154	43	32	17	16	2527		
D 226 Khadra C2b	3.33	CHIL	1408	173	119	55	37	8	0	0	0	1800	PB II	
		DEODAR	156	2	2	8	5	4	2	0	0	179		
		KAIL	104	1	1	0	0	0	0	0	0	106		
		OBL	3	1	0	0	0	0	0	0	0	4		
		TOTAL	1671	177	122	63	42	12	2	0	0	2089		
D 226 Khadra C3a	3.368	CHIL	949	338	85	21	20	12	20	4	7	1434	PB II	
		KAIL	609	213	50	20	16	18	13	11	10	960		
		BAN OAK	70	72	26	3	1	0	0	0	0	172		
		OBL	101	63	38	8	0	0	0	0	0	210		
		TOTAL	1729	684	179	52	37	30	33	15	17	2776		
D 228 Khadra C3b	7.09	CHIL	764	232	166	67	25	14	1	0	0	1269	PB II	
		DEODAR	25	0	0	0	0	0	0	0	0	25		
		KAIL	831	103	137	122	54	15	1	0	0	1263		
		BAN OAK	17	2	0	0	0	0	0	0	0	19		
		OBL	23	0	0	0	0	0	0	0	0	23		
		TOTAL	1660	337	303	189	79	29	2	0	0	2599		
D 230 Chaber C1	4.27	CHIL	384	93	169	137	54	2	1	1	1	842	PB II	
		TOTAL	384	93	169	137	54	2	1	1	1	842		
D 230 Chaber C2	3.79	CHIL	580	228	238	338	139	59	18	4	2	1608	PB II	
		BAN OAK	1	1	0	1	0	0	0	0	0	3		
		OBL	2	2	1	0	0	0	0	0	0	5		

Name & No. of forest Comp.	Area ha	Spp.	10to20 cm	20-30 cm	30-40 cm	40-50 cm	50-60 cm	60-70 cm	70-80 cm	80-90 cm	90-100 cm	Total	
		TOTAL	583	231	239	133	133	59	18	4	2	1614	
D 233 Chaber C3	9.66	CHIL	3048	445	146	118	91	58	27	4	1	3988	PB II
		DEODAR	204	5	0	0	0	0	0	0	0	209	
		KAIL	281	1	1	0	0	0	0	0	0	283	
		OBL	10	2	1	0	0	0	0	0	0	13	
		TOTAL	3543	453	148	118	91	58	27	4	1	4441	
D 230 Chaber C4	5.57	CHIL	2948	434	183	54	42	31	7	3	1	3703	PB II
		TOTAL	2948	434	183	54	42	31	7	3	1	3703	
D 230 Chaber C5	6.4	CHIL	2214	144	72	54	33	23	1	1	0	2543	PB II
		TOTAL	2214	144	72	54	33	23	2	1	0	2643	
D 231 Shiladhar C1	6.02	CHIL	2575	1118	644	515	386	245	273	74	17	5845	PB II
		OBL	11	3	0	1	0	0	0	0	0	15	
		TOTAL	2586	1119	644	516	386	245	273	74	17	5860	
D 231 Shiladhar C2	7.81	CHIL	2134	1334	778	551	336	312	115	74	23	5655	PB II
		KAIL	25	4	0	0	0	0	0	0	0	29	
		BAN OAK	14	6	0	4	1	1	1	2	0	35	
		OBL	24	6	4	0	0	0	0	0	0	34	
		TOTAL	2197	1350	782	555	337	313	116	76	23	5753	
D 231 Shiladhar C3	11.1	CHIL	2078	881	428	308	262	230	158	41	10	4396	PB II
		DEODAR	1	0	0	0	0	0	0	0	0	1	
		KAIL	478	102	63	32	32	24	21	6	0	756	
		BAN OAK	352	123	62	63	34	4	4	3	0	652	
		OBL	208	104	25	5	3	3	2	0	0	348	
		TOTAL	3113	1210	578	408	331	268	185	50	10	6153	
D 231 Shiladhar C4	2.74	CHIL	803	365	140	52	43	24	21	7	3	1456	PB II
		DEODAR	12	7	0	0	0	1	1	0	0	21	
		BAN OAK	5	4	3	2	0	0	0	0	0	14	
		OBL	12	11	7	0	1	1	0	0	0	32	
		TOTAL	832	387	150	54	44	26	22	7	3	1523	
D 231 Shiladhar C5	6.21	CHIL	3326	988	410	337	205	201	223	44	6	5876	PB II
		DEODAR	4	0	0	0	0	0	0	0	0	4	
		KAIL	11	2	1	0	0	0	0	0	0	14	
		BAN OAK	21	51	13	4	2	1	0	0	0	92	
		OBL	31	12	11	3	1	1	2	0	0	71	

Name & No. of forest Comp.	Area ha	Sp.	10-20 cm	20-30 cm	30-40 cm	40-50 cm	50-60 cm	60-70 cm	70-80 cm	80-90 cm	90-100 cm	Total		
		TOTAL	3393	1055	435	344	292	263	225	44	6	6057		
D 232 Surandha	6.57	CHIL	81	18	37	62	36	11	2	1	0	248	PB II	
C2		KAIL	1194	316	17	11	5	2	0	0	0	1545		
		BAN OAK	26	12	8	1	0	0	0	0	0	47		
		OBL	235	47	17	4	0	0	0	0	0	303		
		TOTAL	1538	393	79	78	41	13	2	1	0	2143		
D 233 Richhani	14.46	CHIL	426	853	937	337	103	13	1	0	0	2670	PB II	
C3a		KAIL	50	17	8	0	1	0	0	0	0	76		
		DEODAR	2	0	0	0	1	0	0	0	0	3		
		BAN OAK	136	85	48	19	6	3	2	0	0	299		
		OBL	120	47	50	20	8	0	0	0	0	245		
		TOTAL	734	1002	1043	376	119	16	3	0	0	3293		
D 233 Richhani	14.51	CHIL	1855	335	254	119	48	11	1	0	0	2624	PB II	
C3b		KAIL	26	4	1	0	0	0	0	0	0	31		
		BAN OAK	24	10	13	8	4	3	0	0	0	62		
		OBL	1	5	2	2	0	0	0	0	0	10		
		TOTAL	1908	355	270	129	52	14	1	0	0	2727		
D 233 Richhani	8.35	CHIL	1117	615	237	85	32	17	13	3	0	2119	PB II	
C3c		KAIL	387	118	57	9	0	0	0	0	0	571		
		BAN OAK	157	75	65	45	26	19	9	6	3	409		
		OBL	17	13	13	4	0	0	0	0	0	47		
		TOTAL	1678	821	376	143	58	36	22	9	3	3146		
D 233 Richhani	6.31	CHIL	1436	725	302	144	33	14	8	3	0	2665	PB II	
C3d		OBL	3	1	0	0	0	0	0	0	0	4		
		TOTAL	1439	726	302	144	33	14	8	3	0	2669		
D 233 Richhani	11.19	CHIL	1309	1127	253	78	36	25	12	6	2	2848	PB II	
C3e		OBL	15	10	8	5	0	0	0	0	0	38		
		TOTAL	1324	1137	261	83	36	25	12	6	2	2886		
D 234 Sundroo C4	5.88	CHIL	150	12	55	34	28	14	12	11	1	316	PB II	
		DEODAR	13	1	1	0	0	0	0	0	0	15		
		KAIL	472	146	156	115	67	42	20	15	24	1057		
		BAN OAK	130	85	51	45	39	14	0	0	1	365		
		OBL	257	161	161	97	20	12	0	0	0	708		
		TOTAL	1022	405	424	291	152	82	32	21	32	2401		

Name & No. of forest	Area ha	Spp.	10to20 cm	20-30 cm	30-40 cm	40-50 cm	50-60 cm	60-70 cm	70-80 cm	80-90 cm	90-100 cm	Total		
Comp.														
D 235 Dhumoo	2.85	CHIL	684	78	158	78	42	22	8	4	3	1075	PB II	
C1a		DEODAR	30	8	8	2	4	2	2	1	0	58		
		KAIL	0	0	0	0	1	0	0	0	0	1		
		BAN OAK	1	0	0	0	0	0	0	0	0	1		
		TOTAL	715	86	167	80	47	24	8	5	3	1135		
D 235 Dhumoo	2.71	CHIL	846	257	223	84	54	14	9	2	1	1490	PB II	
C1b		BAN OAK	0	2	0	1	0	0	0	0	0	3		
		OBL	1	0	0	0	0	0	0	0	0	1		
		TOTAL	847	259	223	85	54	14	9	2	1	1494		
D 235 Dhumoo	3.08	CHIL	729	121	113	82	55	35	17	9	7	1168	PB II	
C3a		OBL	28	2	1	1	0	0	0	0	0	32		
		TOTAL	757	123	114	83	55	35	17	9	7	1200		
D 235 Dhumoo	4.75	CHIL	558	64	63	54	42	43	14	11	6	855	PB II	
C3b		OBL	248	52	14	2	0	0	0	0	0	316		
		TOTAL	806	116	77	56	42	43	14	11	6	1171		
D 235 Dhumoo	3.49	CHIL	630	102	91	121	73	62	42	33	11	1165	PB II	
C4a		OBL	144	44	14	4	0	0	0	0	0	206		
		TOTAL	774	146	105	125	73	62	42	33	11	1371		
D 235 Dhumoo	3.52	CHIL	444	71	61	81	51	33	83	8	5	837	PB II	
C4b		OBL	105	22	6	1	0	0	0	0	0	134		
		TOTAL	549	93	67	82	51	33	83	8	5	971		
D 235 Dhumoo	6.23	CHIL	515	6	1	1	0	0	0	0	0	523	PB II	
C5		DEODAR	153	42	57	61	63	51	52	25	7	511		
		KAIL	152	39	3	5	8	16	22	14	8	267		
		RAI/FIR	0	0	0	0	0	0	1	0	0	1		
		TOTAL	820	87	61	67	71	67	75	39	15	1302		
D 240 Bahal C3b	5.18	CHIL	1568	73	51	63	9	1	0	0	0	1765	PB II	
		DEODAR	4	0	0	0	0	0	0	0	0	4		
		KAIL	32	21	4	0	0	0	0	0	0	57		
		TOTAL	1604	94	55	63	9	1	0	0	0	1826		
D 241 Kandloo	6.33	CHIL	703	319	176	63	7	1	1	2	0	1272	PB II	
C2a		TOTAL	703	319	176	63	7	1	1	2	0	1272		
D 252 Nagana	7.62	CHIL	1803	318	236	167	37	6	2	0	0	2569	PB II	
C2a		KAIL	9	0	0	0	0	0	0	0	0	9		

[illegible]

					ENUMERATION RESULTS									
					CHIL WORKING CIRCLE									
Name & No. of forest Camp.	Area ha	Sp.	10 to 20 cm	20-30 cm	SERI RANGE		PB		IV		80-90 cm	90-100 cm	Total	Allot.
					30-40 cm	40-50 cm	50-60 cm	60-70 cm	70-80 cm	80-90 cm				
D 210 Singh Kuth C2	11.94	KAIL	18	12	7	3	0	0	0	0	0	0	40	PB IV
		CHIL	1925	667	258	108	29	12	0	0	0	0	2,899	
		BAN	27	3	3	0	0	0	0	0	0	0	33	
		OBL	27	2	1	0	0	0	0	0	0	0	30	
		TOTAL	1997	684	269	111	29	12	0	0	0	0	3102	
D 218 Saini C2	45.64	CHIL	6200	793	224	42	21	0	0	0	0	0	7,280	PB IV
		TOTAL	6200	793	224	42	21	0	0	0	0	0	7,280	
D 227 Charog C2a	33.88	DEODAR	1489	394	87	55	60	26	3	1	2	2	2,117	PB IV
		KAIL	5768	1296	185	136	97	43	21	12	3	3	7,561	
		CHIL	3127	631	269	182	82	19	18	2	6	6	4,336	
		BAN	2857	735	326	190	102	41	42	20	19	19	4,332	
		OBL	2479	964	620	107	18	6	3	0	0	0	4,197	
		TOTAL	15720	4020	1487	670	359	135	87	35	30	30	22543	
D 227 Charog C2b	62.71	DEODAR	1722	754	102	50	28	16	7	3	1	1	2,683	PB IV
		KAIL	5078	2311	436	221	233	72	29	22	5	5	8,407	
		CHIL	3801	3071	2641	1128	377	197	17	32	2	2	11,466	
		BAN	1211	372	149	68	61	61	27	21	42	42	2,012	
		OBL	584	335	135	23	5	2	0	0	0	0	1,084	
		TOTAL	12396	6843	3663	1490	704	348	80	78	50	50	25652	
D 227 Charog C3a	20.49	DEODAR	57	46	4	5	7	7	3	0	1	1	130	PB IV
		KAIL	419	166	57	34	21	28	11	8	5	5	749	
		CHIL	1724	1558	1703	716	317	154	91	41	12	12	6,316	
		BAN	55	15	6	4	0	2	0	2	0	0	84	
		TOTAL	2,255	1,785	1,770	759	345	191	105	51	18	18	7,279	
D 227 Charog C3b	40.11	DEODAR	4	12	4	2	2	0	3	8	1	1	36	PB IV
		KAIL	191	187	120	79	47	48	22	9	3	3	706	
		CHIL	4789	3471	3307	1499	972	472	286	162	119	119	15,077	
		TOTAL	4,984	3,670	3,431	1,580	1,021	520	311	179	123	123	15,819	
D 228 Bhunda Shil C3a	17.6	CHIL	1280	277	41	29	22	8	3	0	0	0	1,660	PB IV
		SONLA	78	58	0	0	0	0	0	0	0	0	136	

Name & No. of forest Comp.	Area ha	Spp.	10-20 cm	20-30 cm	30-40 cm	40-50 cm	50-60 cm	60-70 cm	70-80 cm	80-90 cm	90-100 cm	Total	Allot.
		OBL	4812	1502	34	0	2	0	0	0	0	6,350	
		TOTAL	1,368	335	41	29	22	8	3	0	0	1,798	
D 228 Bhunda Shil C3b	13.84	CHIL	4268	875	284	214	190	145	145	81	42	6,004	PB IV
		SHISHAM	50	0	0	0	0	0	0	0	0	50	
		AONLA	87	9	0	0	0	0	0	0	0	76	
		OBL	2816	965	247	112	48	19	2	1	1	4,211	
		TOTAL	7,201	1,849	511	326	238	164	147	82	43	10,341	
D 229 Jachh C3	60.82	DEODAR	308	94	44	71	25	8	9	4	3	566	PB IV
		KAIL	536	196	34	13	1	0	0	0	2	782	
		CHIL	15781	5618	1956	1187	640	441	256	139	113	26,111	
		BAN	2	3	1	0	0	0	0	0	0	6	
		TOTAL	16,627	5,911	2,035	1,251	666	449	265	143	118	27,465	
D 232 Surandha C1	31.45	DEODAR	35	9	0	1	0	1	0	0	0	46	PB IV
		KAIL	7220	1770	264	53	26	8	3	1	0	9,345	
		CHIL	22011	5422	837	238	154	108	72	18	2	28,860	
		BAN	1986	957	447	105	43	12	3	3	8	3,582	
		OBL	669	420	186	26	7	2	1	0	0	1,291	
		TOTAL	31,921	8,578	1,714	423	230	131	79	20	8	43,104	
D 233 Richhani C2a	35.19	KAIL	369	222	72	16	1	0	0	0	0	680	PB IV
		CHIL	4225	2010	1913	488	88	39	9	3	1	8,776	
		BAN	532	394	385	275	116	67	48	20	10	1,847	
		OBL	263	297	203	49	26	5	2	1	1	847	
		TOTAL	5389	2923	2573	828	231	111	59	24	12	12150	
D 233 Richhani C2b	20.96	CHIL	2297	1575	1030	309	86	20	1	0	0	5,318	PB IV
		BAN	817	620	380	215	137	73	35	19	26	2,322	
		OBL	197	219	67	50	19	0	0	0	0	552	
		TOTAL	3311	2414	1477	574	242	93	36	19	26	8192	
D 233 Richhani C2c	22.31	KAIL	54	26	9	1	0	0	0	0	0	90	PB IV
		CHIL	10735	1261	740	283	141	82	24	9	2	13,267	
		BAN	928	926	518	220	79	41	27	12	14	2,783	
		OBL	583	508	229	33	10	8	9	1	1	1,382	
		TOTAL	12298	2721	1496	517	230	131	60	22	17	17492	
D 233 Richhani C2d	72.5	DEODAR	0	1	0	0	0	0	0	0	0	1	PB IV
		KAIL	180	71	12	2	2	0	0	0	0	267	

Name & No. of forest Comp.	Area ha	Spp.	10-20 cm	20-30 cm	30-40 cm	40-50 cm	50-60 cm	60-70 cm	70-80 cm	80-90 cm	90-100 cm	Total	Allot.
		CHIL	41054	5302	1144	478	326	228	117	33	5	48,687	
		BAN	479	319	207	83	13	5	0	0	0	1,086	
		OBL	821	246	112	11	3	1	0	0	0	1,194	
		TOTAL	42534	5939	1475	554	344	234	117	33	5	51235	
D 234 Sundroo C1	20.54	DEODAR	44	7	13	5	5	7	0	2	1	84	PB IV
		KAIL	62	37	28	10	3	3	1	0	0	144	
		CHIL	6281	2496	1321	236	83	34	9	5	4	10,489	
		BAN	21	17	8	1	0	0	0	0	0	47	
		OBL	15	23	13	2	1	0	0	0	0	54	
		TOTAL	6,423	2,580	1,383	254	92	44	10	7	5	10,798	
D 235 Dhumoo C2a	26.51	DEODAR	231	86	71	46	27	6	3	0	0	470	PB IV
		KAIL	3	0	0	0	0	0	0	0	0	3	
		CHIL	17736	5238	1004	191	42	12	10	0	0	24,233	
		OBL	0	2	0	2	0	0	0	0	0	4	
		TOTAL	17,970	5,326	1,075	239	69	18	13	0	0	24,710	
D 235 Dhumoo C2b	31.03	CHIL	4702	2192	1802	802	176	36	6	0	0	9,716	PB IV
		OBL	475	117	24	1	1	0	0	0	0	618	
		TOTAL	5,177	2,309	1,826	803	177	36	6	0	0	10,334	
D 235 Dhumoo C2c	17.14	CHIL	16775	3939	867	274	178	40	16	0	0	22,089	PB IV
		BAN	1	2	0	0	0	0	0	0	0	3	
		OBL	325	280	68	25	2	1	0	0	0	701	
		TOTAL	17,101	4,221	935	299	180	41	16	0	0	22,793	
D 235 Dhumoo C2d	19.68	CHIL	8352	1438	1260	412	52	6	2	0	0	11,522	PB IV
		OBL	64	68	5	0	0	0	0	0	0	137	
		TOTAL	8,416	1,506	1,265	412	52	6	2	0	0	11,659	
D 238 Gadarao C1a	19.11	KAIL	3	1	0	0	0	0	0	0	0	4	PB IV
		CHIL	3819	1215	607	391	290	195	108	11	0	6,636	
		BAN	62	40	23	8	6	5	4	2	0	150	
		OBL	68	36	20	3	0	0	0	0	0	127	
		TOTAL	3952	1292	650	402	296	200	112	13	0	6917	
D 238 Gadarao C1b	34.79	CHIL	3447	815	520	380	399	207	35	15	1	5,827	PB IV
		BAN	204	58	48	54	30	15	4	0	0	413	
		OBL	144	87	70	40	34	9	1	1	0	385	
		TOTAL	3,795	960	646	474	463	231	40	16	1	6,626	

CHIL WORKING CIRCLE													
SERI RANGE PB IV													
Area	Spp.	10to20	20-30	30-40	40-50	50-60	60-70	70-80	80-90	90-100	Total		VOL.M3
ha		cm	cm	cm	cm	cm	cm	cm	cm	cm			
831.9	DEODAR	4193	1498	344	240	156	71	28	18	9	6557		2203.292
	KAIL	23324	8203	2172	1058	1037	925	253	181	18	37171		15153.38
	CHIL	218240	65238	27181	12369	5871	2949	1377	667	323	334215		62135.15
	FIR / SPRUCE	1	0	0	0	0	1	2	0	0	4		15.22
	BAN	10253	5032	2660	1261	591	324	190	99	117	20527		9676.24
	POPLAR	1	1	6	0	0	0	0	0	0	8		3.658
	AONLA	145	67	0	0	0	0	0	0	0	212		23.384
	SHISHAM	50	0	0	0	0	0	0	0	0	50		3.2
	OBL	18106	8056	2949	1069	231	65	18	4	3	30501		6285.79
	TOTAL	274313	88095	35312	15997	7886	4335	1868	969	470	429245		95499.312
ENUMERATION RESULTS													
CHIL WORKING CIRCLE													
MAGROO RANGE PB I													
Name & No. of forest Comp.	Area ha	Spp.	10to20 cm	20-30 cm	30-40 cm	40-50 cm	50-60 cm	60-70 cm	70-80 cm	80-90 cm	90-100 cm	Total	Allot.
D 256 Jagol C1b	24.93	DEODAR	5	0	0	0	0	0	0	0	0	5	PB I
		KAIL	12	0	0	0	0	0	0	0	0	12	
		CHIL	2274	1730	629	489	543	599	321	18	1	6604	
		OBL	254	145	15	0	0	0	0	0	0	414	
		TOTAL	2545	1875	644	489	543	599	321	18	1	7035	
D 258 Bagund C2	6.11	CHIL	1008	0	0	13	20	15	10	5	0	1071	PB I
		OBL	1	0	0	0	0	0	0	0	0	1	
		TOTAL	1009	0	0	13	20	15	10	5	0	1072	

					CHIL WORKING CIRCLE									
					MAGROO RANGE			PB	I					
	Area	Spp.	10to20	20-30	30-40	40-50	50-60	60-70	70-80	80-90	90-100	Total		VOL M3
	ha		cm	cm	cm	cm	cm	cm	cm	cm	cm			
	31.04	DEODAR	5	0	0	0	0	0	0	0	0	5		0.28
		KAIL	12	0	0	0	0	0	0	0	0	12		0.96
		CHIL	3282	1730	629	502	563	614	331	23	1	7875		4794.79
		OBL	255	145	15	0	0	0	0	0	0	415		55.465
		TOTAL	3554	1875	644	502	563	614	331	23	1	8107		4851.5
					ENUMERATION RESULTS									
					CHIL WORKING CIRCLE									
					MAGROO RANGE			PB	II					
Name & No. of forest	Area ha	Spp.	10to20 cm	20-30 cm	30-40 cm	40-50 cm	50-60 cm	60-70 cm	70-80 cm	80-90 cm	90-100 cm	Total	Allot.	
Comp.														
D 256 Jagol C2	11.18	CHIL	1394	193	11	22	29	21	13	0	0	1683	PB II	
		TOTAL	1394	193	11	22	29	21	13	0	0	1683		
D 257 Jagol C1	4.24	DEODAR	361	74	30	10	0	0	0	10	0	485	PB II	
		KAIL	423	93	0	21	0	0	20	0	0	557		
		CHIL	860	570	110	51	56	70	72	43	21	1853		
		TOTAL	1644	737	140	82	56	70	92	53	21	2895		
D 257 Jagol C2	12.38	DEODAR	470	220	43	40	32	20	2	1	0	828	PB II	
		KAIL	510	360	60	20	20	1	10	1	0	982		
		CHIL	822	323	130	150	104	90	91	60	22	1792		
		OBL	50	22	10	0	0	0	0	0	0	82		
		TOTAL	1852	925	243	210	156	111	103	62	22	3684		
D 260 Lotla C2	8.62	DEODAR	374	285	216	225	204	226	204	55	0	1789	PB II	
		KAIL	285	219	204	205	206	208	85	22	2	1436		
		CHIL	7	0	0	0	0	0	0	0	0	7		
		RAJ	5	0	0	0	0	0	0	0	0	5		
		BAN OAK	420	355	295	180	165	127	0	0	0	1542		
		TOTAL	1091	859	715	610	575	561	289	77	2	4779		
D 264 Khaloo W	2.82	DEODAR	285	230	125	86	85	4	0	0	0	815	PB II	
		KAIL	370	228	184	95	84	0	0	0	0	961		
		CHIL	458	240	210	123	84	66	144	105	0	1430		

