REVISED WORKING PLAN FOR THE POONCH FOREST DIVISION

2017-18 TO 2026-2027

BY

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PREPARED BY

WORKING PLAN & RESEARCH CIRCLE

J&K FOREST DEPARTMENT

JAMMU/SRINAGAR

INTRODUCTION

This Plan is the revision of the Working Plan written by ***Sh. Vinod Ranjan,IFS (Rtd.)*** Ex-Principal Chief Conservator of Forests, Jammu and Kashmir Forest Department. It covers the Poonch Forest Division as it exists now. There is a change in the method of treatment prescribed. In this plan the India Selection System has been applied in the Fir and Chir Working Circles. These changes have been made keeping in view the latest developments in the field of forestry.

Some other changes have also been made with regards to the allotment of certain compartments to the newly introduced Working Circles. This includes the creation of Eco-Tourism Working Circle and The Forest Protection Working Circle for the first time. Further, the Protection Working Circle has been renamed as Ecological Conservation Working Circle.

The field work for the preparation of the new plan was started in the June 2014 and completed by April 2016. Forest Inventory was prepared by Sample plot technique and the results obtained from the field were put to various statistical tests.

The Stock Maps showing compartment boundary and other important information about the crop have been prepared. For this purpose the satellite imagery i.e. LISS-III (Geo-Coded) on a scale of 1:50,000 was used. The Stock Maps for the individual compartments were prepared on a scale of 1:15,000.

The writer's thanks are also due to ***Sh. A.K. Singh, IFS***, the present Principal Chief Conservator of Forests, Jammu and Kashmir Forest Department for providing all expedient help during the final stage of the preparation of this Working Plan Report.

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Sd/-

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List of important plants and trees found in Poonch forest division

S. No.	Common Name	Botanical Name	Family
1	Aam	*Megnifera indica*	*Anacardiaceae*
2	Ailan	*Pieris ovalifolia*	*Ericaceae*
3	Akhrot	*Juglans regia*	*Juglandaceae*
4	Aonla	*Emblica officinalis*	*Euphorbiaceae*
5	Arjun	*Terminalia Arjuna*	*Combretaceae*
6	Ash/Hum/Sum	*Fraxinus excelsior*	*Oleaceae*
7	Baheda	*Terminalia belerica*	*Combretaceae*
8	Bakru	*Lonicera quinquelocularis*	*Caprifeliaceae*
9	Bana	*Vitex negundo*	*Verbenaceae*
10	Banj	*Quercus incana*	*Cupuliferaea*
11	Bankakri	*Podophyllum hexandrum*	*Cappaidaceae*
12	Bankhar/Basuti	*Adhatoda vasica*	*Acanthaceae*
13	Bankhor	*Aesculus indica*	*Sapindaceae*
14	Bansangli	*Sarcococca saligna*	*Euphorbiaceae*
15	Barin	*Quercus glauca*	*Fagaceae*
16	Bed	*Salix species*	*Salicaceae*
17	Bel	*Aegro marmelos*	*Rulaceae*
18	Belladona	*Atropa belladonna*	*Solanaceae*
19	Beri	*Zizyphus species*	*Rhamnaceae*
20	Bhan	*Rhus cotinus*	*Anacardiaceae*
21	Bhang	*Cannabis sativa*	*Cannabaceae*
22	Bharel/Kalkut	*Prunus padus*	*Rosaceae*
23	Bhurj/Bhojpatra/Birch	*Betula utilis*	*Betulaceae*
24	Bhutiabadam/Thangi	*Corylus colurna*	*Betulaceae*
25	Brahmi	*Taxus baccata*	*Taxaceae*
26	Bras	*Rhododendron arboreum*	*Ericaceae*
27	Budloo/Fir/Raan	*Abies pindrow*	*Pinaceae*
28	Challa	*Plantago tibitica*	*Plantaginaceae*
29	Champ	*Alnus nepalensis*	*Betulaceae*
30	Chandra	*Machilus odoratissima*	*Lauraceae*
31	Chandri	*Machilus gamblei*	*Lauraceae*
32	Chir	*Pinus roxburghii*	*Pinaceae*
33	Chitti-suali	*Colebrooki aoppositifolia*	*Lamiaceae*
34	Dadri	*Cedrella serrata*	*Meliaceae*
35	Daru	*Punica granatum*	*Punicaceae*
36	Deodar	*Cedrus deodara*	*Pinaceae*
37	Dhai	*Woodfordia floribunda*	*Lythraceae*
38	Dhataki	*Woodfordia fruticosa*	*Lythraceae*
39	Dhaman	*Grewia oppositifolia*	*Tiliaceae*
40	Flai	*Acacia modesta*	*Fabaceae*
41	Garna	*Carissa opaca*	*Apocynaceae*
42	Gingaroo	*Crataegus crenulated*	*Rosaceae*
43	Guchi/Teolda	*Viburnum grandiflorum*	*Caprifoliaceae*
44	Gurkathi	*Desmodium tillaefolium*	*Fabaceae*
45	Hill toon/Dadri	*Toona serrata*	*Meliaceae*