Name & No. of forest	Area ha	Spp.	10to20 cm	20-30 cm	30-40 cm	40-50 cm	50-60 cm	60-70 cm	70-80 cm	80-90 cm	90-100 cm	Total	Allot.
Comp.													
		BAN OAK	240	180	214	95	5	0	0	0	0	734	
		OBL	165	104	120	35	15	0	0	0	0	439	
		TOTAL	1518	982	853	434	273	70	144	105	0	4379	
					CHIL WORKING CIRCLE								
					MAGROO RANGE			PB	II				
	Area	Spp.	10to20	20-30	30-40	40-50	50-60	60-70	70-80	80-90	90-100	Total	Vol.M3
	ha		cm	cm	cm	cm	cm	cm	cm	cm	cm		
	39.05	DEODAR	1480	809	414	361	321	250	206	66	0	3917	4570.748
		KAIL	1588	900	448	341	310	209	115	23	2	3938	3384.11
		CHIL	3541	1326	461	346	273	247	320	208	43	6765	4398.14
		BAN OAK	660	535	509	275	170	127	0	0	0	2276	1871.63
		OBL	215	126	130	35	15	0	0	0	0	521	177.307
		TOTAL	7494	3696	1962	1358	1089	833	641	297	45	17415	14401.935
					ENUMERATION RESULTS								
					CHIL WORKING CIRCLE								
					MAGROO RANGE			PB	IV				
Name & No. of forest	Area ha	Spp.	10to20 cm	20-30 cm	30-40 cm	40-50 cm	50-60 cm	60-70 cm	70-80 cm	80-90 cm	90-100 cm	Total	Allot.
Comp.													
D 284 Karsaib W	144.15	DEODAR	6080	1919	307	106	53	32	15	9	34	8,555	PB IV
		KAIL	7515	2441	1054	748	651	466	466	164	70	13,575	
		CHIL	7816	3265	1533	1076	849	632	503	165	56	15,695	
		RAI/FIR	7	2	0	0	0	0	0	0	0	9	
		BAN	1547	1021	461	168	34	31	15	7	0	3,284	
		OBL	5772	3458	1779	720	108	19	8	0	2	11,866	
		TOTAL	21418	7627	2894	1930	1553	1130	984	338	160	53,184	
D 290 Plainidhar W	70.66	DEODAR	3317	823	107	20	7	5	6	1	11	4,297	PB IV
		KAIL	2765	629	309	180	179	139	78	18	45	4,342	
		CHIL	6506	1988	729	400	315	203	149	51	47	10,388	
		BAN	541	363	32	30	10	3	0	2	0	981	
		OBL	1543	591	444	333	99	48	54	0	0	3,112	
		TOTAL	14672	4394	1621	963	610	398	287	72	103	23,120	

CHIL WORKING CIRCLE												
MAGROO RANGE												
PB IV												
Area	Spp.	10to20	20-30	30-40	40-50	50-60	60-70	70-80	80-90	90-100	Total	VOLM3
ha		cm	cm	cm	cm	cm	cm	cm	cm	cm		
214.81	DEODAR	9397	2742	414	126	60	37	21	10	45	12852	2387.478
	KAIL	10280	3070	1363	928	830	605	544	182	115	17917	12950.04
	CHIL	14322	5253	2262	1476	1164	835	652	216	103	26283	11263.96
	BAN	2088	1384	493	198	44	34	15	9	0	4265	1437.34
	OBL	7315	4049	2223	1053	207	67	62	0	2	14978	4426.58
	TOTAL	43402	16498	6755	3781	2305	1578	1294	417	265	76295	32465.396
ENUMERATION RESULTS												
PROTECTION WORKING CIRCLE												
KARSOG RANGE												
Name & No.	Area	Spp.	10to20	20-30	30-40	40-50	50-60	60-70	70-80	80-90	90-100	Total
of forest	ha		cm	cm	cm	cm	cm	cm	cm	cm	cm	
Comp.												
D 170 Tikker Karsog	70.24	CHIL	2732	890	491	266	172	83	33	10	0	4677
C2b		DEODAR	35	12	4	7	0	1	0	0	0	60
		KAIL	3511	1677	997	478	268	150	105	10	1	7197
		RAI/FIR	3	3	2	1	0	0	1	0	0	10
		BAN	5454	2176	768	441	338	181	103	54	32	9545
		OBL	2779	1579	640	250	102	35	13	1	3	5402
		TOTAL	14515	6337	2902	1443	878	450	255	75	36	26891
D 173 Dapha C2e	35.77	DEODAR	1705	1000	673	431	220	196	173	19	6	4423
		KAIL	2035	1426	1033	634	365	270	168	12	0	5943
		RAI/FIR	1562	1156	685	512	381	268	160	57	14	4775
		BAN	6136	2320	1394	849	381	278	232	93	50	11733
		OBL	5809	2685	882	320	41	14	10	2	0	9743
		TOTAL	17247	8567	4667	2746	1368	1026	743	183	70	36617
D 173 Dapha C4a	68.78	DEODAR	3675	1617	770	515	370	259	216	16	10	7448
		KAIL	2307	1391	650	513	325	290	207	27	9	5719
		RAI/FIR	933	413	210	122	74	57	31	10	6	1856
		BAN	9756	3530	1478	863	507	298	210	72	32	16746
		OBL	6776	2122	679	270	81	20	22	4	6	9980

Name & No. of forest Comp.	Area ha	Spp.	10to20 cm	20-30 cm	30-40 cm	40-50 cm	50-60 cm	60-70 cm	70-80 cm	80-90 cm	90-100 cm	Total		
		TOTAL	23447	9073	3787	2283	1357	924	688	129	63	41749		
					SERI	RANGE								
D 236 Pathrevi	46.7	CHIL	10	2	3	2	0	0	0	0	0	17		
C1a		DEODAR	60	30	12	10	5	3	2	1	1	124		
		KAIL	610	218	208	145	50	40	60	3	7	1339		
		RAI/FIR	8	5	2	1	1	0	0	0	0	17		
		BAN	725	353	280	400	320	120	120	60	50	2428		
		OBL	101	45	45	45	30	5	1	0	0	227		
		TOTAL	1514	653	548	588	381	164	182	64	58	4152		
D 236 Pathrevi	18.71	CHIL	265	287	281	230	68	33	10	0	0	1154		
C1b		DEODAR	45	20	10	4	4	2	0	0	0	85		
		KAIL	1885	232	155	157	62	39	11	3	1	2545		
		RAI/FIR	0	0	1	4	1	0	0	0	0	6		
		BAN	741	303	354	426	286	170	115	77	54	2526		
		OBL	324	321	318	57	14	10	3	1	1	1049		
		TOTAL	3260	1143	1119	878	435	254	139	81	56	7365		
D 236 Pathrevi	25.4	CHIL	553	234	170	73	29	26	10	7	3	1105		
C1c		DEODAR	5	2	5	1	0	0	0	0	0	13		
		KAIL	513	135	66	35	21	9	0	0	0	771		
		BAN	927	380	268	314	257	163	134	114	153	2710		
		OBL	408	288	207	76	17	2	2	0	0	1000		
		TOTAL	2406	1039	716	499	324	192	146	121	156	5599		
D 236 Pathrevi	41.65	CHIL	728	514	538	388	191	65	94	14	5	2467		
C1d		DEODAR	1201	120	51	35	13	10	3	0	4	1437		
		KAIL	3176	1273	644	281	188	76	27	16	13	5694		
		RAI/FIR	6	1	0	0	1	0	0	0	0	8		
		BAN	5982	2938	1602	1003	729	412	272	205	176	13299		
		OBL	1510	1011	817	239	56	16	2	2	5	3658		
		TOTAL	12583	5857	3652	1946	1178	579	328	237	203	26563		
D 236 Pathrevi	20.9	CHIL	3	2	6	1	1	0	0	0	0	13		
C1e		DEODAR	962	313	210	119	110	50	42	37	35	1878		
		KAIL	1450	488	399	227	94	35	4	4	1	2702		
		RAI/FIR	292	194	169	124	74	46	27	23	22	971		
		BAN	2806	932	446	319	268	165	152	69	73	5030		

Name & No. of forest Comp.	Area ha	Spp.	10-20 cm	20-30 cm	30-40 cm	40-50 cm	50-60 cm	60-70 cm	70-80 cm	80-90 cm	90-100 cm	Total		
		OBL	389	161	147	51	10	4	3	1	1	747		
		TOTAL	5682	2090	1377	841	557	300	228	134	132	11341		
					MAGROD RANGE									
D 261 Ganoob C2	27.37	DEODAR	309	74	25	8	0	2	1	0	0	419		
		KAIL	1967	424	82	129	22	10	6	4	2	2646		
		RAI/TOSH	787	192	78	30	14	12	18	17	16	1164		
		BAN OAK	1835	547	243	191	198	100	106	100	150	3470		
		OBL	2247	715	206	62	30	12	10	7	6	3295		
		TOTAL	7145	1952	634	420	264	136	141	128	174	10994		
D 276 Rachuwar ghar W	14.07	DEODAR	1	0	0	0	0	0	0	0	0	1		
		KAIL	135	64	26	10	8	12	14	4	3	276		
		RAI/TOSH	1837	425	424	334	395	357	404	418	358	4952		
		JAMUN	43	42	27	0	0	3	4	0	0	119		
		WALNUT	1	9	3	0	2	3	18	9	3	48		
		KHANOR	5	2	4	4	21	22	23	13	11	105		
		OBL	35	25	11	3	2	3	1	0	0	80		
		TOTAL	2057	567	495	351	428	400	464	444	375	5581		
D 277 Rachuwar garh C1	10.44	KAIL	375	167	194	36	25	16	13	5	0	831		
		RAI/TOSH	433	177	206	220	227	191	198	104	170	1926		
		TEXUS	94	5	0	0	0	0	0	0	0	99		
		WALNUT	15	5	0	0	0	0	0	0	0	20		
		JAMUN	51	16	0	0	0	0	0	0	0	67		
		BAN OAK	167	102	100	55	25	16	5	0	1	471		
		OBL	45	15	4	0	5	0	0	0	0	69		
		TOTAL	1180	487	504	311	282	223	216	109	171	3483		
D 277 Rachuwar garh C2	13.22	DEODAR	106	113	22	5	0	4	0	0	0	250		
		KAIL	899	493	388	245	212	201	172	104	85	2799		
		RAI/TOSH	767	580	503	466	513	489	544	570	546	4978		
		JAMUN	80	35	20	5	4	0	0	0	0	144		
		BAN OAK	260	130	158	105	0	0	0	0	0	653		
		TOTAL	2112	1351	1091	826	729	694	716	674	631	8824		
D 277 Rachuwar garh C3	13.81	DEODAR	5	4	3	0	0	0	0	0	0	12		
		KAIL	95	35	8	4	7	3	0	1	0	153		
		RAI/TOSH	754	533	294	355	408	335	267	237	145	3328		

Name & No. of forest Comp.	Area ha	Spp.	10to20 cm	20-30 cm	30-40 cm	40-50 cm	50-60 cm	60-70 cm	70-80 cm	80-90 cm	90-100 cm	Total		
		BAN OAK	885	576	304	135	5	0	0	0	0	1805		
		TOTAL	1739	1148	609	494	420	338	267	238	145	5328		
D 293 Sural C2	4	DEODAR	7	3	4	9	1	0	0	0	1	25		
		KAIL	6	9	3	2	3	1	1	0	0	25		
		RAI/FIR	522	335	459	387	261	155	90	72	110	2371		
		TEXUS	121	50	20	4	2	0	0	0	0	197		
		KHANOR	8	2	3	1	1	0	0	0	0	15		
		JAMUN	127	159	55	30	7	2	0	0	0	380		
		WALNUT	15	7	6	9	3	1	0	0	0	41		
		BAN OAK	36	7	2	0	0	0	0	0	0	45		
		OBL	109	15	6	3	10	2	1	1	3	150		
		TOTAL	951	587	558	425	288	161	92	73	114	3249		
D 297 Surahi C2	5.16	DEODAR	12	7	3	4	2	1	2	2	0	33		
		KAIL	3	1	2	0	0	2	0	0	0	8		
		RAI/FIR	147	53	28	18	13	14	8	5	2	288		
		JAMUN	67	28	7	8	1	0	0	0	0	109		
		KHARSU	380	229	82	42	9	7	8	3	1	741		
		OBL	83	75	21	20	1	7	2	1	0	209		
		TOTAL	672	383	143	90	35	31	20	11	3	1388		
					PROTECTION WORKING CIRCLE									
	Area	Spp.	10to20	20-30	30-40	40-50	50-60	60-70	70-80	80-90	90-100	Total		VOL.M3
	ha		cm	cm	cm	cm	cm	cm	cm	cm	cm			
	416.23	DEODAR	8129	3315	1792	1148	725	528	439	75	57	16208		11638.62
		KAIL	18967	8033	4853	2896	1650	1154	768	193	122	38656		24777.57
		RAI/FIR	8051	4067	3061	2554	2343	1924	1748	1513	1389	26650		56330.01
		CHIL	4291	1909	1489	960	461	207	147	31	8	9503		3571.76
		JAMUN	368	280	109	41	12	5	4	0	0	819		233.376
		BAN	35490	14294	7397	5101	3312	1903	1449	844	771	70561		43635.91
		KHARSU	360	229	82	42	9	7	8	3	1	741		369.5
		KHANOR	13	4	7	5	22	22	23	13	11	120		166.657
		W NUT	31	21	9	9	5	4	18	9	3	109		92.293
		TEXUS	215	55	20	4	2	0	0	0	0	296		64.327
		OBL	20595	9037	3983	1396	399	130	70	20	25	35655		8178.239
		TOTAL	96510	41244	22802	14156	8940	5884	4694	2701	2387	199318		149058.26

Annexure-XIII

REGENERATION SURVEY

A. REGENERATION SURVEY MAPS: The instructions for the preparation of regeneration survey maps are as under:-

B. The legends characteristics

1. Area Characteristics:-

Blanks- Plantable	B.I
Unplantable	B.II
Scrub- Plantable	S.I
Unplantable	S.II
Marshy- Plantable	M
Rock outcrop-	O

2. Regeneration Stages:-

Advance Growth (Density 0.7)	A
Recruits (upto 30 cm)	R
Seedling (30 cm to 1 metre)	Sd
Sapling (1 m to 2.4 m)	Sp
Young poles (2.5 m & above)	P

3. Density of Regeneration:-

25 to 50% stocking	D1
50 to 75% stocking	D2
75% & above stocking	D3

B. REGENERATION ASSESSMENT METHODOLOGY:-

1. Density is determined by counting poles, saplings, seedlings and recruits in 10 x 10 metres plots laid at every change of stage or density of regeneration in the strip.

2. For full stocking in a plot of 10 x 10 metres, the number of different stage of regeneration would be as under:-

Species	Young Poles	Saplings	Seedlings	Recruits
Deodar	25(2x2m)	50(1.4x1.4m)	100(1x1m)	100(1x1m)
Kail	12(3x3m)	25(2x2m)	50(1.4x1.4m)	100(1x1m)
Chil	12(3x3m)	25(2x2m)	50(1.4x1.4m)	100(1x1m)
Fir/Spruce	25(2x2m)	50(1.4x1.4m)	100(1x1m)	100(1x1m)

3. The plants occurring at closer spacing than above be is ignored from counting. Where more than one stage occur together, the following formula is used to determine the density percentage.

For full density $R/8 + Sd/4 + SP/2 + P = 12$ or more for Chil & Kail

$R/8 + Sd/4 + Sp/2 + P = 25$ or more for Deodar, Fir/Spruce.

4. Density will be denoted below the stage of regeneration e.g. R/D1 means recruits having a density of 25% to 50% and Sp/D2 denotes saplings having a density of 50% to 75%.

5. The mixture of different stages will be assessed as per formula given and density worked out from poles e.g. $\frac{P \quad SP \quad Sd}{D2}$

Which mean that pole, sapling and seedling stages occur and they total upto density of 25% to 50% when covered into pole stages by the formula.

(Authoritative English Text of this Department notification number FFE-B-E(3)-43/2006-Vol-I dated 2nd January, 2010 as required under clause (3) of article 348 of the constitution of India)

**Government of Himachal Pradesh
Department of Forest.**

No. FFE-B-E(3)-43/2006-Vol-I Dated: Shimla-171002, 2nd January, 2010.

NOTIFICATION

Whereas, the draft Himachal Pradesh Forest (Timber Distribution to the Right Holders) Rules, 2009 were published in the Rajpatra, Himachal Pradesh Extra Ordinary on 14.10.2009 vide Notification of even number dated 13.10.2009 for inviting objections and suggestions from persons likely to be effected thereby within a period of 21 days from the date of publication;

Now, after receipt and analyzing the objections/suggestions received from the concerned parties, in exercise of the powers conferred by clause (L) of section 32 of the Indian Forest Act, 1927 (16 of 1927), the Governor of Himachal Pradesh is pleased to make the following rules namely:-

1.Short title.- These rules shall be called the Himachal Pradesh Forest (Timber Distribution to the Right Holders) Rules, 2010.

2.Definitions.- (1) In these rules, unless the context otherwise requires,-

- (a) 'Government' means the Government of Himachal Pradesh;
- (b) The term 'below poverty line' shall have meaning as assigned to it by the Department of Panchayati Raj, Himachal Pradesh;
- (c) 'Right Holder' means a person entitled to exercise rights recorded in the 'record of rights' as per the Forest Settlement Report of the area concerned;
- (d) 'Record of rights' means, rights recorded in the Forest Settlement Reports;
- (e) 'Timber Distribution' means the policy of distribution of timber to the right holders as per record of rights recorded in the Forest Settlement Reports; and
- (f) 'Timber Distribution Rights' means right of a Right Holder having cultivable lands for grant of timber for construction of residential house and cow shed etc. for bonafide domestic use of the Right Holder, recorded in the Forest Settlement Report of the area concerned,;

(2) All other words and expressions used but not defined in these rules shall have the meaning assigned to them in the Indian Forest Act, 1927.

3. Entitlement.-Timber shall be granted to the Right Holders who have their recorded rights in the concerned Forest Settlement Reports for grant of Timber Distribution for construction/maintenance of residential house, cow sheds etc. for bonafide domestic use:

Provided that:-

- (i) no Timber Distribution shall be granted in urban area;
- (ii) no Timber Distribution shall be granted if trees to meet the requirement of timber for construction of residential house, cowshed etc. are available on the land holdings of the Right Holder concerned. However, he shall have the right to fell trees from his own land as per the provisions of the Himachal Pradesh Land Preservation Act, 1978 and rules made there under;
- (iii) no Timber Distribution shall be granted for 10 years if the right holder has sold trees yielding timber for construction of houses from his private land holding;
- (iv) in case right holder has land holding at more than one place, he shall have option of getting Timber Distribution at one place only. For this purpose a Right Holder shall submit an affidavit clarifying therein his rights of Timber Distribution at different places and his place of option for getting Timber Distribution. Option once exercised shall not be allowed to be changed;
- (v) With effect from the date of notification of these Rules, no Timber Distribution shall be granted to a land owner who has purchased land after obtaining the permission of the Government under section 118 of the Tenancy and Land Reforms Act, 1972, irrespective of the date of purchase of such land.
- (vi) Timber Distribution shall be granted only to the head of the family as per the revenue records;
- (vii) Timber Distribution shall not be granted for the construction/ maintenance of buildings to be used for commercial and hiring purposes;
- (viii) Timber Distribution shall not be granted to the Right Holders, if trees for the purpose are not available silviculturally in the forest where concerned right holders have Timber Distribution right;
- (ix) Timber Distribution Rights shall be subject to cooperation and participation of Right Holders in forest conservancy. In case any Right Holder fails to perform his duties for apprehending offenders, extinguishing fire or commits any forest offence as contained in the Forest Settlement Report, his right of Timber Distribution shall be suspended upto 10 years; and
- (x) Timber Distribution Right of a Right Holder shall be suspended upto 10 years if he is found to have mis-utilized the Timber

Distribution grant or committed any forest offence until he is eligible again for Timber Distribution.

4. Quantity.-(1) Timber Distribution shall be granted in converted form from the depots to be specified separately as per scale fixed below:-

- (i) for construction of new house = 3 cubic meters; and
- (ii) for maintenance = 1 cubic meter.

(2) Timber Distribution shall be given from salvage (fallen, dry standing), silviculturally available green trees in the order of preference.

5. Periodicity. - The periodicity for grant of Timber Distribution to the Right Holders will be as under:-

- (i) for new construction once in life time or 30 years whichever is later;
- (ii) for additions/alterations – once in 15 years; and
- (iii) sufferers of natural calamities/fire sufferers: as per actual requirement as recommended by the Sub Divisional Officer (Civil) and after personal verification by the ACF/DFO concerned subject to the grant not exceeding the maximum limit prescribed under rule-4.

6. Rates. - The rates to be charged from the different types of Right Holders for grant of Timber Distribution will be as under:-

- (i) Right Holders above poverty line- 30% of the rates at which timber is sold by the Himachal Pradesh State Forest Development Corporation Ltd. commercially;
- (ii) Right Holders below poverty line- 10% of the rates at which timber is sold by the Himachal Pradesh State Forest Development Corporation Ltd. Commercially; and
- (iii) Right Holders suffering from natural calamities- Free of cost.

7. Priority for grant of Timber Distribution.- Priority for grant of Timber Distribution shall be given to the Right Holders belonging to Below Poverty Line. Right Holders above poverty line shall be granted Timber Distribution on first come first served basis.

8. Procedure for grant of Timber Distribution.-Application for grant of Timber Distribution, on the form appended to these rules as 'Annexure-I' shall be submitted by Right Holder (s) to the Panchayat concerned after getting necessary remarks from the patwari concerned. The Panchayat after ascertaining genuineness of the requirement of the Right Holders shall pass resolution in the Gram Sabha of the Panchayat indicating actual quantity of requirement of Timber Distribution of the individual (s) concerned. After resolution recommending grant of Timber Distribution is passed by the concerned panchayat, right holders shall submit his Timber

Distribution application to the Forest Guard of the area who shall enter the same in the register maintained for the purpose and issue receipt of the application to the Right Holder. He shall send his recommendations to the Block Officer after ascertaining the genuineness of demand, who in turn shall submit his recommendations to the Range Officer. After receipt of Timber Distribution application from the Range Officer, the Divisional Forest Officer shall take action for sanction of the Timber Distribution after satisfying himself about the genuineness of the requirement and silvicultural availability of trees/timber in the concerned forest and intimate his decision/ Timber Distribution grant to the Right Holder concerned on the proforma appended to these rules as 'Annexure II'. A schedule for grant of Timber Distribution shall be framed and notified for publicity to all panchayats and other functionaries in the Forest Division by the Divisional Forest Officer.

9. Time schedule for grant of Timber Distribution.-The right holders shall apply for grant of Timber Distribution through concerned Panchayat to the concerned forest guard by 31st March of each year. The application shall be processed and Timber Distribution shall be given to eligible right holders between September to December of the year as per procedure under rule -8 and no Timber Distribution shall be granted thereafter for that year.

10. Jurisdiction of the use of Timber:- Timber granted under these rules shall be allowed to be carried within revenue estate without obtaining any permission after affixing of Timber Distribution hammer and if the timber is to be carried out from one estate to another, the Right Holder shall have to obtain a permission from the Range Officer concerned for this purpose. Timber granted shall be utilized by the Right Holder within a period of maximum one year. In case, Timber Distribution grant could not be utilized within the specified period, concerned Divisional Forest Officer shall grant extension for its use based on the genuineness of the case. The Divisional Forest Officer shall ensure through his staff that the Timber Distribution grant is used for the purpose for which it was sanctioned. In case Timber Distribution grant is not utilized during the permissible period, the same may be seized by the Forest Department and the decision taken by the Divisional Forest Officer relating to grant of Timber Distribution shall be final.

11. Depot.- The depots from where Timber Distribution in converted form shall be supplied to the right holders shall be notified by the Divisional Forest Officer every year. Any change during the next year in the place of these depots shall also be notified. These notifications shall be widely circulated up to the Panchayat level by the Divisional Forest Officer.

12. Size and dimensions of Timber Distribution timber.- The Timber Distribution timber shall be converted and sold in different sizes other than standard sizes made by Himachal Pradesh State Forest Development Corporation Ltd. for commercial purpose.

13. Monitoring of data base and checking.- The data regarding details of right holders, options exercised by the right holders, Timber Distribution granted, utilized, etc. shall be maintained and monitored panchayat and range wise by the Divisional

Forest Officer concerned. This data shall further be monitored and evaluated by Chief Conservator of Forests (Monitoring and Evaluation) at Sundernagar and annual report sent to Principal Chief Conservator of Forests, Himachal Pradesh.

14. Penalty and Punishment.- The right holders who,-

- (i) misuse of Timber Distribution for commercial purpose;
 - (ii) sells Timber Distribution;
 - (iii) transports timber outside the jurisdiction of Revenue estate without permission;
 - (iv) utilizes Timber Distribution after the time schedule given in permit has expired; and
 - (v) do not participate in the duties enshrined in the Forest Settlement Report alongwith rights,
- shall be penalized as per relevant provisions of Indian Forest Act, 1927, in addition to suspension of their rights for such period as may be determined by the concerned Divisional Forest Officer.

15. Repeals and savings.- (1) The existing rules, notifications, directions and instructions framed and issued by the Government or Himachal Pradesh Forest Department concerning the Timber Distribution to the Right Holders are hereby repealed and rescinded.

(2) Notwithstanding such repeal or recession any action taken or anything done under the rules so repealed and notifications, directions and instructions framed and issued so rescinded shall be deemed to have been taken or done under the corresponding provisions of these rules.

Form
(See rule-8)

Annexure-I

PROFORMA FOR APPLICATION FOR GRANT OF TIMBER DISTRIBUTION

1.	Name of Applicant.	_____
2.	Occupation	_____
3.	Father's Name	_____
4.	No. of family members	_____
5.	Is the applicant head of family	_____
6.	Village.	_____
7.	Post Office	_____
8.	Tehsil	_____
9.	District	_____
10.	Panchayat	_____
11.	Whether the applicant belongs to 'below poverty line' family. If yes, enclose attested copy of certificate issued by the competent Authority.	_____
12.	Year in which Timber Distribution was earlier granted and quantity/ No. of trees granted.	_____
13.	Purpose for which Timber Distribution required	_____

(whether for new construction of residential house/cowshed or for maintenance)

14. Details of Timber Distribution required :

Specie	Volume in Cubic metro	Name of forest where right exists

15. I, hereby declare that,-

- (i) Timber Distribution requirement is not for construction/maintenance of house located in urban area;
- (ii) Trees to meet the requirement for construction/maintenance of house/cowshed are not available on my land;
- (iii) I have not sold any trees from my land under the 10 year felling programme during the last 10 years;
- (iv) I have land holding at only one place/more than one place i.e. at

An affidavit regarding my option for getting Timber Distribution at _____ has been submitted to the Divisional Forest Officer, _____/enclosed herewith;

- (v) I am the original right holder and also the head of the family;
- (vi) I have not purchased land after obtaining the permission of the Government under Section 118 of the Tenancy and Land Reforms Act, 1972;
- (vii) I shall not use timber granted to me for the purpose of construction/maintenance of house to be used for commercial/hiring purposes;
- (viii) I understand that rights and concessions including Timber Distribution rights are subject to cooperation and participation of right holders in forest conservancy and I shall perform my duties for apprehending forest offenders, extinguishing fire etc. and
- (xi) I shall not misuse the Timber Distribution grant and abide by the rules/instructions of the Forest Department in this regard.

Dated _____

(Signature of applicant)
Name in block letters _____

Verification/report of Panchayat

It is certified that Sh. _____ S/o
Sh. _____ is a permanent resident of village
_____ Mauza _____ and is head of the family. The requirement of timber of the applicant is genuine and he requires _____ Cum of timber for construction/maintenance of his house/cowshed. A copy of resolution passed by the Panchayat in this regard is enclosed.

Dated
Report of Patwari

Seal & Signature of
Pradhan Gram Panchayat

Certified that Sh. _____ S/o
Sh. _____ is a permanent resident of _____
Mauza _____. Applicant is owner of the cultivable land comprising
Khasra number _____ measuring _____ and pays _____ amount of
Rs. _____ per annum as land Revenue and has a right to obtain trees in
T.D. He is the head of the family.

Dated

Signature Halqua Patwari

Report of Forest Guard:

- (i) The applicant has not obtained timber under Timber Distribution for construction of new residential house/cowshed during his life time/for the last 30 years/the applicant has not obtained timber under Timber Distribution for maintenance of residential house/cow shed for the last 15 years.
- (ii) Applicant has not sold any trees from his land during the last ten years under 10 years felling programme.
- (iii) Applicant does not have trees standing on his own private land.
- (iv) The applicant has not caused any loss/damage to forest wealth/encroached forest land and no damage report/FIR/court case relating to any forest offence is pending against him.
- (v) The requirement of timber is on account of _____.
- (vi) The applicant extends full cooperation in protection of the forest.
- (vii) The applicant may be sanctioned _____ cum converted timber of _____ species from _____ depot.
- (viii) Timber recommended for grant in Timber Distribution are silviculturally available in the forest where right of the right holder exists.

Signature
Forest Guard

_____ Beat

Report of Block Officer (Deputy Ranger):

- (i) Certified that the contents of the application and the certificates given by the beat Guard are correct.
- (ii) I have visited and inspected the site of construction of new residential house/cow shed/maintenance of residential house/cow shed, where Timber Distribution grant is proposed to be utilized and also the forest on spot and the applicant may be granted _____ Cum of timber of _____ species in converted form which is silviculturally available from _____ forest.

Signature

Block Officer, _____ Block

Report of Range Officer:

The requirement of the applicant is genuine and he may be granted _____ Cum timber of _____ species from the _____ Depot for which trees are silviculturally available.

Signature _____
Forest Range Officer _____

Sanction by DFO

_____ Cum of timber of _____ species from _____ Depot is hereby granted to the applicant.

Signature _____
Divisional Forest Officer,
_____ Forest Division.

Form
(See rule-8)

Annexure-II

From No.
Himachal Pradesh Forest Department

Divisional Forest Officer,
_____ Forest Division,

To

Sh/Smt _____
Village _____ Post Office _____
Tehsil _____ Dist. _____

Dated _____

Subject: Grant of Timber Distribution

Sir,

Please refer to your application dated _____.

2. Your application for grant of _____ cum timber of _____ species for construction/maintenance of house/cowshed has been considered by the undersigned and it is decided

to sanction TD measuring _____ (cum) of _____ species from _____ Depot for the construction/maintenance of house/cowshed.

The timber shall be lifted from the depot within _____ months from the date of sanction and shall be utilized within _____ months or within the extension granted. If any, otherwise the timber obtained by you in T.D. is liable to be seized.

OR

that your TD application has been considered and rejected on the following grounds:-

Yours faithfully,
Divisional Forest Officer,
_____ Forest Division,

Endst. No.

Dated

Copy forwarded to Range Officer _____ for information and necessary action.

Divisional Forest Officer,
_____ Forest Division,

By Order,

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

Endst. No. FFE-B-E(3)-43/2006-Vol-I Dated: Shimla-171002, 2nd January, 2010.

Copy forwarded for information and necessary action to:

1. All Administrative Secretaries to the Govt. of H.P.
2. The Principal Chief Conservator of Forests, H.P. Shimla-1.
3. The Principal Chief Conservator of Forests, Wildlife, HP/ MD HPSFDC Ltd. Shimla-9
4. All the Addl. Principal CCFs/CCFs and Conservators of Forests/Divisional Forests officers in Himachal Pradesh.
5. All Heads of the Departments in Himachal Pradesh.
6. The Controller, H.P. Printing & Stationery Department Ghora Chowki, Shimla-5 for publication in Rajpatra(Extra ordinary). Five copies of the same be sent to this Department.
7. All the Deputy Commissioners in Himachal Pradesh.
8. The Under Secretary (Finance) to the Govt. of Himachal Pradesh, Shimla-2.
9. The DLR-cum-Deputy Secretary (Law) to the Govt. of H.P. Shimla-171002.
10. Guard file.
11. Spare copies (50).

Sd/-
Deputy Secretary (Forests) to the
Government of Himachal Pradesh

APPENDIX XV

FOREST ROADS & PATHS OF KARSOG FOREST DIVISION

A. FOREST ROADS :

Range	Particulars	Length in Km
Pangna	Approach road to range office Pangna	40 mts.
	Approach road to FRH Tattapani	117 mts.
Karsog	Approach road to division office	150mts.
	Approach road to forest colony, Karsog	200 mts.
	Approach road to range office Karsog	200mts.
	Approach road to I/hut Sanarli	65 mts.
	Approach road to FRH Mahunag	70 mts
	Approach road to I/hut Bagsharh	70 mtrs.
Seri	Approach road to I/hut Katanda	300 mts
	Approach road to range office Seri	200 mts.

B. BRIDLE PATHS :-

Range	Particulars	Length In Km	Year of Constructio n	Cost of Constructio n(Rs.)
Pangna	Shaongi to Talehan	3	1977-78	2,518
	Jachh to Khanendi	10.32		
	Parala Kasout to Shivadehra	8		
	Chittadhatt to Kaneri	2.32		
	Jachh to Sarhi	0.85		
	Sorshan to Khablash	1.70		
	Chamanpur to Sini	1		
	Chindi to Baog	0.56		
	Gartheli to Bakhlumi	0.44		
	Pangna to Masog	0.30		
	Paralakashot to Shal	0.90		
	Dharmour to Bagsharh	0.42		
	Bhamal kufri to Kufitoo	1.50		
	Tattapani to Kidya	0.40		
	Kotidhar to Kutachi	0.57		
	Khanludi to Samtal	14		
	Khulad to Dadal	8		
Karsog	Kothidhar to Shout	13	1956-57	-
	Seri to Kandhl	5	1984-85	1,44,000
	Mamail to Kelodhar	5	-	-
	Sapnot to Bagsharh	4	1977-78	-
	Jong to Garyala	5		
	Bhanera to Saranda	6		
	Mahunag to Chaira	10		
	Mehandali tom Chaira	8		
	Mamail to Bhanera	4		
	Charkufri to Karsog	6		
	Chindi to Karsog	5		
	Bakhrot to Karsog	5		
	Charkufri to Matehal	5		
	Kashout to Mehandli	6		
	Batala behli to Kabagda	6		
	Peharan to Latehri	8		
	Kakahan to Sarkoldhar	8		
	Sanarli to Madog	6		
	Sarkol to Shanthal	5		
	Kandi to Dhamoon	6		
	Mahunag to Sateyola	10		
	Sarteyola to Chaira	5		
	Mehandli to Jong	5		
Seri	Jhongdhar to Shout	7.5	-	-
	Seri to Shout	18	75-76 to 84-	3,78,000

	Khaneori to Shartaee	14	85	
	Seri to Khaneol	10	1961-63	
	Kelodhar to Kotkosh	6		
	Roprinal to Pokhi	5		
	Teban to Gwalpur	10		
	Kelodhar to Mahog	20		
	Sarahan to Asla	20		
Magroo	Mayadhar to Chaura	4	-	-
	Katanda to Thansar	20	1957-59	-
	Mahog to Shawar	10	1963-64	10,878
	Thansar to Seri Narayan	15	-	-
	Khulas to Dhadhal	8	1965-66	-
	Magroogalu to Chhatri	10	-	-
	Magroo to Sarhi	20		
	Gattugala to Chhatri	8		
	Chhatri to Bagra	12		

C. INSPECTION PATHS

Range	Particulars	Length in Km	Year of Construction
Pangna	Dhingchu to Shivadehra	10	1960-61
	Dharmour to Sandral	20	1960-61
Seri	Kelodhar to Mahog via Pokhi, Gwalpur	28	1956-57
Magroo	Dhral to Hamidhar	15	1960-61

APPENDIX XVI
QUINGUINAL PROGRAMME FOR CHECKING OF BOUNDARIES
IN RESPECT OF KARSOG FOREST DIVISION

Year	Range	Demarcated Protected Forests whose boundaries to be checked, boundary pillars repaired/constructed
2012-13, 2017-18 2022-23	Pangna	D 1 Mahog, D 2 Jalaun, D 3 Neand, D 4 Jud, D 5 Maral Dhank, D 6 Panjonu, D 7 Chil Sarahi, D 8 Panjanu, D 9 Suhi, D 10 Kelo Sarahi, D 11 Kail Sarahi, D 12 Bhiyana, D 13 Bahan Nal, D 14 Sadas, D 15 Rakni I to II b, D 16 Chattri Mandi, D 17 Chattri Suket, D 18 Chattri Mandi I, D 19 Shalog C I a to VI, D 20 Hiunge Nal, D 21 Bonas Nal, D 22 Chhadhaini-dent C I to IIC & D 23 Barnog
	Karsog	D 111 Baksar C I a to C II e, D 112 Thaltoo, D 113 Khamaroo C I to C II, D 114 Flandi, D 115 Khamaroo, D 116 Dharmour C I to C II, D 117 Dharmour Alaid C I to C II, D 118 Kot C I to C II, D 119 Meharan C I a to C II f, D 120 Jingal, D 121 Basolti, D 122 Chalot, D 123 Tiker Kapahari, D 124 Kalhauta C I a to C IV, D 125 Dudhali II, D 126 Kashot III, D 127 Kashot, D 128 Kashot II, D 129 Palot & D 130 Manjhu I.
	Seri	D 209 Jaung, D 210 Sinjh Kufri C I to C II, D 211 Sinjh I, D 212 sinjh II, D 213 Nihari Nal C I a to C IV c, D 214 Jhuanjan, D 215 Sirni, D 216 Ganai & D 217 Sanach
	Magroo	D 255 Shagach C I a to C VII, D 256 Jagol C I a to C II, D 257 Jagal C I to C III, D 258 Bagund C I to C II, D 259 Lotala(O) C I a to C VI d, D 260 Lotala(N) C I to C II, D 261 Gurjub C I to C V & D 262 Kathondhar C I a to C IV
2013-14, 2018-19 2023-24	Pangna	D 24 Barnog, D 25 Basundra, D 26 Chohara C I a to IV b, D 27 Mahasu C I to VI b, D 28 Mahasu, D 29 Begli Suket C I & II, D 30 Begli (Mandi), D 31 Dahi, D 32 Sahal, D 33 Kheneog, D 34 Tikkari, D 35 Sanjog C I & II, D 36 Kandhi, D 37 Bhanech, D 38 Bukaran C I to III, D 39 Shill C I & II, D 40 Bajhu C I to III, D 41 Bakhras C I to III, D 42 Charkufri C I & II, D 43 Kaner C I & II & D 44 Katach.
	Karsog	D 131 Parnot, D 132 Manjhu, D 133 Hiru, D 134 Magan, D 134 Magan, D 135 Fafan, D 136 Parlog, D 137 Nagletha, D 138 Bag Bakhari C I a to C III, D 139 Odda C I to C III b, D 140 Dharanda, D 141 Thanger, D 142 Bilasoo C I to C II, D 143 Kandhi Dnech, D 144 Kashmir, D 145 Kashmair III, D 146 Kashmair II, D 147 Kashmalr IV, D 148 Kariani C I to C II, D 149 Chandu & D 150 Jhau Parala C I a to C II b.
	Seri	D 218 Sainjali C I to C II, D 219 Ganu C I to C II, D 220 Paro C I to C II, D 221 Kajauni C I to C II, D 222 Pog C I to C V, D 223 Tundal Balh, D 224 Mumblu C I to C V, D 225 Dhamoon C I to C III b, D 226 Khadra C I to C V b & D 227 Charog C I to C III b
	Magroo	D 263 Kathaun dhar, D 264 (N)Khatoo, D 265 (O)Khatoo C I to C II, D 266 Lalari shill C I to C III, D 267 Sagoradhar C I to C II, D 268 Janehar C I to C II, D 269 Kalanju C I to C II, D 270 Ruhmani C I to C III

2014-15, 2019-20 2024-25	Pangna	D 45 Sundrahal, D 46 Frash, D 47 Chhaj, D 48 Mashog, D 49 Kotbehal I, D 50 Kotbehal II, D 51 Kot behal III, D 52 KotBahal, D 53 Kotbehal IV C I & II, D 54 Sarai, D 55 Janol, D 56 Kradal C I & II, D 57 Narota Nagra, D 58 Dharmour C I to III, D 59 Dharmour, D 60 Himri, D 61 Shorshan C I to III, D 62 Kuns C I to III, D 63 Paniaru, D 64 Salana Dogon, D 65 Salanadagoh, D 66 Salalana Dagoh II,
	Karsog	D 151 Karadal, D 152 Marndhi C I to C II, D 153 Dharanda C I to C II, D 154 Magheri, D 155 Batahali, D 156 Kandha I, D 157 Kandha II, D 158 Kufridhar, D 159 Saned, D 160 Chalaunhi, D 161 Dumel C I to C II, D 162 Kanjol C I to C III, D 163 Kot, D 164 Mashogra, D 165 Chandhi C I to C II, D 166 Chakranth C I to C III, D 167 Bajhu C I to C V, D 168 Nava, D 169 Tiker Karsog (N), D 170 Tiker Karsog C I a to C IV c
	Seri	D 228 Bhunda Shill C I a to C III b, D 229 Jachh C I to C III, D 230 Chabor C I to C V, D 231 Shiladhar C I to C V, D 232 Surandha C I to C III, D 233 Richhni C I a to C III e, D 234 Sundroo C I to C V b, D 235 Dhurmoo C I a to C V & D 236 Pathrevl C I a to C IV b
	Magroo	D 271 Ruhmani, D 272 Lahair, D 273 Lassl, D 274 Chattri, D 275 Kathnallo, D 276 Rachuwar Gahar, D 277 Rachuwar Gahar C I to C III, D 278 Nadun
2015-16, 2020-21 2025-26	Pangna	D 67 Thuhadhar C I to III, D 68 Udhmoo C I & II, D 69 Shill Badyar II, D 70 Shil Badyar I, D 71 Shill Badyar C I a to II, D 72 Reshtadhar C I a to IV f, D 73 Gherlohal C I & II, D 74 Perbain, D 75 Chatker, D 76 Kapdyas, D 77 Gurju Dhar, D 78 Kandha C I & II, D 79 Mohuru Dhak C I & II, D 80 Kandha, D 81 Bag, D 82 Devikot C I & II, D 83 Mandap, D 84 Alias, D 85 Taraur C I & II, D 86 Lochad C I & II, D 87 Saran, D 88 Chanyana,
	Karsog	D 171 Dopha-II C I to C VIII, D 172 Dopha-I C I to C VII, D 173 Dopha C I a to C IV g, D 174 Punipeheran, D 175 Pehran C I a to C II c, D 176 Ghaliach C I to C III, D 177 Nehra, D 178 Badharu, D 179 Mamail dhar, D 180 Tkri dhar C I a to C II b, D 181 Sanahdhar C I to C IV, D 182 Shill C I a to C II b, D 183 Mahadev ki Banoni C I a to C II, D 184 Mahadev ki Banoni I, D 185 Mahadev ki Banoni II, D 186 Kelodhar Sarnda C I to C III, D 187 Kelodhar Suranda C I to C IV b, D 188 Kandhi C I to C V b, D 189 Kandhi & D 190 Bagh I
	Seri	D 237 Katanda C I a to C II d, D 238 Gadaron C I a to C II b, D 239 Drail C I a to C II b, D 240 Bahal C I a to C IV b, D 241 Kandloo C I a to C III b, D 242 Buna, D 243 Kot Dhar, D 244 Kot Kumarla & D 245 Firno C I to C II
	Magroo	D 279 Nadaun I C I to C II, D 280 Nadaun II, D 281 Chha Nal C I to C II, D 282 Choura, D 283 Raidhar, D 284 Karsain bir, D 285 Chaplandl, D 286 Lather shill & D 287 Hall (O)

2016-17, 2021-22 2026-27	Pangna	D 89 Mohta II, D 90 Mohta I, D 91 Balinghi, D 92 Sarour, D 93 Thogi, D 94 Tatapani, D 95 Jeori, D 96 Sajh, D 97 Seri Sarv, D 98 Kidya, D 99 Braiker, D 100 Ghangoor, D 101 Nando, D 102 Telehan C I a to IV, D 103 Telhan, D 104 Vesta, D 105 Khadehan, D 106 Bhaura, D 107 Guma, D 108 Dudhall I, D 109 Ghaula & D 110 Ghaula C I to VI
	Karsog	D 191 Bagh II, D 192 Bajh, D 193 Katach C I to C III, D 194 Bheron Shill, D 195 Bhagyar, D 196 Kufridhar, D 197 Karol, D 198 Dhanyara I, D 199 Dhanyara II, D 200 Boh Parala, D 201 Agli Dhar, D 202 Parla Dhartoo C I to C IV, D 203 Thach C I to C II, D 204 Shunahu, D 205 Sartl, D 206 Pabo, D 207 Gandhoi C I to C II & D 208 Majhood C I a to C II
	Seri	D 246 Chaura, D 247 Sarahan C I to C III, D 248 Faneata C I to C II, D 249 Makra C I a to C III b, D 250 Bagridhar, D 251 Kavori, D 252 Nagana! C I a to C II c, D 253 Jakhol C I to C III & D 254 Sushan C I to C IV
	Magroo	D 288 Hall (N), D 289 Ghanidhar, D 290 Planidhar, D 291 Phaidhar C I to C II, D 292 Siri naryan C I to C II, D 293 Sural C I to C II, D 294 Danot, D 295 Sainj, D 296 Balhi shill C I to C III & D 297 Surahi C I to C III

APPENDIX XVII

EXTRACTION OF RESIN BY RILL METHOD

Since the inception of Resin taping from pine trees the method adopted for resin extraction was French "Lip and Cup" method. As experience reveals this technique, primarily due to unscrupulous working on the part of the tappers, proved to be harmful for Chir pine Forests.

This damaging trend prompted the development of an improved method which is commonly known as "Rill Method Technique" evolved at Forest Research Institute, Dehradun.

Important features of this technique are summarized as under: -

1. The guide provided in freshening knife controls the depth of blazes to 2 mm in live bark and sapwood. This eliminates the damage to the heartwood.
2. Fast healing up of shallow blazes will make it possible to tap the trees for second cycle thereby increasing the taping life of a tree.
3. The essential use of stimulant will facilitate a prolonged tapping season resulting in increased resin production and employment to the tappers for almost the whole year.
4. About 25 percent more yield of resin per tree per season.
5. There being practically no crape resin, the loss of turpentine is negligible.

To make it a comprehensive note for easy understanding of the field staff this technique is described step-wise as under: -

(1) SETTING UP DURING FIRST YEAR:

STEP-1: SHAVING THE BARK:

With the help of the bark-shaver remove the loose and rough bark over a surface area of about 45cm.x30 cm. leaving a space of about 15cm. from ground level. The surface should be made fairly smooth and thickness of the bark left should not more than 2 mm to facilitate freshening of the blaze. At this stage no crevices are left in the bark and it is reddish in colour. To save costs it is preferable to remove the bark over the surface area to be covered in two years.

STEP-2: MARKING THE POSITION OF THE BLAZE AND GROOVE:

Put the blaze frame on the stem in the vertical position so that the lowest point of the frame is 15cm above the ground level and mark the position of the blaze with marking gauge. Also mark the position of the central groove with the help of the wooden board and marking gauge.

STEP-3 : CUTTING THE CENTRAL GROOVE:

Cut the central groove with the help of the groove cutter, drawing the cutting tool from above downwards. During first year tapping when the blaze is very close to the ground level, it becomes necessary to cut the groove by moving the tool from down upwards. However in subsequent year the groove may be cut from top of the blaze downwards.

STEP-4 : FIXING THE LIP :

The lip should be fixed to the tree with two bullock shoe nails. Pound the lip properly so that it fits snugly against the tree. A 5 cm long wire nail should be driven into the tree about 2 cm below the mid point of the lip for hanging the collection pot on it. The nail should be driven at a slight angle so that the pot hangs snugly against the tree.