S. No.	Common Name	Botanical Name	Family
46	Hiru	*Quercus ilex*	*Fagaceae*
47	Jamun	*Syzygium cumini*	*Myrtaceae*
48	Jhinjera	*Bohinia recemosa*	*Caesal pinaceae*
49	Jhojru	*Myrsine africana*	*Myrsinaceae*
50	Kaamal	*Mallotus philippinensis*	*Euphorbiaceae*
51	Kail	*Pinus wallichiana*	*Pinaceae*
52	Kaimal	*Berberis lyceum*	*Berberidaceae*
53	Kainth	*Pyrus pashia*	*Rosaceae*
54	Kainzu	*Acer caesium*	*Sapindaceae*
55	Kakar	*Pistacia integerrima*	*Anacardiaceae*
56	Kansari	*Daphne cannabina*	*Thymelaeaceae*
57	Karir/Kuje	*Rosa moschata*	*Rosaceae*
58	Kathi	*Indigofera heterantha*	*Papilionaceae*
59	Kathi	*Indigofera pulchella*	*Papilionaceae*
60	Katha/Khair	*Acacia catechu*	*Fabaceae*
61	Kau	*Olea cuspidate*	*Oleaceae*
62	Khaidi	*Rubus ellipticus*	*Rosaceae*
63	Khajur	*Phoenix syluvestris*	*Palmar*
64	Khairwal	*Bohinia purpurea*	*Caesal pinaceae*
65	Kanderu	*Ilex dipyrena*	*Aquifoliaceae*
66	Kharsu	*Quercus semecarpifolia*	*Fagaceae*
67	Khirak	*Celtis australis*	*Cannabaceae*
68	Kikar	*Acacia arabica*	*Fabaceae*
69	Killer/Pehru	*Parrotiopsis jacquemontiana*	*Hamamelidaceae*
70	Kimbasimla	*Lannea grandis*	*Anacardiaceae*
71	Kinas	*Dioscorea deltoidea*	*Dioscoreaceae*
72	Krangal/Amaltas	*Cassia fistula*	*Fabaceae*
73	Lalkaner	*Nerium indicum*	*Apocynaceae*
74	Leauri	*Curpressus torulosa*	*Cuperussaceae*
75	Luni	*Cetoneaster bacillaris*	*Resaceae*
76	Moru	*Quercus dilatata*	*Fagaceae*
77	Palash	*Butea monosperma*	*Fabaceae*
78	Pansar	*Wendlandia exserta*	*Rubiaceae*
79	Peepal	*Ficus bengalensis*	*Moraceae*
80	Phokda/Fig	*Ficus palmate*	*Moraceae*
81	Pula	*Kydia calycina*	*Malvaceae*
82	Rumbal	*Ficus glomerata*	*Moraceae*
83	Sabaspod	*Liliaceae*	*Liliaceae*
84	Safeda	*Populus ciliata*	*Salicaceae*
85	Saintha	*Dodonea viscosa*	*Lamiaceae*
86	Salai	*Plectranthus rugosus*	*Lamiaceae*
87	Sandan	*Ougenia dalbergioides*	*Papilonaceae*
88	Semla	*Bohinia retusa*	*Caesal pinaceae*
89	Shader	*Urtica dioca*	*Urticaceae*
90	Simbal	*Bombax ceiba*	*Bombacaceae*
91	Siris	*Albizzia lebbek*	*Mimoseae*

S. No.	Common Name	Botanical Name	Family
92	Tali/Shisham	*Dalbergia sissoo*	*Fabaceae*
93	Taliana/Puchh	*Viburnum nervosum*	*Caprifoliaceae*
94	Toon	*Cedrela toona*	*Meliaceae*
95	Tosh	*Picea smithiana*	*Pinaceae*
96	Trembal	*Ficus roxburghii*	*Moraceae*
97	Trikanna	*Acer pictum*	*Sapindaceae*
98	Tut	*Morus serrata*	*Sulidae*

Glossary of vernacular terms

Anardana	Dried Pomegranate seeds.
Bakerwals	Nomadic graziers who raise Goats and sheep.
Banesri	Broad leaved species.
Barfani	High altitude , snow clad areas.
Behak	Summer grazing grounds.
Bhisti	Water carrier.
Chaks	Cultivation areas inside demarcated forests.
Dhwar	Summer abode near grazing grounds.
Gaddis	Nomadic graziers who rear sheep and goats.
Ghat	River bank, place of launching.
Guchchi	Edible Fungi (Morchella Aesculenta).
Gujjars	Nomadic graziers who rear buffaloes, cows and deal in dairy products.
Illagua	Tract of the area.
Jagir	Estate.
Kandi	Dry, outer shivalik tract.
Keri	A small spur.
Khad	A stony stream.
Kotha	A temporary hut.
Lachhi	Torch wood.
Lamberdar	Village headman.
Maidan	Grassy blank.
Nalla	Stream, seasonal or perennial.
Pathru	Dry slide.
Tehsil	Revenue Administrative unit.
Zila	District.
Zamindar	Landed cultivator.