STEP-5 : FRESHENING :

For freshening a blaze the tapper should stand near the tree on one side of the blaze and hold the freshening knife at the lowest points of the central groove. Then the knife should be pulled by the tapper along the blaze line marked on the tree. The same operation should be repeated on the other side of the groove. For second and subsequent freshening which are repeated at weekly interval the guide of the freshening knife should move touching the upper side of the

previous rill. The rills should be parallel to each other and should neither extend beyond the limits of the blaze nor fall short of it. Similarly equal space should be left between consecutive rills. The average width of the bark left between consecutive rills is 5 mm and the average width of the rill is 6 mm. The blaze attains a height of 35 to 38 cm. in one season of tapping. The depth of the rills is about 2 mm into the wood.

STEP-6 : TREATING THE BLAZE WITH STIMULANT:

After making a freshening on both areas of the blaze, the chemical stimulant should be sprayed on the freshly cut rill by squeezing the plastic bottle and moving its nozzle in a steady motion along the rill. For obtaining good spray the plastic bottle should be held at 45° angle to the tree and its nozzle should be kept about 3 to 5 cm. away from it. Enough acid should be sprayed on the rill. The acid should be discharged from the bottle in the form of a spray. Precaution should be taken to hang the pot on the nail only after the extra acid has run down the lip.

STEP-7 : COLLECTION OF RESIN AND CLEANING OF GROVE :

The pot should be removed from the tree and the resin should be poured into collection can (Balti). The resin still adhering to the pot should be removed with the help of the scraper. Central groove should also be cleaned with each collection with groove cleaner to avoid accumulation of resin it. For improving labour output collection of resin from the pots should be done with alternate freshening in March-April and August to October. If necessary, the pots of bigger size may be used. However, from May to July, collection may be done with each freshening.

STEP-8 : CLEANING OF LIPS AND POTS :

At the end of tapping season the nails should be pulled out and lips removed. The lips and pots should be washed with warm water containing washing soda.

(2). INSTALLATION DURING SUBSEQUENT YEARS:

For installation during second year of tapping the position of the blaze is marked above the top of first blaze and other operations of first year are repeated. After tapping for two years the blaze reaches a height at which it is not possible to pull the freshening knife upwards. Hence during third year freshening is given by pushing the freshening knife upwards (from the central groove towards the outer edge of the blaze). Like this the blaze is extended upwards for four years. During fifth year it may be necessary to use a ladder particularly in the hills. During sixth year of tapping, a new blaze is made at the bottom of the trees in the same manner as in first year, leaving 7.5 cm wide space along the girth of the tree from the edge of the first blaze. It will be worthwhile for the field staff to know about the tools required by each labourer engaged on resin tapping work which are enumerated as under:

1. Bark shaver; 2. Blaze frame; 3. Spray bottle; 4. Pot; 5. Hammer-cum-nail puller; 6. Pot scraper-cum-groove cleaner; 7. Groove cutter; 8. Lips; 9. Freshening knife; 10. Marking gauge (Kanghi); 11. Bullock shoe nails (2cm long); 12. Wire nails (5cm long); 13. Collection can (Balti).

Besides the above tools, preparation of stimulant is also mentioned below: -

The stimulant used on the blazes is a 20 percent solution of the mixture of sulphuric and nitric acids mixed in equal proportion w/w. To prepare the solution take 875ml. of concentrated sulphuric acid little by little with constant stirring. Then add 70ml. of nitric acid. Precaution should be taken to add the acids to water slowly and in no case water should be added to the concentrated acids.

Pour the solution in the spray bottle to fill it up- to tow-third of its capacity.
Never fill the bottle to full capacity.

APPENDIX XVIII

Monitoring of Resin Tapping and Penalties (Rajiv Kumar IFS)

Under resin tapping by Rill method, the following operations are undertaken:

1. Crop Setting

The crop is set in the months of February- March and is to be completed by 15th March of each year. The crop setting involves the marking out the area to be tapped with a blaze frame, shaving the bark in the marked area and fixing the cup & lip. The dimensions are given below:

⊙ Marking the size of blaze

- › Bark shaving area = 45x30 cm
- › Bark to be left in the shaved area = 2mm

2. Resin production and collection:

The resin production begins when the first pair of rill is carved into the blaze. The following operations are undertaken; (i) half of central groove is carved (ii) pair of rills is carved. The dimensions of various components of the blaze are given below:

⊙ Size of blaze

- › Length = 38 cm
- › Width = 20 cm
- › Width of bark between rills = 5 mm

⊙ Size of rill

- › Average width of rills = 6-7mm
- › Depth of rill = 2 mm
- › Number of rills in a season = 32

⊙ Angle of rill

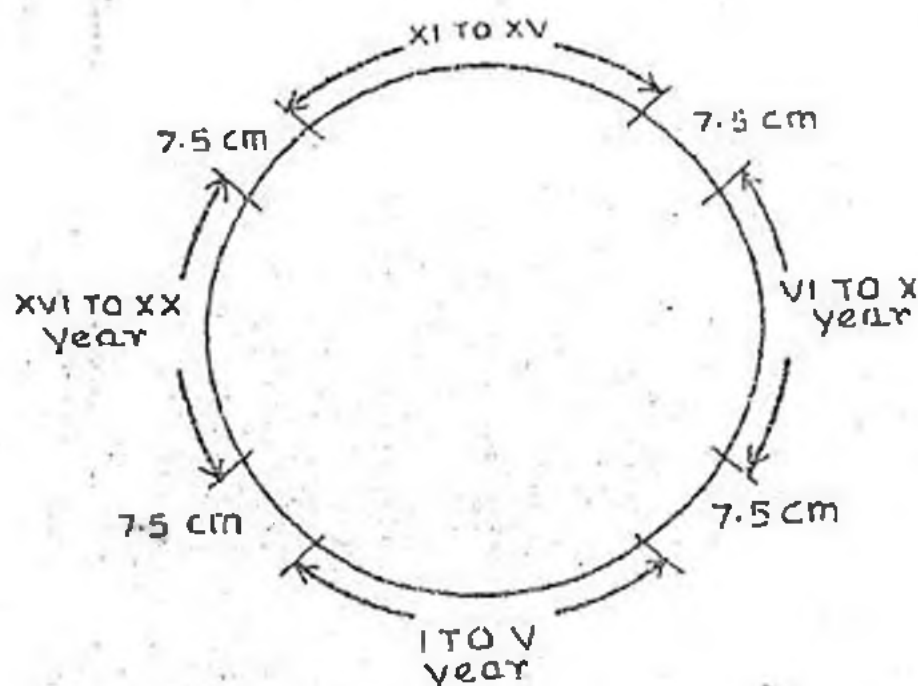
- › Angle of rill with central groove = 40°

3. Trees that are to be tapped

The chil trees that are to be tapped should have clean straight boles. Leaning/ crooked/ malformed/ twisted grain trees should not be enumerated for tapping. Trees that were under the French cup & lip method earlier and have not recovered completely should not be enumerated. Trees above 35 cm d.b.h are to be enumerated for tapping. A tree of 35 cm d.b.h and above is capable of being continuously tapped for 20 years as illustrated in Figure 1 below. This tree will have 4 channels of 5 blazes each. The distance between each channel should be kept at minimum of 7.5 cm. The distance between two linear successive blazes should be kept at maximum of 5 cm.

ie figure

Figure 1



4. Resetting of crop affected by fire:

In case of light surface fire, the blazes may appear charred and flow of resin stops temporarily in the current season. To prevent loss of revenue, a new blaze is set up in the adjoining channel (if space is available) at the bottom. The new channel will have thirty two minus the rills tapped till fire, thus completing thirty two rills in the two blazes (one affected by fire and the new one combined together). In the next season, the old fire affected blaze is continued till 32 rills are made and remaining rills are made in the new blaze started after fire in the previous season always maintaining the formula of tapping only 32 rills in the entire tapping season. This prevents loss of revenue and optimum utilization of space.

5. Penalties for illegal and wrongful tapping:

The Pricing Committee has determined the following penalties to be paid (to be had by way of raising of annual damage bills):

⊙ Rills from 33-40	Rs. 3/- per rill
⊙ Rills from 41-50	Rs. 50/- per rill
⊙ Rills 51 & above	Rs. 100/- per rill
⊙ Width above 23 cm	Rs. 10/- per blaze
⊙ Illicit blaze	Rs. 100/- per blaze
⊙ Guide not used	Rs. 10/- per offence
⊙ Acid of higher concentration.	Rs. 500/- per offence*

*This is very difficult to check and establish in field conditions.

The following penalties should also be prescribed to maintain health of trees (to curb girdling)

- (i) Use of guide- Rs. 10/- per tree
- (ii) Not maintaining distance of 7.5 cm between two channels- Rs. 5000/- per tree
- (iii) Improper crop setting (blaze frame/ bark shaver not used)- Rs. 50/- per tree
- (iv) Exceeding distance of 5 cm between two linear blazes- Rs. 50/- per blaze plus royalty of one blaze
- (v) Non linear tapping- Rs. 50/- per tree plus royalty of three blazes

Some common DO's and DON'Ts

Sl.	Dos	DON'Ts
1	Blaze frame to be invariably used at the time of crop setting.	Blaze not to be marked by guesswork.
2	Bark shaver to be used for removing bark and exposing live cambium.	Use of axe/ other cutting tool for bark shaving prohibited.
3	Central groove to be carved with the grove cutter.	Use of rill freshening knife/ other tool to carve central groove prohibited.
4	Freshening knife with guide to be used for making rills.	Freshening knife without guide prohibited.
5	Angle of rill to the central groove to be 40°	Higher or lower angle not permitted.
6	In case of fire, a new blaze is set up in the adjoining channel.	Never allow a new blaze to be set up at the top of the fire affected blaze.
7	Five blazes should be tapped in a straight channel	Tapping four blazes leads to permanent loss of revenue.
8	Linear distance between two channels should be kept at 7.5 cm to prevent girdling of trees	Never allow distance between two channels to reduce to less than 7.5 cm
9	Linear distance between two blazes in a channel should be kept at 5 cm maximum to prevent wastage of tappable space	Do not allow distance to increase beyond reasonable limit

APPENDIX- XIX
HIMACHAL PRADESH GOVERNMENT
(Forest Department)
NOTIFICATION

No. Ft.29-241-BB/49

Dated Simla-4, the 25th February, 1952

In exercise of the powers conferred by Section 29 of the Indian Forest Act(XVI of 1927) as applied to Himachal Pradesh, read with the Government of India, Ministry of States Notification No. 146-J dated the 6th December, 1950, the Chief Commissioner, Himachal Pradesh is pleased to declare the provisions of Chapter IV of the Act applicable to all forest lands or waste lands in Himachal Pradesh which are the property of Govt. or over which the Government have proprietary rights or to the whole or any part of the produce of which the Government is entitled as recorded in the Forest Settlements or land revenue settlements or land records of the integrated states or otherwise, except to the following areas:-

1. Rantu, Saliana, Chambi Kuper, Kalala and Tomru of Kotkhai ilaqa and Nagkelu of Kotgarh ilaqa declared as reserve forests in the Punjab Govt. Notification No. 175 dated 15th April, 1885.
2. Chamba State Forests declared reserved vide Chamba Darbar's Notification No. W-76-43 dated the 10th November, 1943.

Sirmur State Forests declared reserved in Sirmur Darbar's Notifications:-

1. No. 1 dated the 17th Jaith 1968 Bikrami.
 2. No. 2 dated the 23rd Chait, 1991 Bikrami.
 3. No. 14 dated the 17th Sawan, 1990 Bikrami.
 4. No.38 dated 27.12.1992 Bikrami.
 5. No.nil dated 1st Chait, 1937 Bikrami.
 6. No. nil dated 1st Chait, 1947 Bikrami.
 7. No.11 dated 2nd Poh, 1941 Bikrami.
 8. No. 1 dated 17th Jalth, 1952 Bikrami.
 9. No. Nil dated 11th Bhadon, 1992 Bikrami.
2. This notification applies to all lands in Old Mandi State containing the growth except such lands as have been excluded in the forest settlement as cultivated or as in the Malguzari of a private person.

By Order

Sd/

CCF and Secretary(Forest Department) to the
Chief Commissioner, Himachal Pradesh Admn.

No. Ft.29-241-BB/49 dated Simla-4, the February, 1952.

Copy forwarded to :-

- 1.All Deputy Commissioners in Himachal Pradesh.
- 2.All Conservators of Forests in Himachal Pradesh.
- 3.All Divisional Forest Officers in Himachal Pradesh for Information.
- 4.The Manager, Government of India Press, Simla for favour of publication in part III Section 3 of Government of India Gazette.

Sd/

CCF and Secretary(Forest Department) to
the Chief Commissioner, Himachal Pradesh Admn.

APPENDIX - XX
HIMACHAL PRADESH GOVERNMENT
(Forest Department)
NOTIFICATION
No. Ft.43-241-BB/49
Dated Simla-4, the 25th February, 1952

In exercise of the powers conferred by Section 32 of the Indian Forest Act (XVI of 1927) as applied to Himachal Pradesh, read with the Government of India, Ministry of States Notification No. 146-J dated the 6th December, 1950, the Chief Commissioner, Himachal Pradesh is pleased to make the following rules to regulate the following matters in the areas situated in the Old Mandi State and declared as protected forests in Himachal Pradesh Government Notification No. Ft.29-241-BB/49 dated the 25th February, 1952.

R U L E S

1. In these rules unless there is something repugnant in the subject or context :-
 - "Demarcated Forests" mean all areas which have been permanently demarcated on the ground and as mentioned in schedule I of this notification.
 - "Undemarcated Forests" mean areas other than demarcated forests and include waste lands and such grass lands as contain trees in which malguzari rights have not been recognized and included in Schedule II of this notification.
 - "Forest Officer" means the Officer Incharge of Mandi and Nachan Forest Divisions as the case may be.
 - "Record of rights" means the record prepared and entered in the Forest Settlement Report of Mandi State of 1917.
 - "Right-holders" mean persons entitled to exercise rights recorded on the record of rights. "Trees", "Timber", "Cattle" and "Forest Produce" have the same meanings as in the Indian Forest Act, XVI of 1927.
2. Except where expressly stated to the contrary these rules apply to the protected forests of both the classes.
3. Breaking up of land for cultivation or for any other purpose is prohibited in demarcated forests but may be permitted by competent authority in the undemarcated forests subject to such rules that may be prescribed.
4. In the demarcated forests, the following acts are prohibited except with the permission of the Forest Officer or by an officer duly authorized by him to grant such permission.
 - I) Felling of green trees except for the purpose of burning the dead.
 - II) Carrying of an axe into the forest except for the purpose of cutting firewood for burning the dead.
 - III) Lopping of trees with a darat fastened its handle with more than one nail.
 - IV) Permission to cut for agricultural instruments in the undemarcated forests be given by the local forest guard.
5. Lighting a fire or to carry a lighted torch in any forest from 1st Chait until 1st of sawan and from the 15th Bhadon until the 15th of Manghar is prohibited. Burning of charcoal is prohibited within a 100 paces of any forest except with the permission of the Forest Officer. Any person wishing to burn grass, woods or other cut material on land within a hundred yards of any forest, shall collect such material into heaps and burn it in such a way that the forest is in no way endangered and shall take all precautions to ensure that the fire does not spread to the forest.

6. In the demarcated forests, the malguzars of cultivated and assessed to land revenue, of which the revenue is assigned and their agricultural tenants are allowed to exercise such bartans as have been recorded in their favour in the localities specified and to the extent in the record of rights, such exercise except where otherwise stated being for their own domestic and agricultural purposes and not for sale or barter and subject to the regulations and prohibitions contained in this notification.

7. Right holders may graze such cattle as are kept for their domestic and agricultural purposes subject to such restrictions as may be ordered by a competent authority from time to time.

8. Right holders may cut brushwood and thorny shrubs without permission and may collect fallen coniferous needles for bedding for cattle and manure subject to Rule 4 above.

9. Right holders may collect dry and fallen wood and felling refuge for firewood and to remove all dry standing or fallen trees except Deodar and Kail provided no such trees may be removed without permission from any area which has been burnt within two years.

10. Right holders may lop trees of broad leaved species for fodder and bedding for cattle for domestic and agricultural requirements but not for pastoral pursuits provided that :-

"No tree under 2 feet in girth will be lopped and no tree shall be lopped to a height exceeding 2/3 of the height from ground level".

11. Right holders may cut grass without permission.

12. Right holders may collect fruits, edible seeds, flowers, medicinal roots and leaves, roots for the preparation of dyes and honey for their own use and for sale, unless otherwise provided in the Mandi Minor Forest Products Exploitation and Exports Act.

13. Right holders may collect nirgal bamboos without permission.

14. Right holders may cut and collect torchwood and extract resin without permission from

- i) all dry standing trees except Deodar.
- ii) all green and dry fallen trees except Deodar.
- iii) malformed pine trees especially marked for the purpose.
- iv) stumps of all felled trees provided the marks applied by the Forest Officer are left intact.

15. Right holders may extract and collect slates from quarries existing in 1917 and to sell the same as provided in the record of rights subject to the condition no damage is done to trees under notification No. Ft.29-241-BC/49 dated the 25th February, 1952.

16. Right holders may without permission cut and remove for burning the dead 2 trees not more than one hath in girth at 4'-6' from the ground for the construction of biers and for cremation respectively, provided that Deodar may be used only in places where other species of trees are not available and oak and other species of trees are used wherever possible, though a few small branches of Deodar may be mixed with the fuel where Deodar is available. Notice of all fellings made will be given to the Forest Guard or Rakha within 15 days.

17. Right holders may without permission collect earth for plastering purposes and stone for building purposes and sell the same within the limits of old Mandi state.

18. Right holders may without permission cut oak and other broad leaved trees for preparation of ploughs and other agricultural implements and conifers not exceeding one hath in girth at 4'-6' from the ground for plough handles and rick poles.

19. Right holders may without permission lop Spruce and Silver Fir for manure, litter and firewood and Spruce, Silver Fir and Chil pine for the manufacture and repair of agricultural implements provided that no tree under 2 haths in girth at 4'-6' from the ground is lopped and the lopping is restricted to the lower half of the tree.

20. Right holders may remove the bark of broad leaved trees for tanning provided that debarking is done in such a way that the life of the tree is not endangered and to remove the bark of such coniferous trees as are marked by the Forest Officer for felling.

21. The rights as admitted for demarcated forests above may be exercised in the undemarcated forests by the malguzars of cultivated land assessed to land revenue or of which the revenue is assigned and their agricultural tenants without permission provided the recognized customs and usages (given in the Forest Settlement Report, 1917) of the right holders are not interfered with.

22. The rights enumerated as 12 and 15 above shall not be transferable to any individual or company.

23. The rights of user are limited to the agricultural and domestic requirements. The sale of forest produce by right-holders except wild fruits, flowers, medicinal roots, honey, slate, fuel grass, torches, bamboos at paraos, stone earth and agricultural implements is prohibited. Rights of user will be exercised in regard to the village for which it is recorded and timber granted to a right-holder shall be used only in that village.

24. Trees granted under permit shall not be cut until marked by the Forest Officer and the removal of timber shall take place within the time specified in the permit failing which the timber shall be confiscated unless the period of permit is extended by the Forest Officer.

25. The Gaddles and Gujjars going to and from their runs shall pass through either of the following forest chowkies:-

1. Mandi
2. Chauntra
3. Aut
4. Darbahi
5. Bhadwani
6. Jhungi

and shall not halt with their flocks for longer than one night at any single halting place in any forest in which they have no right of grazing subject to the conditions that the distance between the two halting places shall not be less than 3 miles. The limit of the stay at a place for a night may, however, be relaxed to two nights if the flock is prevented from moving owing to inclement weather or when it has to be given salt.

26. Burning grasslands containing Deodar, Kail, Chil/Spruce or Fir without permission of the forest officer is prohibited. Other grass lands may be burnt without permission during the month of Magh and Phagun provided that :-

- (1) When such trees are in the vicinity of any forest, the burning will only be done in the presence of the Forest Guard or the Rakha.
- (2) Sufficient means are employed to keep the fire under control and to prevent it from spreading to the forests.
- (3) Occupiers of the land will be responsible if the fire spreads to a forest area.

27. Non-agricultural residents and travellers and the traders passing through the forests may, if the right holders do not object, graze their cattle, collect dry firewood and cut grass in the demarcated forest of the village in which they reside or through which they are passing for their bonafide requirements but not for sale or pastoral purposes.

28. Nomadic shepherds and cattle owners will graze their flocks and herds only :-]

- (a) in pastures recognized and allowed to them.
- (b) for recognized periods and
- (c) in accordance with such rules and regulations which may be issued by competent authority from time to time and on payment of such fees as may be levied by competent authority from time to time.

29. The following rules shall be observed for granting trees for building purpose to right-holders :-

- (a) In each garh or group of neighboring ghars a timber distribution camp will be held by or on behalf of the Forest Officer once a year and except in urgent cases, trees will be granted only to those bartandars who appear personally on the dates at the places fixed.
- (b) Written notices of the dates and places fixed for timber distribution will be circulated in advance by the Range Officers to the Kardars and Lambardars.
- (c) In urgent cases, as for instance, if a house is burnt or falls down, bartandars may apply to the Forest Officer, at any time. Range Officers will report at once on such applications and shall state actual requirements and the forest from which the trees can be given.
- (d) The fees to be paid by the bartandars are as follows :-

Species	Girth at breast height	Amount (Rs.)
Deodar, Walnut, Shisham, Toon and Mango	Under 2 haths	0.4/-
	2 haths and over but less than 3 haths	0.8/-
	3 haths and over but less than 4 haths	1/-
	4 haths and over but less than 5 haths	2/-
	5 haths and over but less than 6 haths	4/-
	6 haths and over	
Kail	Under 2 haths	0.4/-
	2 haths and over but less than 3 haths	0.8/-
	3 haths and over but less than 4 haths	0.9/-
	4 haths and over but less than 5 haths	1/-
	5 haths and over	
Chil	Under 2 haths	0.2/-
	2 haths and over but less than 3 haths	0.4/-
	3 haths and over but less than 4 haths	0.6/-
	4 haths and over	0.8/-
	5 haths and over	
Rai & Tosh	Under 4 haths	0.2/-
	4 haths and over	0.4/-
Jaman, Kakre, Alsan, Simbal	Under 4 haths	0.8/-
	4 haths and over	1/-
Other species	Under 4 haths	0.2/-
	4 haths and over	0.4/-

- (e) The above fee must be paid at the time the trees are granted. Such trees as are available will be marked for the grantees as soon after the distribution as possible, and any trees which are not removed from the forest within nine months of the date on which the trees are marked will be confiscated.

- (f) Trees standing on grass lands not entered in the malguzari of any private persons will be granted under the same conditions and on payment of the same fees as from other forest areas provided that no fees shall be charged where the occupier or his ancestor has planted the trees. The occupier of the grass land will have no exclusive right to trees, not planted by himself or his ancestors.
- (g) In exceptional cases, such as the burning of falling of a house or on account of the grant of unsound or malformed trees, the Forest Officer shall have power to modify or remit fees detailed in rule (d) above.
- (h) Except from forest which have been burnt within the previous two years, no permits will be required and no fees will be levied for the removal of standing dry trees or windfalls except for Deodar and Kail for which permits will be necessary and fees will be levied.
- (i) No fees will be levied and except in the case of Deodar and Chil, no permits will be necessary for trees standing on cultivated land.
- (j) Permits for Deodar and Chil from cultivated land and for windfalls of Deodar, Kail will be given by the Range Officers when on tour in their ilaqa.
- (k) No fees will be levied for trees granted for the repairs to temples or irrigation channels nor for trees given for water mills.
- (l) Tenants shall obtain trees for building purposes through their malguzars.

30. Grazing of all animals and grass cutting are prohibited in the undemarcated forests mentioned in Schedule III of this notification for the period specified therein.

By Order

Sd/

for CCF and Secretary(Forest Department) to the
Chief Commissioner, Himachal Pradesh Admn.

No. Ft.43-241-D/49 dated Simla-4, the 24th February, 1952.

Copy forwarded to :-

- 1.All Deputy Commissioners in Himachal Pradesh.
- 2.All Conservators of Forests in Himachal Pradesh.
- 3.All Divisional Forest Officers in Himachal Pradesh for information.
- 4.The Manager, Government of India Press, Simla for favour of publication in part III Section 3 of Government of India Gazette.

Sd/

for CCF and Secretary(Forest Department) to the
Chief Commissioner, Himachal Pradesh Admn.

APPENDIX- XXI
HIMACHAL PRADESH GOVERNMENT
(Forest Department)
NOTIFICATION
No. Ft.43-241-BB/49-2
Dated Simla-4, the 25th February, 1952

In exercise of the powers conferred by Section 32 of the Indian Forest Act(XVI of 1927) as applied to Himachal Pradesh, read with the Government of India, Ministry of States Notification No. 146-J dated the 6th December, 1950, the Chief Commissioner, Himachal Pradesh is pleased to make the following rules to regulate the following matters in the areas situated in the Old Suket State and declared as protected forests in Himachal Pradesh Government Notification No. Ft.29-241-BB/49 dated the 25th February, 1952.

I these rules unless there is something repugnant in the subject or context :-

"Demarcated Protected Forests" include all areas mentioned in Schedule I of this notification.

"Undemarcated Protected Forests" include all lands containing tree growth except

(2) such lands as have been recorded in the Land Revenue Settlement as cultivated or as in the Malguzari of a private person.

Section 2 of the Suket
State Forest Act.

(b) Demarcated Protected Forests.

"Record of Rights" means the Forest Settlement Report of Suket State as finally approved by H.H.the Raja Sahib Bahadur of Suket, 1926.

"Right holder" means a person entitled to right over land or trees or other forest produce in a protected forest as mentioned in the Record of Rights.

"Trees", "Timber", "Cattle" and "Forest Produce" have the same meaning as in the Indian Forest Act(XVI of 1927).

2. Except where the contrary is stated the rules apply to both the classes.

3. No closure can be made under section 30(b) in the Undemarcated Protected Forests without the consent of the right holders but the Chief Commissioner, Himachal Pradesh reserves the right to close such forests to grazing and grass cutting during the three months rainy season in summer.

4. (a) The exercise of rights by right holders is permitted subject to the following :-

- i) They do not permit outsiders to graze.
- ii) They do not fell, girdle, lop or burn any tree or strip off the bark or leaves from any tree or otherwise damage any tree except in accordance with these rules.

iii) They protect the trees from fire.

(b) In the event of the failure of any right holder or right holders to observe any of the conditions under 4(a), the Chief Commissioner may, notwithstanding that any penalty has been inflicted under section 33 of the Indian Forest Act direct that in such forest or any portion thereof, the exercise of any right of pasture or to forest produce shall be suspended for such period as he thinks fit or/and he may at his sole discretion take action under section 30(b) and (c) of the Indian Forest Act.

5. The exercise of rights is restricted to the satisfaction of the reasonable agricultural and domestic requirements of the right holders and is restricted to the areas for which they are recorded.

Note :- The decision of the Divisional Forest Officer for the time being incharge of Suket Forest Division as to what is 'reasonable' or not will be final.

6. The right holders are forbidden from selling, transferring or bartering the forest produce obtained in the exercise of rights but fruits, flowers, honey, medicinal roots, earth and stones for building purposes may be collected and sold by them without any restriction provided quantities involved are small.

7. The right holders may graze their cattle kept for domestic and agricultural requirements for(as opposite to pastoral, migratory and commercial) in the areas in which such right is admitted. Government may, however, levy fees on sheep, goats and buffaloes and may change them at its sole discretion.

8. Government may permit grazing of sheep, goats, buffaloes, mules, ponies, asses or any other animals owned by non-right holders or outsiders or right holders (if such animals are kept for pastoral, migratory and commercial purposes) under such rules and conditions as it may prescribe and on payment of such fees as it may decide from time to time.

9. The right holders may cut brushwood, thorny shrubs and remove such cut brushwood including thorny shrubs, dead fallen firewood and fallen refuge.

10. The right holders may cut and remove grass without any restriction.

11. The right holders may fell trees of Ban, Moru, Kharsu, bamboos and other broad leaved trees and Deodar, Rai poles for taking agricultural implements but only with the prior permission in writing of the Forest Officer.

12. The grant of trees required by right holders for building purposes will be regulated as under :-

(a) The right holders will apply in writing by a specified date only once in a year to the nearest forest officer. This application will be supported by a fard from the Patwari showing that the applicant is a right holder and will indicate the area in which the applicant has the recorded rights. On receipt of the application, the Forest Officer will proceed to assess the reasonable requirements of the applicant according to the standard of the buildings generally constructed by right-holders in the locality.

(b) On a specified date, the Forest Officer will hold Annual Timber Distribution camp at which the applicant or his authorized representative shall be present.

- (c) Trees will not be given when the applicant has already got a suitable building in a reasonably convenient locality and of a size sufficient for his bonafide requirements.
- (d) Trees will be given on payment of such fees as Government may fix from time to time. Such fees will be paid at the time of timber distribution.
- (e) Not more than one tree will be granted against each rupee of land revenue paid. The maximum number of trees to be granted will not exceed ten. Not more than two Deodar trees (if available) over 3 feet in girth will be granted to any one applicant.
- (f) If trees applied for are to be used outside the village to which the right pertains, double the fees mentioned in sub-clause (d) will be charged.
- (g) On special and unforeseen occasions such as occurrence of fire, earthquake, floods etc., the grant of trees may be made by the Forest Officer at any time during the year, but only as many trees may be given to the right-holders as may be assessed to be necessary to build a house of the standard as that which was destroyed by any of the calamities referred to above.
- (h) Trees marked and given over to the right holders under this rule will be felled and removed within four months of the date of such handing over of trees. Trees not so removed will revert to Government and the right-holders will have no claim to any compensation as such reversion.

13. Trees required for the upkeep of temples by custodians of temples will be granted according to rule 12.

14. Trees required for the construction and maintenance of irrigation channels by a village community will be marked by the Forest Officer and will be given free or on payment of such fees as Government may prescribe. Trees required for water mills will be paid for at current market rates.

15. Trees required for the construction and maintenance of such bridge as have been or may be constructed and maintained by the labour provided by villagers will be given free.

16. Fallen Chil pine needles and fallen leaves may be collected by hand and removed but in no case should a rake or any other implements used.

17. Lopping of blue pine, Deodar and Chil pine is prohibited but the lopping of oak, broad leaved species, Fir, Spruce is permitted provided no tree will be lopped which is under 3 feet 1 girth (at breast height) and the lopping is confined to the lower half of the tree and the lopped branches do not exceed one thumb in thickness.

18. Nirgals may be cut and collected by right holders for making kiltas or baskets for agricultural and domestic use only.

19. Torchwood may be removed by right holders from stumps of (a) fallen trees provided the marks, if any, placed by the Forest Officers are left intact (b) from trees specially marked for the purpose by the Forest Officer.

20. Right-holders may extract resin from only such Chil trees and Deodar oil from only such Deodar trees which have been specially marked for the purpose when resin and oil are required purely for domestic and agricultural purpose.

21. Any tree(except Deodar) below 1.5 feet in girth at breast height may be felled by right-holders for burning the dead. Deodar is only permitted to be felled if other trees are not available. In all cases intimation of felling of such trees will be given to the Forest Guard within 15 days of felling.
22. Debarking and plucking of leaves of Ambia, Amaltash and Ban Oak for purposes of tanning is permitted provided the removal does not endanger the life of the trees. Bark of only such coniferous trees will be removed which have been marked by the Forest Officer for felling.
23. Dry and fallen trees of Chil, Kail and Ban, when required by right-holders for making charcoal for agricultural implements may be felled by them without permission, but grant of trees of these species when required shall be marked before felling.
24. One pole of blue pine once a year may be felled for the Holi festival and trees of any species required for various other religious ceremonies may be felled by the right holders, provided an intimation is given to the Forest Guard before the felling is done. Likewise ban, miscellaneous broad leaved species may be felled by the priests for the purpose of Hawan in a temple.
25. Ban poles required by the right holders for erecting Machan or Tans in the fields near the forests may be felled without permission.
26. The right-holders are permitted to cut the branches of berberry species for making baskets where nirgals and hill poles do not exist.
27. Extension of cultivation may be permitted by the competent authority in the Undemarcated Protected Forests. Breaking of land for any purpose whatever in the Demarcated Protected Forests is prohibited.

By Order

Sd/

for CCF and Secretary(Forest Department) to
the
Chief Commissioner, Himachal Pradesh Admn.

No. Ft.43-241-D/49-2 dated Simla-4, the 24th February, 1952.

Copy forwarded to :-

- 1.All Deputy Commissioners in Himachal Pradesh.
- 2.All Conservators of Forests in Himachal Pradesh.
- 3.All Divisional Forest Officers in Himachal Pradesh for information.
- 4.The Manager, Government of India Press, Simla for favour of publication in part III Section 3 of Government of India Gazette.

Sd/

for CCF and Secretary(Forest Department) to the
Chief Commissioner, Himachal Pradesh Admn.

APPENDIX XXII

NAME OF OFFICERS WHO HELD THE CHARGE OF DIVISIONAL FOREST OFFICER, KARSOG

S.N.	Name of Officer	From	To
1	Sh. Raghunandan Lal Bhatia HPFS	07.10.78	23.11.78
2	Sh. D.S Patial HPFS	24.11.79	20.07.80
3	Sh. Vishal Singh HPFS	21.07.80	11.08.80
4	Sh. H. R. Arya IFS	12.08.80	25.08.83
5	Sh. D. C. Khandoori IFS	26.08.83	10.09.83
6	Sh. P. S. Thakur IFS	11.09.83	03.06.86
7	Sh. Sansar Chand Sood IFS	04.06.86	30.04.90
8	Sh. H. K. Sharma IFS	01.05.90	10.05.93
9	Sh. A. K. Somal IFS	11.05.93	10.07.96
10	Sh. M. P. Singh IFS	10.07.96	07.06.99
11	Sh. Manoj Bhaik IFS	17.06.99	15.05.02
12	Sh. S. D. Sharma IFS	15.05.02	08.08.03
13	Sh. R. Lalunsanga IFS	08.08.03	15.08.04
14	Sh. P. S. Verma HPFS	13.08.04	27.08.04
15	Sh. P. D. Dogra IFS	28.08.04	19.02.09
16	Sh. P. S. Verma HPFS	20.02.09	08.09.09
17	Sh. H K Sarwata HPFS	09.09.09	Till date

APPENDIX- XXIII

NORMS FOR SALVAGE MARKING

**Copy of memo. No. Ft. 116-84/71 (S) Part. Addl. Mob. Dated 26.11.1997.
Reference this office memo number 112-2/71 (S) dated 22.07.1993.**

Instances are coming to the notice of this office where green trees were marked as Salvage markings contrary to the instructions issued from this office from time to time. This is very serious.

In view of the Hon'ble Supreme Court Interim order dated 12.12.1996 passed in writ petition (Civil) No. 202/95 Shri T.N. Godavarman Thirumalkpad Versus Union of India and others, only marking of dry standing, fallen etc. trees are to be done for felling in areas in all the forest (except the Wild Life Sanctuary and National Park areas) notified under Section 18 and 35 of the Wildlife (Protection) Act, 1972 as per the norms fixed by the Expert Committee. The

Expert committee has fixed the following qualitative and quantitative norms for marking of dry standing/fallen trees through the H.P.S.F.C. Ltd. As under:

- 1. "Half broken and top broken green trees will not be marked under salvage marking in order to form bio mass in forest"**
- 2. With regard to fixation of qualitative norms, the following kind of trees will be marked by the Forest Department and removed by the H.P.S.F.C. Ltd.: -
1) Fallen.
2) Dry.**
- 3. So far as fixation of quantitative norms is concerned whatever quantity of fallen and dry trees is available the same is to be removed and no specific quantity can be fixed except that yield where prescribed under the Working Plans shall not be exceeded.**

You are, therefore, requested to please marked dry standing and dry fallen trees only in salvage marking strictly in accordance with the qualitative and quantitative norms fixed by the Expert Committee as above. It may please also be noted that before handing over the salvage lots for working to the forest corporation, necessary inspection of the markings may be ensured to be carried out by the respective Forest functionaries as prescribed vide various instructions to check and contain any chances of marking of green trees in salvage markings.

These instructions may please be complied in letter spirit and any laxity in this regard will be viewed seriously.

As no green trees can be felled therefore the requirement of fuel wood is to be met out of the salvage marking of dry trees only. You are, therefore, requested to please ensure that no time is left to identify dry B.L. trees to be marked in salvage lots and handing over to the H.P.S.F.C. for preparation of F/wood/Charcoal.

**Sd/-
Pr.C.C.F.H.P.**

APPENDIX- XXIV

Notification No FIs (c) 3-4/80 dated the 12.5.1993

1. Whereas certain areas in the Protected Forests as also areas vested in the Government under the H.P. Ceiling on Land Holding Act, 1972, and Village Common Lands (Vesting and Utilisation Act), 1974 and transferred or to be transferred to the Forest Department are barren or have degraded in the past due to heavy biotic pressure close to villages and whereas these areas need immediate treatment through protection, afforestation, pasture development, soil conservation etc. So as to arrest their further environmental degradation and to augment fuel wood, fodder and small timber production for use by local people and whereas active participation of the local people is vital for planning, protection afforestation and judicious use for Eco-development of aforesaid areas.
2. Now, therefore, in pursuance of Government of India's letter (No. 6-21/89-FP) dated June 1st 1990 from the then Secretary (Environment & Forests) to Forest Secretary of all States, It has been decided by the Govt. to constitute Village Forest Development Committees for Joint Forest management in the villages of Himachal Pradesh for planning, protection, afforestation, judicious use of Eco-development of aforesaid areas thereby bringing 50% of the feasible area under forest cover by 2010 A.D. In accordance with the policy of JFPM detailed rules /guidelines will be notified.

3. Procedure for constitution of Forest Development Committee.

- (i) **Name of Committee:** Village Forest development Committee (V.F.D.C.)
- (ii) **Definition:** A village forest development committee is registered non-political body representing all families of a Tika/ Village.
- (iii) **Area Selection:** There shall be only one Village Forest Development Committee (VFDC) in each Tika/ Village.
- (iv) **Constitution:** One adult male and female member of each family will be enrolled as a member of the general house of VFDC of the village. President, Mahila Mandal, President, Yuvak Mandal, Members of Panchayat representing Tikka/ Village will be nominated as members of the general House of the VFDC by DFO concerned.
- (v) **Executive Body:** The Executive Body will have 9 to 12 members including nominated ones. It will have President, Vice President, Treasure etc. Who will be elected by the Executive Body itself. Two auditors will be elected in the general House.

A uniform representation shall be given to each group of 10-20 families and the executive body will have minimum 5 members from the Tika/ Village out of which 50% will be women.

Forest Guard will be ex-officio Members Secretary of the Executive Body.

One member of Gram Panchayat, one member from Antyodya family, one women either from Mahila Mandal or otherwise will also be nominated members of the body.

- vi) **Meetings:** There will be two meetings of the General House and four of the Executive Body in a year. DFO will convene the meeting with the President of the Executive Body of VFDC and the Range Officer concerned twice in a year to review the progress of the work. Quorum will be 50% for these meetings.

(vi) **Registration of the Committee:** VFDC will formally be registered by the territorial Divisional Forest officer.

(vii) **Management Plan:** The Range Officer concerned will prepare Integrated Resource management Plan with the help of Executive Body which will be discussed with General House of VFDC and finally approved by the D.F.O.

(ix) **Duties of VFDC:**

1. To persuade the villagers to give the available areas for plantation.
2. To assist the Forest Department in planning, protection, afforestation, and judicious use of all existing rights and equitable sharing of usufructs and Eco-development of the area as per approved management plan.

Responsibilities : It will be the responsibility of the committee to ensure the

- (xi) Just and fair distribution of the usufructs derived and
- (xii) to ensure its management as per prescribed norms
- (xiii) Settlement of disputes between villagers.
- (xiv) Honour all the commitments.

Power of the committee: Committee will make its own bye-laws with the concurrence of concerned DFO. The Committee can recommend punishment to the offenders, including cancellation of membership and forfeiture of their share in usufructs to the DFO concerned.

Duties and Responsibilities of Forest Department:

1. To explain joint management plan to the villagers.
 2. To recognize the VFDC in letter and spirit and give weightage to its recommendations.
 3. To provide technical know-how; administrative and managerial skills; in order to assist the Executive Body to carry out the responsibilities.
- (xi) **Power of the Forest department:** Membership of any individual from the General House can be cancelled in constitution with the Executive Body. D.F.O. can dissolve the Executive Body in case it fails to fulfill its duties and responsibilities.
 - (xii) **Dispute Arbitration termination Of Agreement:** The entire quantity of usufructs will be distributed to the villagers under the supervision of Forest Guard (Member Secretary). 25% of the net sale proceeds of final harvest will be given to the VFDC out of the plantations/ coppice so raised and kept in a common fund of the Committee known as Village Development Fund which can be utilised for village development works with the approval of general House and in consultation with the concerned DFO. The exercise of other rights viz. Timber, fuel wood etc. will be exercisable as per provisions of settlements.

APPENDIX - XXV

(Authoritative English text of this Department Notification No. Fts-II (B)15 10/87 Dated 23-9-2001 as required under clause (3) of article of the Constitution of India)

Notification

No. Fts. II (B) 15-10/87

Dated 23.9.01

In exercise of the powers conferred by section 80 read with section 81 of the Indian Forest Act, 1927 (Act No. XVI of 1927), the Governor, Himachal Pradesh is pleased to make the following Regulations, namely: -

1. Short title, application and commencement: -

(1) These Regulations may be called the Himachal Pradesh Participatory Forest Management Regulations, 2001

(2) They shall apply to such Government forests and such Government land including the common land, which shall be selected jointly for participatory forest management by the Society and the Department.

(3) They shall come into force from the date of publication in Rajpatra, Himachal Pradesh.

2. Definitions: -In these Regulations, unless there is anything repugnant in the subject or context.

(a) "Act" means the Indian Forest Act, 1927 (Act No.16 of 1927) as amended in its application to Himachal Pradesh;

(b) "Conflict Resolution Group" means a group consisting of a representative of the concerned Gram Panchayat, a representative of the local non-government organisations or local community based organizations and the concerned Assistant Conservator of Forests.

(c) "Common Land", "Family", "Gram Panchayat", "Panch", "Pradhan", "Village" and "Ward" shall have the meanings respectively assigned to them in the Himachal Pradesh Panchayati Raj Act, 1984 (Act No.4 of 1994);

(d) "Department" means the Himachal Pradesh Forest Department.

(e) "Divisional Forest Officer" means the forest officer in-charge of a territorial of wildlife forest division of the Department.

(f) "Executive Committee" means executive body of the Society;

(g) "Forest Officer" means a Forest Officer as defined under sub-section (2) of section 2 of the Act;

(h) "General House" means General House of the Society;

(i) "Government" means Government of Himachal Pradesh;

(j) "Graziers group" means a group of persons, whether resident members or migratory graziers, who are dependent on the grazing resource in the selected area for meeting their livelihood needs;

(k) "Micro-plan", means a holistic forest management and development plan of the area selected for participatory management;

(l) "Participatory forest management" means management of Government forest and Government land including common land managed jointly by the Society and by the Department;

(m) "Selected area" means any Government forest and Government land including common land selected under regulation 3 of these Regulations;

(n) "Self help group" means any organised group of persons, who collectively by mutual help are able to enhance their economic status through resource based activities;

(o) "Site specific plan" means a sub component of the micro-plan, which is a technically appropriate plan for the site;

(p) "Society" means village forest development society registered under section 3 of the Societies Registration Act, 1860 (Act No.21 of 1860) for participatory forest management;

(q) "Sustainable forest management" means management which is economically viable, environmentally benign and socially beneficial, and which balances present and future needs; and,

(r) "User group" means a group of persons dependent upon a common natural resource for sustaining its livelihood needs.

3. Intent of participatory forest management: -

(1) On an application made to the Divisional Forest Officer signed by at least 50 percent of the voters of a Gram Panchayat Ward, any Government forest and Government land including common land may be brought under participatory forest management. The land so identified shall be known as selected area.

(2) In accordance with the wider objectives and plans of Government for sustainable forest management, the selected area shall be managed jointly by the Society and the Department on the terms and conditions of an agreement to be entered between the Society and the Department.

4. Village forest development society:-

(1) There shall be a Society for a Gram Panchayat Ward. However, where the Ward is not compact and the hamlets within it do not have common forests, common grazing lands, common rights and concessions, more than one Society may be formed for each cluster of hamlets. The Society shall be registered under section 3 of the Societies' Registration Act, 1860. (Act No.21 of 1860).

(2) All voters of a Gram Panchayat Ward shall be entitled to be enrolled as members of the Society.

5. Constitution of Executive Committee of the Society: -

The Executive Committee shall consist of -

(a) President to be elected by the General House;

(b) Vice President -do-

(c) Four Members -do-

(d) Treasurer to be nominated by the elected members from amongst the members of the Society;

(e) Joint Secretary (Woman) -do-

(f) Ward Panch ex-officio member;

(g) President - Mahila Mandal -do-

(h) Representative - Local women group -do-

(i) Three Members to be co-opted from the village level committees constituted by other departments of the Government, societies registered under the Society Registration Act, 1860, (Act No.21 of 1860), user groups, self help group and graziers group;

(j) Member - Secretary to be elected by the General House.

Provided that at least 7 members of the Executive Committee shall be from amongst the women. Joint Secretary shall assist the Member- Secretary.

6. Term of Office of members of the Executive Committee: - Elected members of the Executive Committee shall hold office for a period of two years from the date of assumption of office.

7. **Powers of the Executive Committee:** - The Executive Committee shall exercise the powers of a "Forest Officer" as assigned by the Government under the Act.
8. **Usufruct sharing:** - The Society shall be entitled to the following benefits, namely:
 - (a) to collect the yield such as fallen twigs, branches, lopping, grass, fruits, flowers, seeds, leaf fodder and non timber forest products free of cost;
 - (b) to the sale proceeds of all intermediate harvest, subject to protection of forest and plantations for at least 3 years from the date of agreement;
 - (c) to organize and promote vocational activities related to forest produce and land; and other activities such as promotion of self help groups which may provide direct benefits, including micro- lending to women. None of the activities so promoted shall affect the legal status of the forest- land;
 - (d) recorded rights over the forest shall not be affected by these benefits;
 - (e) the Government shall charge no royalty on the forest produce within the selected area;
 - (f) after 5 years, the Society may expand the area, on the basis of a fresh agreement deed, by inclusion of adjoining or nearby areas;
 - (g) after 20 years from the date of agreement and, based on the principles of sustained forest management, 75 percent of the net sale proceeds from the selected area shall be put into the account of Society and the remaining 25 percent of the net sale proceeds shall go to the concerned Gram Panchayat; and
 - (h) to utilize at least 40 percent of the net sale proceeds on forest regeneration activities including soil and water conservation. Provided that, for the purpose of usufruct sharing, family shall be one unit.
9. **Funds:** Funds shall be generated by the Society through contributions by members and the sale of usufructs under these regulations. All funds, including those received from the Government, Gram Panchayats and non-government sources, shall be utilized through the micro-planning process.
10. **Maintenance of accounts:** The sum received by the Society shall be deposited in the name of the concerned Society in a nationalized bank or scheduled bank or co-operative bank or post office and the account shall be operated under the signatures of the President, Treasurer and Member-Secretary of the Society.
11. **Grant-In-Aid:** The department shall release Grant-In-Aid to the Society under the Grant-In-Aid Rules subject to the availability of funds and satisfactory performance of functions by the Society.
12. **Settlement of dispute:-** In case of any dispute in relation to usufruct sharing in the Society, the Deputy Ranger concerned of the Department, shall take steps to reconcile the dispute. In case the dispute is not resolved, the Deputy Ranger shall refer the dispute, along with his report to the Ranger Officer concerned of the Department. The Range Officer, after hearing the parties, shall resolve the dispute within 30 days from the date of receipt of report of the Deputy Ranger.
13. **Appeal:** An appeal shall lie from the decision of the Ranger Officer to the Conflict Resolution Group to be filed within 30 days from the date of decision, who shall decide the same within 60 days from the date of filing of appeal, after affording an opportunity of being heard to the parties. The decision of the Conflict Resolution Group shall be final and binding on the parties. The Conflict Resolution Group shall send a copy of the decision to the Society and the Divisional Forest Officer concerned free of cost.
14. **Preparation of micro-plans:**

- (1) A micro-plan shall be prepared for the listed forest management and development of the selected area, by the Society. The Department shall help the Society in preparation of the micro-plan. A micro-plan shall be operative for a period of five years from the date of its approval by the Divisional Forest Officer and may be revised after three years. The micro-plan shall be passed in the general house with at least 60 percent majority of the members present.

- (2) The Divisional Forest Officer may approve whole or part of the micro-plan.

15. Powers of the Government:

Notwithstanding anything contained in these regulations, the Government shall have the powers to issued directions to the Society on participatory forest management processes, micro-planning, co-ordination, monitoring, Grant-In-Aid and Implementation mechanisms.

By order

Sd/

FC-cum-Secretary (Forests) to the
Government of Himachal Pradesh

Endst. No. As above. Dated Shimla-2, the 23-9-2001

Copy is forwarded to the following for favour of information and necessary action:

1. The Secretary, Government of India, Ministry of Environment & Forests, Paryavaran Bhawan, CGO Complex, Lodhi Road, New Delhi-3.
2. The FC-cum-Secretary (Finance-Reg.) to the Government of Himachal Pradesh, Shimla-2, with 3 spare copies.
3. The Pr. Chief Conservator of Forests, H.P.Shimla-1, with 20 spare copies.
4. The Addl. PCCF, H.P.Shimla-1
5. The Accountant General (Audit), H.P.Shimla-3 with 5 spare copies.
6. All CCFs in Himachal Pradesh.
7. The Conservator of Forests, Planning, H.P.Shimla-1
8. The Controller (P & S), H.P. Govt. Press, Shimla-5, for publication in the Rajpatra.
9. The Asstt. Controller (F& A), O/O PCCF, H.P., Shimla-1
10. Guard File.

Sd/

Addl. Secretary (Forests) to the
Government of Himachal Pradesh

APPENDIX- XXVI

Copy of letter No. Fts (F)-13-38/84 dated 11.3.86. From: Under Secretary (Forests) to the Govt. of Himachal Pradesh addressed to the Chief Conservator of Forests, H.P.

Subject: Regarding Policy for the felling of Ban / Oak trees.

I am directed to refer to the correspondence arresting with your letter No. Ft. 26-17/77 (S) III dated the, 14th October, 1985 on the subject cited above and to say that it has been decided that the restrictions in the felling of Ban/Oak trees should continue and the Govt. approval will have to be obtained before felling takes place. You are, therefore, requested to please take further necessary action in the matter accordingly.

No. Ft. 26-17/77 (S) dated Shimla-1, the 11th March 1986.

Copy along with a copy of this office D.O. letter of evens No. dated 4.10.1985 forwarded to CF/DFO's (T) for information and strict compliance. Please note that these instructions apply equally to felling of Ban trees from private lands.

Copy to Supdt. Misc. section for information and similar necessary action.

**-Sd-
C.C.F. (T), H.P. Shimla**

ANNEXURE XXVII

Forest (Conservation) Act, 1980 with Amendments Made in 1988

An Act to provide for the conservation of forests and for matters connected therewith or ancillary or incidental thereto. Be it enacted by Parliament in the Thirty-first Year of the Republic of India as follows:-

1. Short title, extent and commencement.

(1) This Act may be called the Forest (Conservation) Act, 1980.

(2) It extends to the whole of India except the State of Jammu and Kashmir.

(3) It shall be deemed to have come into force on the 25th day of October, 1980.

2. Restriction on the dereservation of forests or use of forest land for non-forest purpose. Notwithstanding anything contained in any other law for the time being in force in a State, no State Government or other authority shall make, except with the prior approval of the Central Government, any order directing-

(i) that any reserved forest (within the meaning of the expression "reserved forest" in any law for the time being in force in that State) or any portion thereof, shall cease to be reserved; (ii) that any forest land or any portion thereof may be used for any non-forest purpose;

(iii) that any forest land or any portion thereof may be assigned by way of lease or otherwise to any private person or to any authority, corporation, agency or any other organisation not owned, managed or controlled by Government;

(iv) that any forest land or any portion thereof may be cleared of trees which have grown naturally in that land or portion, for the purpose of using it for reafforestation.

Explanation - For the purpose of this section, "non-forest purpose" means the breaking up or clearing of any forest land or portion thereof for-

(a) the cultivation of tea, coffee, spices, rubber, palms, oil-bearing plants, horticultural crops or medicinal plants;

(b) any purpose other than reforestation;

but does not include any work relating or ancillary to conservation, development and management of forests and wildlife, namely, the establishment of check-posts, fire lines, wireless communications and construction of fencing, bridges and culverts, dams, waterholes, trench marks, boundary marks, pipelines or other like purposes.

3. Constitution of Advisory Committee.

The Central Government may constitute a Committee consisting of such number of persons as it may deem fit to advise that Government with regard to-

(i) the grant of approval, under Section 2; and

(ii) any other matter connected with the conservation of forests which may be referred to it by the Central Government.

3A. Penalty for contravention of the provisions of the Act.

Whoever contravenes or abets the contravention of any of the provisions of Section 2, shall be punishable with simple imprisonment for a period which may extend to fifteen days.

3B. Offences by the Authorities and Government Departments.

(1) Where any offence under this Act has been committed -

(a) by any department of Government, the head of the department; or

(b) by any authority, every person who, at the time the offence was committed, was directly in charge of, and was responsible to, the authority for the conduct of the business of the authority as well as the authority; \

shall be deemed to be guilty of the offence and shall be liable to be proceeded against and punished accordingly:

Provided that nothing contained in this sub-section shall render the head of the department or any person referred to in clause (b), liable to any punishment if he proves that the offence was committed without his knowledge or that he exercised all due diligence to prevent the commission of such offence.

(2) Notwithstanding anything contained in sub-section (1), where an offence punishable under the Act has been committed by a department of Government or any authority referred to in clause (b) of sub-section (1) and it is proved that the offence has been committed with the consent or connivance of; or is attributable to any neglect on the part of any officer, other than the head of the department, or in the case of an authority, any person other than the persons referred to in clause (b) of sub-section (1), such officer or persons shall also be deemed to be guilty of that offence and shall be liable to be proceeded against and punished accordingly.

4. Power to make rules.

(1) The Central Government may, by notification in the Official Gazette, make rules for carrying out the provisions of this Act.

2) Every rule made under this Act shall be laid, as soon as may be after it is made, before each House of Parliament, while it is in session, for a total period of thirty days which may be comprised in one session or in two or more successive sessions, and if, before the expiry of the session immediately following the session or the successive sessions aforesaid, both Houses agree in making any modification in the rule or both Houses agree that the rule should not be made, the rule shall thereafter have effect only in such modified form or be of no effect, as the case may be; so, however, that any such modification or annulment shall be without prejudice to the validity of anything previously done under that rule.

5. Repeal and saving.

(1) The Forest (Conservation) Ordinance, 1980 is hereby replaced.

(2) Notwithstanding such repeal, anything done or any action taken under the provisions of the said Ordinance shall be deemed to have been done or taken under the corresponding provisions of this Act.

Ministry of Environment and Forests
Notification

New Delhi, the 10th January, 2003

G.S.R.23(E):- In exercise of the powers conferred by sub-section (1) of section 4 of the Forest (Conservation) Act, 1980 (69 of 1980), and in supersession of the Forest (Conservation) Rules, 1981, except as respects things done or omitted to be done before such supersession, the Central Government hereby makes the following rules, namely:-

1. Short title, extent and commencement.-

These rules may be called the Forest (Conservation) Rules, 2003.

- (1) They shall extend to the whole of India except the State of Jammu and Kashmir.
- (2) They shall come into force on the date of their publication in the Official Gazette.

2. Definitions.- In these rules, unless the context otherwise requires:-

- (a) "Act" means the Forest (Conservation) Act, 1980 (69 of 1980);
- (b) "Committee" means the Advisory Committee constituted under section 3 of the Act;
- (c) "Chairperson" means the Chairperson of the Committee;
- (d) "Member" means a member of the Committee;
- (e) "Nodal Officer" means any officer not below the rank of Conservator of Forests, authorised by the State Government to deal with the forest conservation matters under the Act;
- (f) "Regional Office" means a Regional Office of the Central Government in the Ministry of Environment and Forests established as part of the Ministry to deal with the forest conservation matters under the Act;
- (g) "Section" means a section of the Act;
- (h) "User Agency" means any person, organisation or Company or Department of the Central or State Government making a request for diversion or de-notification of forest land for non-forest purpose or using forest land for non-forest purpose in accordance with the permission granted by the Central Government under the Act or the rules.

3. Composition of the Committee.-

- (1) The Committee shall be composed of the following members:-
 - (i) Director General of Forests, Ministry of Environment and Forests - Chairperson.
 - (ii) Additional Director General of Forests, Ministry of Environment and Forests- Member.
 - (iii) Additional Commissioner (Soil Conservation), Ministry of Agriculture- Member.
 - (iv) Three eminent experts in forestry and allied disciplines (non-officials)- Members.
 - (v) Inspector General of Forests (Forest Conservation), Ministry of Environment and Forests - Member Secretary
- (2) Additional Director General of Forests shall act as the Chairperson in the absence of Director General of Forests.

4. Terms of appointment of non-official members shall be as follows.-

- (i) a non-official member shall hold his office for a period of two years;

- (ii) a non-official member shall cease to hold office if he becomes of unsound mind, becomes insolvent or is convicted by court of law on a criminal offence involving moral turpitude;
- (iii) a non-official member may be removed from his office if he fails to attend three consecutive meetings of the Committee without any sufficient cause or reasons;
- (iv) any vacancy in the membership caused by any reason mentioned in clauses (ii) and (iii) shall be filled by the Government for the unexpired portion of two years term.
- (v) travelling and daily allowance shall be payable to the non-official members of the Committee at the highest rate admissible to the Government servants of Group 'A' under the rules and orders made by the Central Government and for the time being in force.

Provided that the payment of travelling allowance and daily allowance to a member who is a Member of the Parliament or a Member of a State Legislature shall be regulated in accordance with the Salary, Allowances and Pension of Members of Parliament Act, 1954 (30 of 1954) or the respective provisions of law pertaining to the member of the concerned State Legislature.

5. Conduct of business of the Committee.-

- (i) The Chairperson shall call the meeting of the Committee whenever considered necessary, but not less than once in a month.
- (ii) The meeting of the Committee shall be held at New Delhi.
- (iii) In a case where the Chairperson is satisfied that inspection of site or sites of forest land proposed to be used for non-forest purposes shall be necessary or expedient in connection with the consideration of the proposal or proposals received under sub-rule (3) of rule 6, he may direct that the meetings of the Committee to be held at a place other than New Delhi from where such inspection of site or sites is necessary.
- (iv) The Chairperson shall preside over every meeting of the Committee at which he is present.
- (v) Every question upon which the Central Government is required to be advised shall be considered in the meeting of the Committee provided that in urgent cases if the meeting cannot be convened within a month, the Chairperson may direct that papers may be circulated and sent to the members for their opinion within the stipulated time.
- (vi) The quorum of the meeting of the Committee shall be three.

6. Submission of the proposals seeking approval of the Central Government under section 2 of the Act.-

- (1) Every user agency, who wants to use any forest land for non-forest purposes shall make his proposal in the appropriate Form appended to these rules, i.e. Form 'A' for proposals seeking first time approval under the Act and Form 'B' for proposals seeking renewal of leases where approval of the Central Government under the Act had already been obtained earlier, to the concerned nodal officer authorized in this behalf by the State Government, alongwith requisite information and documents, complete in all respects, well in advance of taking up any non-forest activity on the forest land.
- (2) Every State Government or other authority, after having received the proposal under sub-rule (1) and after being satisfied that the proposal requires prior approval under section 2 of the Act, shall send the proposal to the Central Government in the appropriate forms, within ninety days of the receipt of the proposal from the user agency for proposals seeking first time approval under the Act and within sixty days for proposals seeking renewal of leases where approval of the Central Government under the Act had already been obtained earlier:

Provided that all proposals involving clearing naturally grown trees in forest land or portion thereof for the purpose of using it for reafforestation shall be sent in the form of Working Plan or Management Plan.

- (3) *The proposal referred to in sub-rule (2) above, involving forest land of more than forty hectare shall be sent by the State Government to the Secretary to the Government of India, Ministry of Environment and Forests, Paryavaran Bhavan, CGO Complex, Lodhi Road, New Delhi-110 003, with a copy of the proposal (with complete enclosures) to the concerned Regional Office.*

- (4) *The proposal referred to in sub-rule (2) above, involving forest land up to forty hectare shall be sent to the Chief Conservator of Forests or Conservator of Forests of the concerned Regional Office of the Ministry of Environment and Forests.*

- (5) *The proposal referred to in sub-rule (2) above, involving clearing of naturally grown trees in forest land or portion thereof for the purpose of using it for reafforestation shall be sent to the Chief Conservator of Forests or Conservator of Forests of the concerned Regional Office of the Ministry of Environment and Forests.*

7. Committee to advise on proposals received by the Central Government.-

- (1) The Central Government shall refer every proposal, complete in all respects, received by it under sub-rule (3) of rule 6 including site inspection report, wherever required, to the Committee for its advice thereon.

- (2) The Committee shall have due regard to all or any of the following matters while tendering its advice on the proposals referred to it under sub-rule (1), namely:-

- (a) Whether the forests land proposed to be used for non-forest purpose forms part of a nature reserve, national park wildlife sanctuary, biosphere reserve or forms part of the habitat or any endangered or threatened species of flora and fauna or of an area lying in severely eroded catchment;
- (b) Whether the use of any forest land is for agricultural purposes or for the rehabilitation of persons displaced from their residences by reason of any river valley or hydro-electric project ;
- (c) Whether the State Government or the other authority has certified that it has considered all other alternatives and that no other alternatives in the circumstances are feasible and that the required area is the minimum needed for the purpose; and
- (d) Whether the State Government or the other authority undertakes to provide at its cost for the acquisition of land of an equivalent area and afforestation thereof.

- (3) While tendering the advice, the Committee may also suggest any conditions or restrictions on the use of any forest land for any non-forest purpose, which in its opinion, would minimise adverse environmental impact.

8. Action of the Central Government on the advice of the Committee.-

The Central Government shall, after considering the advice of the Committee tendered under rule 7 and after such further enquiry as it may consider necessary, grant approval to the proposal with or without conditions or reject the same within sixty days of its receipt.

9. Proceedings against persons guilty of offences under the Act.-

- (1) The Central Government may, by notification, authorize any officer not below the rank of Conservator of Forests or the concerned forest officer having territorial jurisdiction over the forest land in respect of which the said offence is said to have

been committed, to file complaints against the person (s) prima-facie found guilty of offence under the Act or the violation of the rules made thereunder, in the court having jurisdiction in the matter.

Provided that no complaint shall be filed in the court, without giving the person (s) or officer (s) or authority (s) against whom the allegations of offence exist, an opportunity to explain his or their conduct and to show cause, by issuing a notice in writing of not less than sixty days, as to why a complaint should not be filed in the court against him or them for alleged offences.

- (3) The officer authorised by the Central Government in sub-rule (1) may require any State Government or its officer or any person or any other authority to furnish to it within a specified period any reports, documents, statistics and any other information related to contravention of the Act or the rules made thereunder, considered necessary for making a complaint in any court of jurisdiction and every such State Government or officer or person or authority shall be bound to do so.

Application Forms

As per Rule 6 of the Forest (Conservation) Rules, 2003, every user agency, who wants to use any forest land for non-forest purposes shall make his proposal in the appropriate Form appended to these rules, i.e. Form 'A' for proposals seeking first time approval under the Act and Form 'B' for proposals seeking renewal of leases where approval of the Central Government under the Act had already been obtained earlier, to the concerned nodal officer authorized in this behalf by the State Government, alongwith requisite information and documents, complete in all respects, well in advance of taking up any non-forest activity on the forest land.

FORM – 'A'

Form for seeking prior approval under section 2 of the proposals by the State Governments and other authorities

PART-I

(to be filled up by user agency)

1. Project details:

- (i) Short narrative of the proposal and project/scheme for which the forest land is required.
- (ii) Map showing the required forest land, boundary of adjoining forest on a 1:50,000 scale map.
- (iii) Cost of the project:
- (iv) Justification for locating the project in forest area.
- (v) Cost-benefit analysis (to be enclosed).
- (vi) Employment likely to be generated.

2. Purpose-wise break-up of the total land required:

3. Details of displacement of people due to the project, if any:

- i. Number of families.
- ii. Number of Scheduled Castes/Scheduled Tribe families
- iii. Rehabilitation plan. (to be enclosed)

4. Whether clearance under Environment (Protection) Act, 1986 required? (Yes/No).

5. Undertaking to bear the cost of raising and maintenance of compensatory afforestation and/or penal compensatory afforestation as well as cost for protection and regeneration of Safety Zone, etc. as per the scheme prepared by the State Government (undertaking to be enclosed).

6. Details of Certificates/documents enclosed as required under the instructions.

Signature
(Name in Block letters)
Designation
Address (of User Agency)
Date:- _____
Place:- _____

State serial No. of proposal _____
(To be filled up by the Nodal Officer with date of receipt)

PART-II

(To be filled by the concerned Deputy Conservator of Forests)

State serial No. of proposal _____

7. Location of the project/Scheme:

- i. State/Union Territory
- ii. District.
- iii. Forest Division
- iv. Area of forest land proposed for diversion (in ha.)
- v. Legal status of forest
- vi. Density of vegetation.
- vii. Species-wise (scientific names) and diameter class-wise enumeration of trees (to be enclosed. In case of irrigation / hydel projects enumeration at FRL, FRL-2 meter & FRL-4 meter also to be enclosed.)
- viii. Brief note on vulnerability of the forest area to erosion.
- ix. Approximate distance of proposed site for diversion from boundary of forest.
- x. Whether forms part of National Park, wildlife sanctuary, biosphere reserve, tiger reserve, elephant corridor, etc. (If so, the details of the area and comments of the Chief Wildlife Warden to be annexed).
- xi. Whether any rare/endangered/unique species of flora and fauna found in the area. If so details thereof.
- xii. Whether any protected archaeological/heritage site/defence establishment or any other important monument is located in the area. If so, the details thereof with NOC from competent authority, if required.

8. Whether the requirement of forest land as proposed by the user agency in col. 2 of Part-I is unavoidable and barest minimum for the project. If no, recommended area item-wise with details of alternatives examined.

9. Whether any work in violation of the Act has been carried out (Yes/No). If yes, details of the same including period of work done, action taken on erring officials. Whether work in violation is still in progress.

10. Details of compensatory afforestation scheme:

- i. Details of non forest area/degraded forest area identified for compensatory afforestation, its distance from adjoining forest, number of patches, size of each patch.
- ii. Map showing non-forest/degraded forest area identified for compensatory afforestation and adjoining forest boundaries.

- iii. Detailed compensatory afforestation scheme including species to be planted, implementing agency, time schedule, cost structure, etc.
- iv. Total financial outlay for compensatory afforestation scheme.
- v. Certificates from competent authority regarding suitability of area identified for compensatory afforestation and from management point of view. (To be signed by the concerned Deputy Conservator of Forests).

11. Site inspection report of the DCF (to be enclosed) especially highlighting facts asked in col. 7 (xi, xii), 8 and 9 above.

12. Division/District profile:

- i. Geographical area of the district.
- ii. Forest area of the district.
- iii. Total forest area diverted since 1980 with number of cases.
- iv. Total compensatory afforestation stipulated in the district/division since 1980 on (a) forest land including penal compensatory afforestation,

(b) non-forest land.

- v. Progress of compensatory afforestation as on (date) _____ on

(a) forest land

(b) non-forest land.

13. Specific recommendations of the DCF for acceptance or otherwise of the proposal with reasons.

Signature
Name
Official Seal

Date:- _____

Place:- _____

PART-III

(To be filled by the concerned Conservator of Forests)

14. Whether site, where the forest land involved is located has been inspected by concerned Conservator of Forests (Yes/No). If yes, the date of inspection & observations made in form of inspection note to be enclosed.

15. Whether the concerned Conservator of Forests agree with the information given in Part-B and the recommendations of Deputy Conservator of Forests.

16. Specific recommendation of concerned Conservator of Forests for acceptance or otherwise of the proposal with detailed reasons.

Signature
Name
Official Seal

Date:- _____

Place:- _____

PART-IV

(To be filled in by the Nodal Officer or Principal Chief Conservator of Forests or Head of Forest department)

17. Detailed opinion and specific recommendation of the State Forest Department for acceptance or otherwise of the proposal with remarks.

(While giving opinion, the adverse comments made by concerned Conservator of Forests or Deputy Conservator of Forests should be categorically reviewed and critically commented upon).

Signature
Name & Designation
(Official Seal)

Date:- _____

Place:- _____

PART- V

(To be filled in by the Secretary in charge of Forest Department or by any other authorised officer of the State Government not below the rank of an Under Secretary)

18. Recommendation of the State Government:

(Adverse comments made by any officer or authority in Part-B or Part-C or Part-D above should be specifically commented upon)

Signature
Name & Designation
(Official Seal)

Date:- _____

Place:- _____

INSTRUCTIONS (for Part-I):-

1. The project authorities may annex a copy of the approved project/plan in addition to filling Col. 1 (i) e.g. IBM approved mining plan for major minerals/CMPDI plan with subsidence analysis reports, etc.
2. Map has to be in original duly authenticated jointly by project authorities and concerned DCF – Col. 1 (ii).
3. Complete details of alternative alignments examined especially in case of project like roads, transmission lines, railway lines, canals, etc. to be shown on map with details of area of forest land involved in each alternative to be given - Col. 1 (iii).
4. For proposals relating to mining, certificate from competent authority like District Mining Officer about non-availability of the same mineral in surrounding/nearby non-forest areas.
5. In case the same company/individual has taken forest land for similar project in the State, a brief detail of all such approvals/leases be given as an enclosure along with current status of the projects.
6. The latest clarifications issued by the Ministry under Forest (Conservation) Act, 1980 may be kept in mind. In case such information do not fit in the given columns, the same shall be annexed separately.

GENERAL INSTRUCTIONS:-

1. On receipt of proposal, Nodal Officer shall issue a receipt to the user agency indicating therein the name of the proposal, user agency, area in hectare, serial number and date of receipt.
2. If the space provided above is not sufficient to specify any information, please attach separate details/documents.
3. While forwarding the proposal to the Central Government, complete details on all aspects of the case as per Form prescribed above read with the clarifications issued by the Ministry of Environment and Forests, Government of India, New Delhi should be given. Incomplete or deficient proposals shall not be considered and shall be returned to the State Government in original.
4. The State Government shall submit the proposal to the Central Government within stipulated time limits. In case of delay while forwarding, the reasons for the same to be given in the forwarding/covering letter.

Particulars of the case
CCD No. 11-9/98-FC (Pl.)
New Delhi, 11.01.2005
Dated: 11.01.2005

To

Principal Secretary / Secretary (Forests),
All State / Union Territory (UT) Governments

Sub: Submission of information regarding general approval dated 03.01.2005 under the Forest (Conservation) Act, 1980 for Government projects upto 1.00 ha for each case.

Sir,

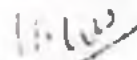
Kindly recall that general approval under the Forest (Conservation) Act, 1980 was granted by the Ministry of Environment and Forests vide letter No. 11-9/98-FC dated 03.01.2005 for diversion of forest land upto 1.00 ha for each case for the following activities to be implemented by the Government Departments:

1. Schools;
2. Dispensary / Hospital;
3. Electric and telecommunication lines
4. Drinking water;
5. Water / rainwater harvesting structures;
6. Minor irrigation canal;
7. Non-conventional sources of energy;
8. Skill up-gradation / vocational training centre;
9. Power sub-stations;
10. Communication posts; and
11. Police establishments like police stations / outposts / border outposts / watch towers, in sensitive areas (identified by Ministry of Home Affairs)

2. In this connection, you are requested to furnish consolidated information, pertaining to your State / UT in respect of the approvals granted under the said general approval dated 03.01.2005 under the Forest (Conservation) Act, 1980 in the format enclosed herewith as Annexure. The information in the prescribed format should be submitted latest by 15.09.2007.

Enclosure: As above.

Yours faithfully,


(Sandeep Kumar)

Assistant Inspector General of Forests

Copy to:-

1. Principal Chief Conservator of Forests, All States / Union Territories
2. Nodal Officers (FC), All States / Union Territories.
3. All Regional Offices of the Ministry of Environment and Forests
4. RO (HQ), MuEF, New Delhi.
5. Monitoring Cell, FC Division, MuEF, New Delhi.
6. Guard File.


(Sandeep Kumar)

Assistant Inspector General of Forests

(Annexure overleaf)

ANNEXURE

FORMAT FOR FURNISHING CONSOLIDATED INFORMATION REGARDING APPROVALS GRANTED UNDER THE GENERAL APPROVAL DATED 03.01.2005 FOR GOVT. PROJECTS UPTO 1.00 HA. FOR EACH CASE UNDER THE FOREST (CONSERVATION) ACT, 1980

Name of the State / UT:

Sl. No.	Name of the project	District	Name of the Government Department in favour of which forest land is diverted	Approval letter No. with date		Area diverted (in ha)	Net Present Value (NPV) collected		Date of deposition of NPV in the State / UT Government (please specify the Authority / Officer in favour of which NPV was deposited)	Whether NPV (collected from the User Agency) has been deposited in the Ad-hoc CAMPA Account maintained by the Ministry of Environment and Forests.		Remarks
				In-principle approval	Final approval		Rate of NPV applied (in lakh Rs. per ha)	Total NPV collected (in lakh Rs.)		If yes, please indicate the details of such deposition, viz. Date of deposition, DD No. / RTGS details	If not deposited, please specify the reasons.	
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(12)

NAME AND SIGNATURE (WITH OFFICIAL SEAL)
OF THE OFFICER FURNISHING THE
INFORMATION

F. No. 5-1/98-FC (Pt.II)
Government of India
Ministry of Environment and Forests
(F.C. Division)
Paryavaran Bhawan,
CGO Complex, Lodhi Road,
New Delhi – 110003.
Dated: 13, June, 2008.

To

The Secretary (Forests),
All States and Union Territories.

Sub: Guidelines for diversion of forest land for non-forestry purposes under the Forest (Conservation) Act, 1980 – Guidelines for collection of Net Present Value – In case of projects engaged in the production of Wind Energy by developing of wind farming on forest land.

Sir,

I am directed to invite your attention to Hon'ble Supreme Court's order dated 24.04.2008 in IA 1135-36 in IA 566 in Civil WP 202 of 1996 in the matter of Compensatory Afforestation fund regarding collection of Net Present Value (NPV) in case of projects engaged in the production of Wind Energy by developing of wind farming on forest land as below:-

"Nevertheless, these forest areas are being used, they shall be given exemption for 50% NPV. We accept the recommendations of CEC that these projects should pay 50% of the NPV at the minimum rate charged, provided minimal tree felling is involved".

In view of above-mentioned order of the Hon'ble Supreme Court, the Ministry of Environment and Forests issues following guidelines in modification of earlier guideline issued vide even number dated 18th September 2003 for recovery/collection of Net Present value of the forest land being diverted for non forest purposes under forest (Conservation) Act, 1980:

In case of projects engaged in the production of Wind Energy by developing of wind farming on forest land, NPV shall be charged 50% of the NPV at the minimum rate charged, provided minimal tree felling is involved.

Yours faithfully,

(B.K. Singh)
Sr. Assistant Inspector General of Forests

Copy to:-

1.	1.	PCCFs/Nodal Officers of all States/UTs.
2.	2.	All Regional Offices.
3.	3.	Director(FC)/AIGs(FC)
4.	4.	Monitoring cell
5.	5.	Guard File

PARTICULARS TO BE FURNISHED

(i) Map of the forest area required showing boundary of the adjoining forests, etc., is to be furnished along with the prescribed form. This should normally be on 1:50,000 scale. However, if maps on 1: 50,000 scale not available, map on 1" = 4 miles or any other suitable scale would be

acceptable. If the area is very small, an index map may be submitted showing forest boundaries and a location map on a larger scale with a land use of the area required.

(ii) Species-wise and diameter class-wise abstract of trees to be felled should be furnished in the prescribed form. Total enumeration is necessary only upto 10 hectares. For larger areas, species-wise and diameter class-wise abstract of trees may be computed either from the working plans or by standard sampling methods.

(iii) The projects for roads and railway line construction will be processed in their entirety. Therefore, proposals in piecemeal should not be submitted. A note on the present and future requirement of forest land is required to be submitted along with the proposal.

(iv) The State Government should send the proposal for renewal of mining leases at least six months prior to the date of expiry of the existing lease.

(vi) Cost Benefit Analysis in case of proposals involving forest land more than 20 hectares in plains and more than 5 ha. in hills including roads, transmission lines, minor, medium and major irrigation projects, hydel projects mining activity, railway lines, location specific installations like mikro-wave stations, auto repeater centres, T.V. towers etc.

APPENDIX XXVIII

AUTHORITATIVE ENGLISH TEXT Act No. 15 of 1991

THE INDIAN FOREST HIMACHAL PRADESH (SECOND AMENDMENT) ACT, 1991

(As Assented to by the President on 9th July, 1991)

Further to amend the Indian Forest Act, 1927 (Central Act No. 16 of 1927) in its applications to the State of Himachal Pradesh.

Be it enacted by the Legislative Assembly of Himachal Pradesh in the Forty-second year of the Republic of India as follows: -

Short Title-1. This Act may be called the Indian Forest (Himachal Pradesh Second Amendment) Act, 1991.

Amendment 2. In section 2 of the Indian Forest Act, 1927 (hereinafter called the of Sec. 2. Principal Act): -

(a). in clause (6), the word "and" occurring at the end shall be omitted;

(b) in clause (7), for the sign "the sign and word"; and" shall be substituted; and

(c) after clause (7) so amended, the following clause (3) shall be added, namely:-

(8). "Vehicle" means a wheeled conveyance of any description which is capable of being used for movement on land and includes a cart, trolley Vehicle and a trailer but does not include bicycle and cattle.

Amendment 3. In sections 26,33 & 42 of the principal Act, for the words "Six months Sec. 26,44 & and "five hundred" the words "two years" and "five thousand" shall be 42 substituted respectively.

Amendment 4. For sub-section (2) of section 52 of the principal Act the following Sec. 52 sub-sections (2) and (3) shall be substituted, namely: -

"(2). Any Forest Officer or Police Officer may, if he has reasons to believe that a vehicle has been or is being used for the transport of timber (excluding fuelwood) resin, khair wood and Katha in respect of which a forest offence has been or is being committed, require the driver or other person-in-charge of such vehicle to stop the vehicle and cause it to remain stationary as long as may vehicle reasonably be necessary to examine the contents in the vehicle and inspect all records relating to the goods carried which are in the possession of such driver or other person-in-charge of the vehicle.

(3).such property a mark indicating that the same has been seized and shall, as soon as may be, make a report of such seizure.

(a). Where the offence, on account of which the seizure has been made is in respect of timber (excluding fuelwood), resin, khair wood and katha which is the property of the State Government, to the concerned authorised officer under sub-section (1) of section 52-A; and

(b) In order cases, to the magistrate having jurisdiction to try the offence on account of which the seizure is made".

Insertion of Section 52-A and 52-B 5. After section 52 of the principal Act, the following section 52-A and 52-B shall be inserted namely: -

"52-A. Confiscation by Forest Officers in certain cases :-

(1). Notwithstanding anything contained in this Chapter, where a forest offence is believed to have been committed in respect of timber (excluding fuelwood), resin, khair wood and katha, which is the property of the State Govt., the Officer seizing the property under sub-section (1) of section 52 shall without any unreasonable delay produce it, together with all tools, ropes, chains, boats or vehicles used in committing such offence before an Officer, authorised by the State Government in this behalf by notification published in the official Gazette, not below the rank of an Assistant Conservator of Forests (hereinafter referred to as the authorised officer).

(2). Where an authorised officer seizes under sub-section (1) of section 52 any timber (excluding fuelwood) resin, khair wood and katha, which is the property of the State Government or where any such property is produce before an authorised officer under sub-section (1), once he is satisfied that a forest offence has been committed in respect of such property, such authorised officer may, whether or not a prosecution is instituted for the commission of such offence, order confiscation of the property so seized together with all tools, ropes, chains, boats or vehicle used in committing such offence.

(3) (a). Where the authorised officer, after passing an order of confiscation under sub-section (2), is of the opinion, that it is expedient in the public interest so to do, he may order confiscated property or any part thereof to be sold by public auction.

(b). Where any confiscated property is sold as aforesaid, the proceeds thereof, after deduction of the expenses of any such auction or other incidental expenses relating thereto shall where the order of confiscation made under section 52-A is set aside or annulled by an order under section 59 or section 59-A, be paid to the owner thereof or the person from whom it was seized as may be specified in such order.

52-B. Issue of show cause notice before confiscation under section 52-A: - (1) No order confiscating any timber (excluding fuelwood) resin, khair wood and katha, ropes, chains, boats or vehicle shall be made under section.

52-A except after notice in writing to the person from whom it is seized and considering this objections, if any:

Provided that no order confiscating a motor vehicle shall be made except, after giving notice in writing to the registered owner thereof, if in the opinion of the authorised officer it is practicable to do so, and considering his objections, if any.

(2). Without prejudice to the provisions of sub-section (1), no order confiscating any tool, rope, chain, boat or vehicle shall be made under section 52-A if the owner of the tool, rope, chain, boat or vehicle proves to the satisfaction of the authorised officer that it was used in carrying the timber (excluding fuelwood), resin, khair wood and katha without the knowledge or connivance of the owner himself, his agent, if any, and the person-in-charge of the tool, rope, chain, boat or vehicle and that each if them had taken all reasonable and necessary precaution against such use.

Amendment 6. At the end of section 53 of the principal Act but before the word "the" Section 53. words, brackets, figures sign and alphabet" or before the authorised officer under sub-section (1) of section 52-A" shall be inserted.

Amendment 7. After the words "The Magistrate" occurring in the beginning of Section 58 section 58 of the principal Act, the words, brackets, figures and

alphabet "or subject to such rules as may be prescribed, the authorised officer under sub-section (1) of section 52-A" shall be inserted.

**Amendment
Section 59**

8. In section 59 of the principal Act .

(a) in the heading after the words "order under section" but before the figures "55", the figure, alphabet and sign "52-A", shall be inserted;

(b) the existing section shall be re-numbered as sub-section (1); and

(c) after sub-section (1) so re-numbered, the following sub-section (2) and sub-section (3) shall be added, namely: -

"(2) Any person aggrieved by any order passed under section 52-A or section 59-A may, within thirty days from the date of communication to him of such order, appeal to the Session Judge having jurisdiction over the area in which the property to which the order relates has been seized and the Session Judge shall, after giving an opportunity to the appellant and the authorised officer or the officer specially empowered under section 59-A, as the case may be, to be heard, pass such order as he may think fit confirming, modifying or annulling the order appealed against.

(3). The order of the Session Judge under Sub-section (2) shall be final and shall not be questioned in any Court of Law".

Insertion of 9. After section 59 of the principal Act, the following sections

Sec.59-A 59-A and 59-B shall be inserted namely.

"59-A. Revision: - Any forest officer not below the rank of Conservator of Forests, specially empowered by the State Government in this behalf by notification published in the Official Gazette, may, before the expiry of thirty days from suo-moto call for and authorised officer under section 52-A, may make such enquiry or cause such enquiry to be made and may pass such orders as he deems fit:

Provided that no order prejudicial to a person shall be passed under this section without giving him an opportunity of being heard.

59-B. Bar of jurisdiction in certain cases: - Whenever any, timber (excluding fuelwood), resin, khair wood and katha together with any tool, rope, chain, boat or vehicle used in committing any forest offence is seized under section 52, the authorised officer under sub-section (1) of section 52-A or the officer specially empowered under section 59-A or Session Judge hearing an appeal under sub-section (2) of section 59 shall have, and notwithstanding anything to the contrary contained in this Act or in the Code of criminal Procedure, 1973 (Central Act 2 of 1974) or in any other law for the time being in force, any other officer, Court, Tribunal of authority shall not have, jurisdiction to make order with regard to custody, possession, delivery, disposal or distribution of such property".

Substitution 10. For section 60 of the principal Act, the following shall be
of Sec. 60 substituted namely: -

"60. When an order for the confiscation of any property has been passed under section 52-A or section 55 or section 57, as the case may be, or where on revision application made under section 59-A such order for confiscation has not been set aside, and the period limited by section 59 for an appeal from such order has elapsed and no such appeal has been preferred or when, on such an appeal being preferred, the Appellate Court confirms such order in respect of the property or such portion thereof, or if it has

been sold under sub-section (3) of section 52-A the sale proceeds thereof, as the case may be, shall vest in the State Government free from all encumbrances".

Amendment 11. After the figure "52" but before the sign occurring at the end of Sec. 61 of section 61 of the principal Act, the signs and words, "which is not the property of the Government, and the withdrawal of any charge made in respect of such property" shall be inserted.

Amendment 12. For the words, brackets and figures "the Code of Criminal of Sec.67 Procedure 1898 (5 of 1898)" occurring in section 67 of the Principal Act, the words, bracket and figures "the Code of Criminal Procedure, 1973 (2 of 1974)" may be substituted.

APPENDIX—XXIX
AUTHORITATIVE ENGLISH TEXT

THE INDIAN FOREST (HIMACHAL PRADESH THIRD AMENDMENT) ACT, 1996
(AS ASSENTED TO BY THE PRESIDENT ON 3RD JULY, 1997)

Further to amend the Indian Forest Act, 1927 (Central Act No. 16 of 1927 in this application to the State of Himachal Pradesh.

Be it enacted by the Legislative Assembly of the State of Himachal Pradesh in the Forty-seventh Year of the Republic of India, as follows:

a. Short title: This Act may be called the Indian Forest (Himachal Pradesh Third Amendment) Act, 1996.

b. 2. In section 52-B of the Indian Forest Act, 1927: -

Amendment of section

(a) in sub-section (1)- 52-B

(i) after the words "It is seized" the words "and the owner of the vehicle" shall be added; and

(ii) for the proviso, the following proviso shall be substituted, namely:
" Provided that no order confiscating a motor vehicle shall be made except after giving notice in writing to the registered owner thereof and considering his objections, if any."; and

(b) in sub-section (2) for the words and signs "his agent, if person-in-charge, of the tool, rope, chain, boat any, and the or vehicle and that each of them had taken all reasonable and necessary precaution against such use", the words and signs, ("or his agent, if any, or the person-in-charge of the tool, rope, chain, boat or vehicle" shall be substituted.)

APPENDIX— XXX

(Authoritative English text of the Govt. Notification No. Fts. (A) 3-77 dated 17-8-1993 as required under Clause (3) of Article of the Constitution of India for the general information of the public).

Government of Himachal Pradesh

Department of Forest Farming & Conservation

No. Fts. (A) 3-1/77 Dated Shimla-2, 17th August, 1993.

NOTIFICATION.

In exercises of powers conferred under Section 41 and 42 of the Indian Forest Act, 1927 (15 of 1927), the President of India is pleased to make the following rules further to amend the Himachal Pradesh Forest Produce Transit (Land Routes) Rules, 1978 and published in the Rajpatra Himachal Pradesh (Extra ordinary) dated the 5th March, 1979 vide this Department: Notification of even numbered dated 20-11-1978 namely.

Short Title-1. These rules will be called the Himachal Pradesh Forest Produce Transit (Land Routes) Amendment Rules, 1993.

Amendment

Of Rule 5 1(2) In rule 5 of the Himachal Pradesh Forest Produce Transit (Land Routes) Rules 1978 (hereinafter called the said rules) after the words "any forest produce", but before the words "that does not bear the words and signs" other than fuel wood, Khair wood, bamboos, charcoal, medicinal plants and seeds shall be inserted.

Amendment

Of Rules 6 3. In rule 5 of the said rules, after the words "forest produce but before the words, by land route", the words and sign" other than fuelwood, Khair wood, Bamboos, Charcoal, Medicinal plants and seeds" shall be inserted.

Amendment

of Rule 10 (4) In rule 10 of the said rules, for the words "timber or for such timber" appearing after the words "any unmarked", but before the words "as bears", the words and sign" forest produce other than fuelwood, Khair wood, bamboos, charcoal, medicinal plants and seeds" shall be substituted.

Amendment

of Rule 11 (5) In rule 11 of the said rules, for sub-rule (5), the following shall be substituted, namely: -

("5). The Issuing authority shall also determine the other conditions subject in which the pass shall be issued and shall also determine the period for which the pass shall remain valid. However, the validity of any pass shall under no circumstances exceed a period of six months including any extension (s) allowed. A fee of Rs. 25/- shall be livable for the Issue of such a pass except in case of medicinal plants for which the fee shall be as per Annexure-D".

Amendment

of Rule 18 (6). For rule 18 of the said rules, the following shall be substituted namely: -

"18. Bar on booking forest produce by rail, by post and by air: - No person shall offer any forest produce for export by rail on any railway station or by post at any post officer or by air on any airport within Himachal Pradesh, unless a pass has been issued under these rules and no railway, postal, airport authority shall accept for transport/transmission, any forest produce by rail, post or air, unless it is accompanied by a valid pass.

Amendment In rule 20 of the said rules, for the 6 months " appearing after the words" extended to "but before the words" or with" the words" two years" shall be substituted and for figures "500" words "five thousand" shall be substituted.

S. No.	Botanical Name of Medicinal Plant	Local Name of Medicinal Plant	Proposed export Fee (in Rs.) per Qtls
			50.00
1.	Ainaliaea aptra	Sethjalori	7500.00
2.	Aconitum chasmanthum	Patis Kauri	540.00
3.	Picrorhiza kurroa	Kaur, Karoo	500.00
4.	Jurnea macrocephala	Dhoop	450.00
5.	Podophyllum emodi (Hexandrum)	Bankakri	125.00
6.	Angelica glauca	Chora	2150.00
7.	Viola odorata	Banafsha	590.00
8.	Valeriana wallichii (Jatamansi)	Muskbala	110.00
9.	Rheum emodi.	Rawarchini	900.00
10.	Dioscorea	Shingli Mingli	335.00
11.	Thalictrum Spps.	Mamiri	50.00
12.	Artimisia Spps.	Seski	100.00
13.	Thynua spphyllum	Banjawaln	60.00
14.	Atropa acuminata	Balladon	10000.00
15.	Morchela esculents	Ghuchhies	40.00
16.	Poten tilla.	Dori	10000.00
17.	Pistacia integerrima	Kakar Singhi	1000.00
18.	Polygonatum spp.	Salam Mishri	1500.00
19.	Aconitum heterophyllum	Mithi Patis	500.00
20.	Aconitum violaceum	Mitha Telia	180.00
21.	Salvia moorcroftiana	Thuth	2000.00
22.	Bunium persicum	Kalazira	400.00
23.	Selimium vegnetum	Butkeshi	600.00
24.	Taxus baccata	Birmi (Yew leaves)	150.00
25.	Rhododendron companlatum	Kashmiri Patta	100.00
26.	Tinosora cordifolia	Gloa	6000.00
27.	Orchis latifolia	Salam Panja	300.00
28.	Vaterlana hardwichii	Nlhani	130.00
29.	Acorus calamus	Bach	1000.00
30.	Pinus wallichiana	Kall cones	500.00
31.	Berberis Aristata and others	Rasaunt	700.00
32.	Swertia chirayata	Chiryata	80.00
33.	Adientum lanulatum	Dungtuli	600.00
34.	Nardostachyes jatamansi	Jatamanel (Bal Chore)	85.00
35.	Abies webbiana	Tallis Patra	225.00
36.	Lichens	Chalore	50.00
37.	Ephedra Spps.	Eshederine (Butchur)	300.00
38.	Saussurea lappa (costus)	Kuth	70.00
39.	Hendychium acuminataum	Kappar Kachri	150.00
40.	Hyoscyamus niger.	Khuraani Ajwain	25.00
41.	Heracleum candicans	Patlain roots.	150.00
42.	Girardinia heterophylla	Bichhu Buti.	

Sd/-
(P.T. Wanadi)
Financial Commissioner-Cum-Secretary
To the Government of Himachal Pradesh

APPENDIX-XXXI

(Authoritative English text of this Department Notification No. Fts. B-A(3)-1/77, dated 9th March, 1994 as required under clause (3) of article 348 of Constitution of India).

**Government of Himachal Pradesh
Department of Forests.**

No. Fts (A) 3-1/77, Dated Shimla-2, 9th March, 1994.

NOTIFICATION

In exercise of the power conferred under Section 41 and 42 of the Indian Forest Act 1927 (16 of 1927), the Governor of Himachal Pradesh is pleased to make the following rules further to amend the Himachal Pradesh Forest Produce Transit (Land Routes) Rules, 1978, published in the Rajpatra, Himachal Pradesh (extra ordinary), dated the 5th March, 1979 vide this Govt. Notification of even number dated 20th Novemer, 1978, namely: -

1.Short title (1) These rules shall be called the Himachal Pradesh Forest Produce Transit (Land Routes) (Amendment Rules, 1994.

(2) They shall come into force at once.

2. Amendment of In Annexure-D of the Himachal Pradesh Forest Produce Transit (Land Routes) Rules, 1978: -

Annexure-D

(i) in item No.30 in column No.4, for the figure "1000.00", the bracket, words, sign and figure.

(i) 100.00 up to 30-6-1994.

(ii) 150.00 1-7-1994 onwards" shall be substituted; and

(ii) after item No.42, the following column-wise items shall be added, namely: -

"43" Cedar	Deodar	{i) 100.00 up to 30-6-94; and
Rossette	Rossette	{ii) 150.00 1-7-94 onwards.

44. Birch- Kosh {i) 100.00 up to 30-6-94; and

pine cones. {ii) 150.00 1-7-94 onwards".

By Order;

(R. K. Anand)

Financial Commisssioner-Cum-Secretary,
to the Government of Himachal Pradesh.

APPENDIX-XXXII

Authoritative English Text of the Government Notification No. Fts-B(F)-13-49/98-Loose dated 4th August, 2000 required under clause (3) of Article 348 of the Constitution.

Government of Himachal Pradesh
Department of Forests.

No. Fts-B(F)-13-48/98-Loose, Dated Shimla-2, 4th August, 2000.

NOTIFICATION

In exercise of the power conferred by Section 41 and 42 of the Indian Forest Act 1927 (16 of 1927), the Governor Himachal Pradesh is pleased to make the following rules to amend the Himachal Pradesh Forest Produce Transit (Land Routes) Rules, 1978, published in Rajpatra, Himachal Pradesh (extra ordinary), dated the 5th March, 1997 vide Notification No. Fts(A)3-1/77, dated 17-8-93, namely:

1. Short title & Commencement

(i) These rules may be called the Himachal Pradesh Forest Produce Transit (Land Routes) Amendment Rules, 2000.

(ii) They shall come into force from the date of publication in the Rajpatra, Himachal Pradesh.

2. Amendment of Annexure-D

In Annexure-D to the Himachal Pradesh Forest Produce Transit (Land Routes) Rules, 1978, after item No. 42, the following new items shall be added, namely: -

Sr. No.	Botanical name of Medicinal plants.	Local name of Medicinal plants.	Export permit fee in Rs. per quintal.
43.	Cedrella Spp.	Dari Phool	Rs. 50 per quintal.
44.	Pyrus pashia	Kainth	Rs. 30 per quintal.
45.	Colebrookea oppositifolia	Bindi Phool	Rs. 50 per quintal.
46.	Rhodidendron Spp.	Brass Phool	Rs.150 per quintal
47.	Coleus Aromaticus	Pathan Bail	Rs.30 per quintal.
48.	Lichens & Mosses	Green Mous Ghass	Rs.250 per quintal.
49.	Hypericum Patulum	Khaarera Basanti	Rs.250 per quintal.
50.	Curcuma Spp.	Ban Haldi	Rs.50 per quintal.
51.	Juniperus Recurva	Bether Patta	Rs.100 per quintal

The export permit fee levied on all 51 species in this Annexure will be applicable irrespective of the fact whether the above species are collected from the forest or are grown domestically except that the above fee will not be levied on item No. 22 *Baniam persicum* (Kala Zira) and item No.38 *Saussurea lappa* (Kuth) in case they have been grown on private land. However, export permit fee will be chargeable in case these two species have been collected from the forests.

By Order:
Financial Commissioner-Cum-Secretary
To the Government of Himachal Pradesh.

APPENDIX-XXXIII

(Authoritative English text of this Department Notification No. Fts. B-A(F)-13-49/98-Loose, dated 5th May, 2001 as required under clause (3) of article 348 of Constitution of India).

Government of Himachal Pradesh

Department of Forests.

No. Fts-B(F)-13-49/98-Loose, Dated Shimla-2, 5th May, 2001.

NOTIFICATION

In exercise of the power conferred by Section 41 read with section 42 of the Indian Forest Act 1927 (16 of 1927), the Governor Himachal Pradesh is pleased to make the following rules to amend the Himachal Pradesh Forest Produce Transit (Land Routes) Rules, 1978, published in Rajpatra, Himachal Pradesh (extra ordinary), dated the 5th March, 1979 vide Notification No. Fts(A)3-1/77, dated 20th Novemer, 1978, namely: -

1. Short title & Commencement

- (i) These rules may be called the Himachal Pradesh Forest Produce Transit (Land Routes) Amendment Rules, 2001.
- (ii) They shall come into force from the date of publication in the Rajpatra, Himachal Pradesh.

2. Amendment of In Annexure-D appended to the Himachal Pradesh Forest

Annexure-D Produce Transit (Land Routes) Rules, 1978, against item No.8 (*Valeriana wallichii*) (*Mushakbala*) under column No.4, for the figure and sign "590.00" the figure and sign "600.00" and against item No.28 (*Valeriana hardwickii*) (*Nihani*), under column No.4 for the figure and sign "300.00", the figure and sing "600.00" shall be substituted respectively.

By Order:

Financial Commissioner-Cum-Secretary
to the Government of HP

APPENDIX- XXXIV

(Authoritative English text of this Department Notification No. Fts. B-A(3)-1/77, dated 11-5-2001 as required under clause (3) of article 348 of Constitution of India).

**Government of Himachal Pradesh
Department of Forests.**

No. Fts-B-A(3)-1/77, Dated Shimla-2, 11th May, 2001.

NOTIFICATION

In exercise of the power conferred by Section 41 and 42 of the Indian Forest Act 1927 (16 of 1927), the Governor Himachal Pradesh is pleased to make the following rules to amend the Himachal Pradesh Forest Produce Transit (Land Routes) Rules, 1978, published in Rajpatra, Himachal Pradesh (extra ordinary), dated the 5th March, 1979 vide Notification No. Fts(A)3-1/77, dated 20th Novemer, 1978, namely: -

1. Short title & Commencement

(i) These rules may be called the Himachal Pradesh Forest Produce Transit (Land Routes) (Second Amendment Rules, 2001.

(ii) They shall come into force from the date of publication in the Rajpatra, Himachal Pradesh.

2. Amendment of In Annexure-D appended to the Himachal Pradesh Forest Annexure-D Produce Transit (Land Routes) Rules, 1978, against item No.31 (Berberis aristata, Berberis asiatica, Berberis vulgaris and Berberis lyceum), under column No.4, for the figure and sign "500.00" the figure and sign "80.00" shall be substituted.

**By Order:
Financial Commissioner-Cum-Secretary
To the Government of Himachal Pradesh**

NOTIFICATION

No. FFE-A(C) 7-1/96-11

Dated: Shimla-2, the 17-11-99

In the exercise of the powers conferred by clause (h) of Section 32 of the Indian Forest Act, 1927 (Act No. XVI of 1927), the Governor, Himachal Pradesh is pleased to make the following rules, namely:

1. Short title, commencement and application:

- (1) These rules may be called the Himachal Pradesh Forests (Protection from Fire) Rules, 1999.
- (2) These rules shall come into force from the date of publication in the Rajpatra, Himachal Pradesh.
- (3) These rules shall be applicable through out the year except for the period from 1st of July to 13th of September.

2. Definitions:

- (1) In these rules, unless there is anything repugnant in subject or context,
 - (a) "Act" means the Indian Forest Act, 1927 (XVI of 1927);
 - (b) "Divisional Forest Officer" means,
 - (i) Divisional Forest Officer of a Forest Division.
 - (ii) Divisional Manager of the Himachal Pradesh State Forest Corporation Ltd., and
 - (iii) Collector (in whose jurisdiction forest lies);
 - (c) "Forest" means a reserved Forest or protected-forest, duly notified as such under the Act;
 - (d) "Section" means section of act; and
 - (e) "Schedule" means Schedule appended to these Rules.
 - (viii) The words and expressions used, but not defined in these rules, shall have the meanings assigned to them in the Act.

(3) Prohibition of kindling of fire: -

- (1) Kindling of fire within one hundred meters from a forest without permission of the Divisional Forest Officer, or his authorised representative shall be prohibited.
 - (i) Any person lighting a fire even beyond one hundred meter from the boundary of a forest shall take precautions, by clearing a fire path, not less than 10 meters in width between such place and such boundary, or by employing watchers or otherwise, to prevent the fire from spreading.
 - (ii) Precautions to be taken in burning agriculture residue bushes or "ghasnies" near forest. No person shall ignite agriculture residue or set fire to "ghasnies", or clear by fire any land, within a distance of one hundred meter from the boundary of the forest, unless;
 - (a) he gives notice of his intention to burn or clear the land by fire, at least one week before doing so, to the nearest Forest Range Officer under whose jurisdiction such land lies; and
 - (iii) There is between such boundary, and the spot on which such materials are ignited, a space at least ten meters in width, which is clear of all vegetation capable of carrying fire from such spot to the forest.

(iv) Restrictions on collection and stacking of inflammable forest produce of inflammable material outside the boundary of or in the forest. Any person collecting such inflammable material, that is to say, forest produce such as grass, dried leaves and pine needles, firewood, timber, bamboo and resin, on a land adjoining a forest, or a holder of a pass or permit issued by a Forest Officer, or a person exercising his privilege or right to collect such forest produce from a forest, shall stack it at, as the case may be, in an open space in the forest as the Division Forest Officer may, by general or special order, specify, and shall isolate such stacks in such manner that, if it catches fire, the fire shall not spread to the surrounding area to endanger the forests.

(4) Precautions to be taken at camping places: -

(1) No person shall camp in a forest, except in a camping place specially cleared and set apart and duly notified for the said purpose by the Divisional Forest Officers.

(2) A person camping at such camping place may light fire for the purpose of cooking or for any other purpose in such a manner as not to endanger the forest or any building, shed and property at the camping place.

(3) A person camping at the camping place shall, before vacating it, collect in the center of the camping place all inflammable material, which is to be left behind, and shall carefully extinguish all fires at the site.

By order
Commissioner-cum-Secretary (Forests)
to the Government of Himachal Pradesh,
Shimla-171002

APPENDIX-XXXVI

**GOVERNMENT OF HIMACHAL PRADESH
HIMACHAL PRADESH FOREST DEPARTMENT**

STANDING ORDER

No. 1/2000

Dated Shimla-1, the 4.3-2000

**Subject: - Demarcation and Settlement operations in Himachal Pradesh
- Specification for Boundary Pillars.**

The specifications for construction of various types of boundary pillars were ordered vide Standing Order No. 2 / 1992 dated 16.9.92. During the course of discussion at various levels it was noted that these dry stone masonry B.Ps are easily damaged / disturbed by human beings / animals. Moreover, the dry stone masonry pillars require frequent repairs. It is, therefore, necessary to construct the boundary pillars of permanent nature.

Therefore, in supersession of office order No. 2 / 1992, dated 16.9.92 following specifications are ordered. These will, however, be applicable to areas where new boundary pillars are to be constructed. In forests where B.Ps are already existing, the existing pattern will be continued.

1. Specifications:

Kind of B. Ps.	Size of Boundary Pillars (In cm.)				Remarks.
	Foundation	Base	Top	Height	
(I) Main Pillars.	100x100x15	80x80	40x40	100	The foundation will be dug 25 cm. Deep. A layer of charcoal / lime will be laid at the bottom of the pillar. After construction the foundation will be covered with earth. The B.P. number will be engraved on pillar when cement plastering is fresh. After white washing, the number will be painted black. The B.P. will be in random rubble stone masonry in 1:6 cement mortar. There will be an iron rod with triangular base in the center.
(II) Chalk-Pillars.	80x80x15	60x60	30x30	60	As above except that the pillar will also be in cement concrete.

2. Procedure for construction of these Boundary Pillars: -

The design for construction of these boundary pillars is enclosed. The exact location as pre Revenue (Settlement) maps will first be ascertained and clearance of site done. Then required foundation (25 cm.) deep will be dug out. The 25cm. Depth will be on the down hill side. The orientation of foundation will be in such a way that two sides are perpendicular to the line joining this pillar and next pillar. A thin layer (3-4cm) of lime and charcoal will be laid in bottom and some cement concrete (40 mm) (1:6:12) will be

laid (4-6). On it the triangular shaped base of iron rod will be erected in center. The thickness of foundation be made up to 15cm by 40 mm cement concrete (1:6:12) keeping iron rod straight.

Then the pillar will be constructed after leaving a step of 10cm on all sides. The main pillar will be constructed in random rubble stone masonry in 1:6 cement mortar as shown in design. The hammer dressing of stones will be done on one side i.e. outer. Proper orientation of pillar will also be ensured. Iron rod will be kept straight. The base of iron rod will be triangular as shown in the design. After construction, 15 mm cement plaster (1:6 cement mortar) will be done on all four sides and on top. The B.P. number will be engraved on side opposite the next B.P. Proper curing will be ensured. Afterwards two coats of white washing will be done after preparing mixture properly. The B.P. number will then be painted black. The ground will be leveled by filling earth in the left out excavated portion.

Same procedure will be followed in case of chalk pillar except that here the pillar will be laid filling cement concrete (1:3:6) with 25 mm concrete in frame / shuttering of specified size. The plaster here will be 6 mm in 1:4 cement mortar.

3. Orientation and numbering:

The orientation of the B.Ps will be in such a way that the one-side faces the direction of next boundary pillar i. e. is perpendicular to the line joining this pillar and the next pillar. The B.P. number will be engraved on face opposite (back side) to which faces the next B.P. later on the number will be painted black.

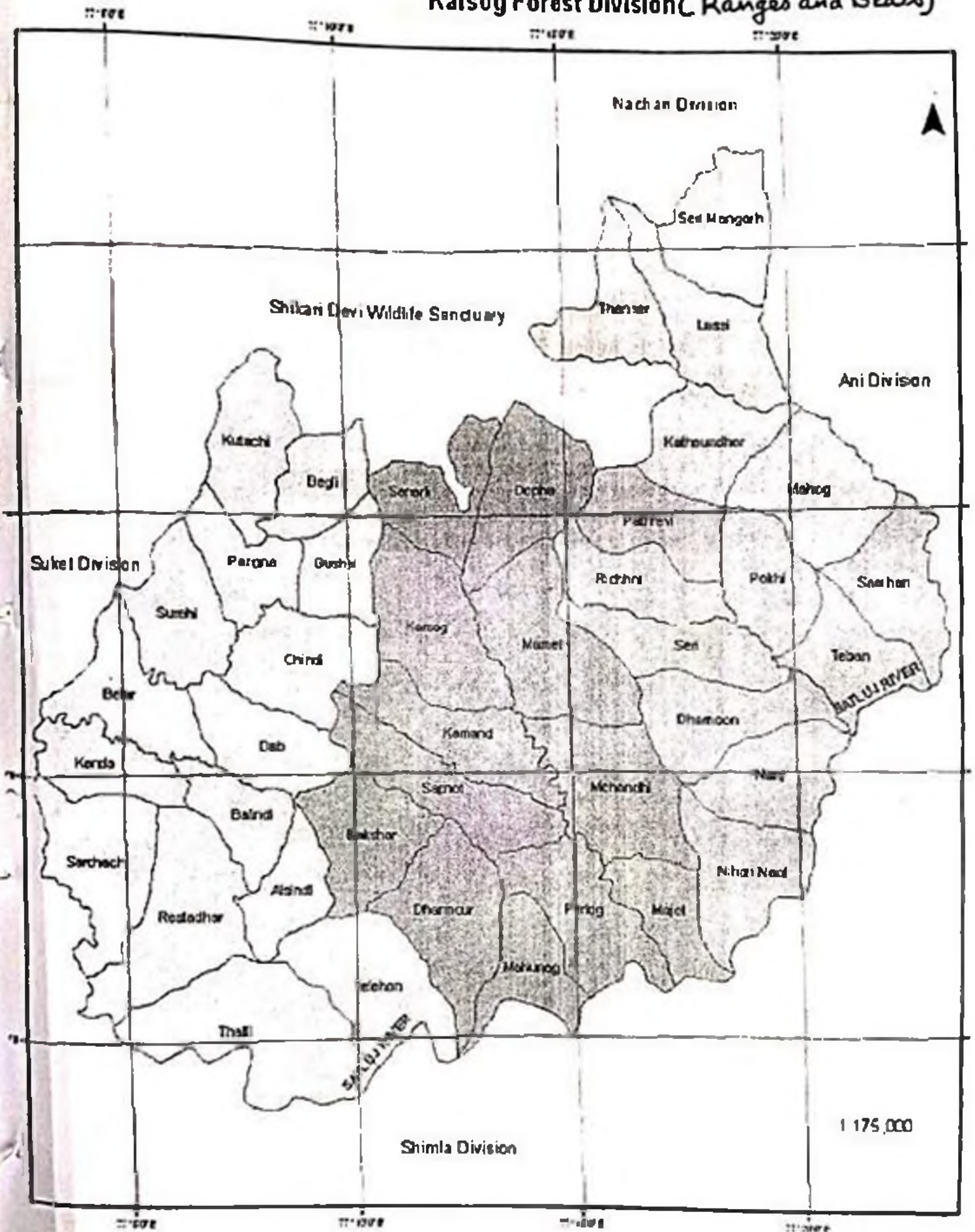
4. There will be no change in specification and size of existing B.Ps.

Sd/-

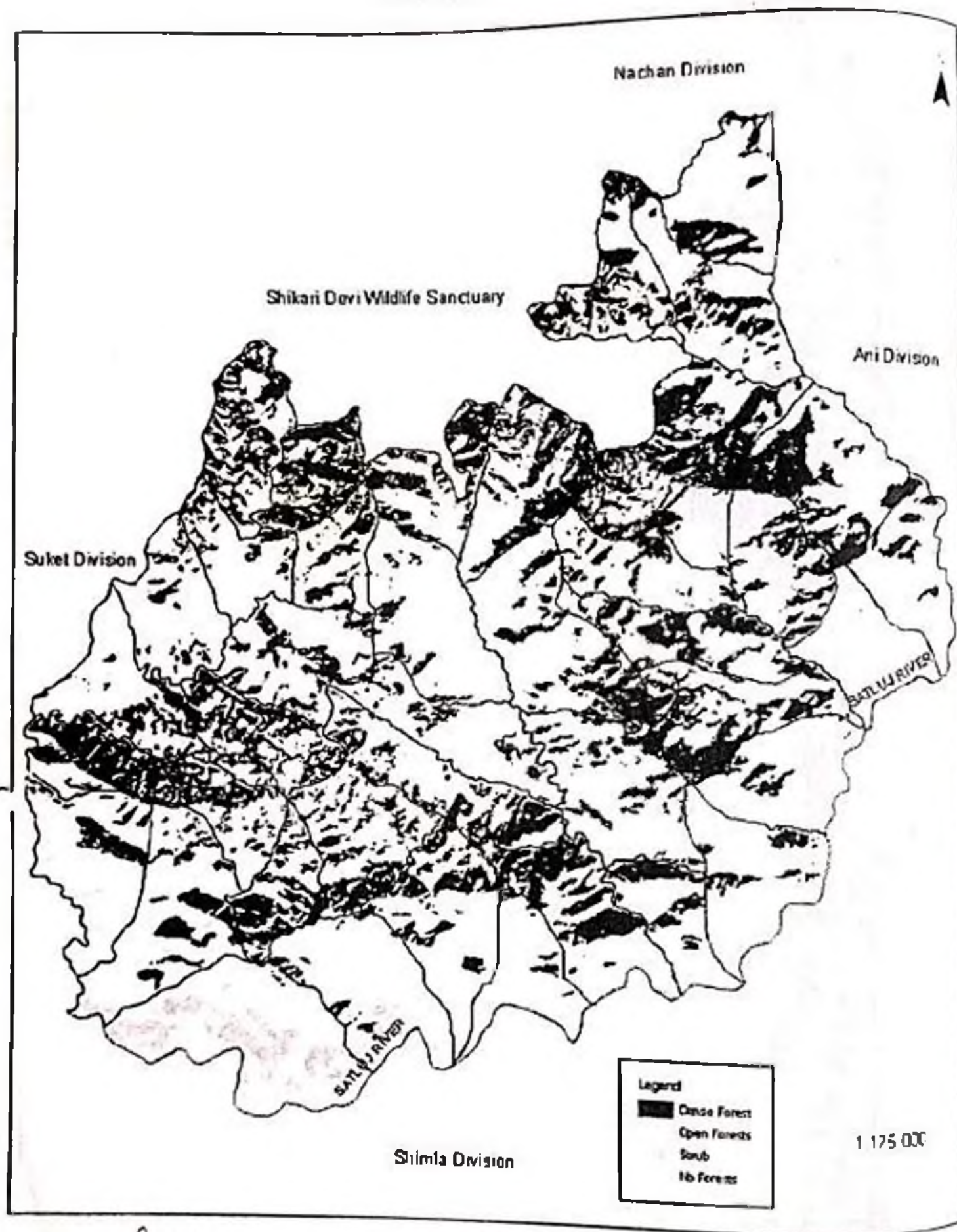
(S.K.Pande)

Principal Chief Conservator of Forests,
Himachal Pradesh.

Karsog Forest Division (Ranges and Beats)



Forest Cover Map

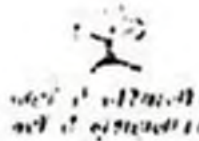


Scale



भारत सरकार
पर्यावरण एवं वन मंत्रालय

GOVERNMENT OF INDIA
MINISTRY OF ENVIRONMENT & FOREST



दूरभाष

Telephone No. (0172) 2638081

FAX No. (0172) 2638135

पूँजी रोड कागज भवन

ब्लॉक नं. 24-25, सेक्टर 31-ए

चंडीगढ़ - 160030

NORTHERN REGIONAL OFFICE
BAYS NO. 24-25, SECTOR 31-A
DAKSHIN MARG, CHANDIGARH-160030

F.No.13-7 (15VI997-ROO) 2335

Dated 26th March, 2012

To

The Additional Chief Secretary (Forests)
Government of Himachal Pradesh,
Forest Department,
Talland, Shimla, Himachal Pradesh.

Sub: Approval of Working Plan for the forests of Karsog Forest Division (2012-2013 to 2026-2027).

Ref: Pr. Chief Conservator of Forests, Govt. of Himachal Pradesh letter No.2614 dated 27th February, 2012.

Sir,

The Working Plan for the forests of Karsog Forest Division (2012-2013 to 2026-2027) has been examined in accordance with the provisions of Forest (Conservation) Act, 1980 as amended till date, National Working Plan Code, guidelines issued by Government of India, Ministry of Environment and Forests, New Delhi from time to time, National Forest Policy 1988 as well as orders dated 12th December 1996 of Hon'ble Supreme Court of India in PIL. WP(C) 202 of 1995 read with WP(C) 171 of 1996.

After careful consideration of the proposed Working Plan, approval of the Competent Authority is hereby conveyed under Section 2 of the Forest (Conservation) Act, 1980 subject to observance of the following conditions :-

1. The approval shall be effective from the date of issuance of this communication till 31.03.2027.
2. All the provisions of the Forest (Conservation) Act, 1980 and various Rules & Guidelines issued under the Act shall be strictly enforced.
3. Yield obtained from dead, dry & salvaged timber will form part of prescribed yield and in case prescribed yield has been achieved from dead & dry volume, no further felling will be carried out. Yield from dead, dry & salvaged timber must not exceed the prescribed yield in the working plan.
4. All the fellings must commensurate with regeneration and no fellings would be permitted unless funds for regeneration are available. In this regard, orders of Hon'ble Supreme Court of India will be strictly complied with.
5. Intensive protection measures against fire, biotic interference and encroachment in forests shall be taken up.

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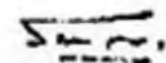
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S/CWP
10/4/12
200-383
14/2012

Y. K. Singh

6. All the prescriptions prescribed in the working plan regarding plantation, protection and development of the forest area will be strictly followed and any change in the prescriptions will be treated as deviation for which prior approval of competent authority will be obtained.
7. Sufficient budgetary allocation be ensured for timely implementation of various prescriptions regarding protection, regeneration and development of the forests.
8. Mid term review of the Working Plan will be taken up on between 7th & 8th year of the plan period.
9. The work on revision of Working Plan shall be taken up well in advance so that the revised plan is ready before expiry of the current Working Plan.

The Central Government reserves the right to review/modify or withdraw its approval at any point of time depending upon the management needs and any other guidelines of the Ministry of Environment and Forests, Government of India or Hon'ble Supreme Court of India.

Yours faithfully,



(S.K. Sehrawat)

Adtl. Principal Chief Conservator of Forests (Central)

Copy to:

1. The Adtl. Director General of Forests (FC), Ministry of Environment & Forests, Paryavaran Bhawan, CGO Complex, New Delhi.
2. The Pr. Chief Conservator of Forests, Govt. of Himachal Pradesh, Forest Department, Talland, Shimla, Himachal Pradesh.
3. The Chief Conservator of Forests, Working Plan & Settlement Circle, Himachal Pradesh.
4. The Conservator of Forests, Working Plan, Rampur, Himachal Pradesh.
5. The Divisional Forest Officer-cum-Working Plan Officer, Forest Division and District Kasog, Himachal Pradesh.
6. Guard file.

HIMACHAL PRADESH FOREST DEPARTMENT
WILDLIFE WING

No. WL/ Working Plan/ 6766
Dated, Shimla the 27.2.2012

From: Pr.CCF (Wildlife)-cum-
Chief Wildlife Warden, H.P.

To: DFO Karsog

Subject: Karsog Working Plan.

Memo:

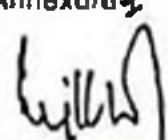
Reference your office memo No. MHWDP/4776 dated 14.2.2012 on the subject cited above.

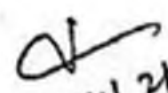
2. The draft of Working Plan of Karsog Chapter -VII- Wildlife Management (Overlapping) Working Circle has been vetted / approved. The following be added as under:

In the Chapter under sub heading 7.7.1.1- Monkey Surveys, following should be added.

- i) Emphasis on recruitment i.e. young ones is to be given during the 1 hour count every six months.
- ii) The detailed guidelines issued for monkey incidence estimation should be included in this chapter. Copy of guidelines is enclosed as Annexure 4.

Ends: As above


Pr.CCF (Wildlife)-cum-
Chief Wildlife Warden, H.P.


24/2/12

INDEX MAP OF KARSOG FOREST DIVISION

SCALE:- 1:200000



LEGEND

Div. Boundary --- -- --

Range „-----“

Shimla
JDM

W.P.O

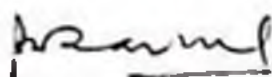
HIMACHAL PRADESH



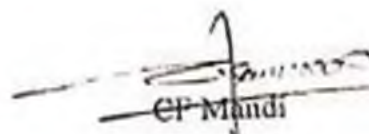


S.D. Sharma IES.

Working Plan Officer, Karsog



C.F. Working Plan & Settlement



C.C.F. Working Plan &
Settlement, Mandi



Deputy Commissioner,
Mandi



Divisional Commissioner,
Mandi

Pr.C.C.F HP Shimla