Glossary of animals of Poonch forest division

S.No.	Common Name	Scientific Name
1	Beach of Stone Marten	*Martes foina*
2	Brown Bear	*Ursus arctos*
3	Common Langur	*Semnopithecus entellus*
4	Five Striped Palm Squirrel	Funambulus Pennanti
5	Fulvous Fruit-bat	Rousettus Leschenaulti
6	Goral	Nemorhaedus Goral
7	Grey Musk Shrew	Suncus Murinus
8	Himalayan Black Bear	*Ursus thibetanus*
9	Himalayan Yellow Throated Marten	*Martes flavigula*
10	Hog deer	Axis Porcinus
11	Indian Porcupine	*Hystrix indica*
12	Indian Fox	*Vulpes bengalensis*
13	Indian Hare	Lepus Nigricollis
14	Indian Wild Boar	Sus-Scrofa
15	Jackal	*Canis aureus*
16	Jungle Cat	*Felis chaus*
17	Leopard	*Panthera pardus*
18	Musk Deer	*Moschus chrysogaster*
19	Rhesus Macaque	Macaca Mulatta
20	Snow Leopard	*Uncia uncial*

Glossary of birds of Poonch forest division

S. No.	Common Name	Scientific name	Family
1	Baya or Weaver bird	*Ploceus philippinus*	*Ploceidae*
2	Black and yellow grosbeak	*Mycerobas icterioides*	*Muscicapidae*
3	Brahminy or Black Headed Myna	*Sturnus pagodarnum*	*Sturnidae*
4	Black redstart	*Phoenicurus ochruros*	*Muscicapidae*
5	Black tit	*Parus rufonuchalis*	*Muscicapidae*
6	Black-eared Kite	*Milvus migrans*	
7	Black drongo (King crow)	*Dicrurus adsimilis*	*Dicruridae*
8	Blossom headed parakeet	*Psittacula cyanocephala*	*Psittacidae*
9	Blue rock pigeon	*Columba livia*	*Columbidae*
10	Cattle egret	*Bubulcusibis*	*Ardeidae*
11	Cheer pheasant	*Catreus wallichi*	*Falconidae*
12	Chukar patridge	*Akectirus chukar*	*Falconidae*
13	Cinamon tree sparrow	*Passer rutilans*	*Muscicapidae*
14	Collared grosbeak	*Mycerobas affins*	*Muscicapidae*
15	Common cuckoo	*Cuculus canorus*	*Cuculidae*
16	Common hawkcuckoo	*Hierococcyx varius*	*Cuculidae*
17	Common kingfisher	*Alcedo atthis*	*Alcedinidae*
18	Common myna	*Acridotheres tristis*	*Sturnidae*
19	Common Peafowl	*Pavo cristatus*	*Phasianidae*
20	Common swallow	*Hirundo rustica*	*Hirundinidae*
21	Crested black tit	*Parus melanolophus*	*Muscicapidae*
22	Eagle owl	*Bubo bubo*	*Strigidae*
23	Fire capped tit	*Cephalopyurs flammiceps*	*Muscicapidae*
24	Golden Backed wood pecker	*Dinopium benghalense (Syn) (Brachypternus benghalensis)*	*Picidae*
25	Gold billed blue magpie	*Urocissa flavirostris*	*Corvidae*
26	Gold crest	*Regulus regulus*	*Muscicapidae*
27	Golden eagle	*Aquila chrysaetos*	*Accipitridae*
28	Gold fronted chloropsis	*Chloropsis aurifrons*	*Chloropseidae*
29	Golden oriole	*Oriolus oriolus*	*Oriolidae*
30	Green backed tit	*Parus monticolus*	*Muscicapidae*
31	Grey- headed flycatcher	*Culicicapa ceylonensis*	*Muscicapidae*
32	Grey shrike	*Lanius excubitor*	*Laniidae*
33	Grey tit	*Parus major*	*Muscicapidae*
34	Grey wagtail	*Motacilla cinerea*	*Muscicapidae*
35	Grey winged blackbird	*Turdus boulboul*	*Muscicapidae*
36	Griffon vulture	*Gyps fulvus*	*Accipitridae*
37	Himalayan Bearded Vulture	*Gypaetus barbatus hemachalanus*	*Accipitridae*
38	Himalayan Golden Eagle	*Aquila chrysaetos*	*Accipitridae*
39	Himalayan Griffon Vulture	*Gyps himalayensis*	*Accipitridae*
40	Himalayan monal	*Lophophorus impejanus*	*Falconidae*
41	Himalayan pied wood-pecker	*Dendrocopos himalayensis*	*Dicidae*
42	Himalayan swiftlet	*Collocalias brevirostris*	*Apodidae*
43	Himalayan tree-creeper	*Certhia discolor*	*Muscicapidae*

S. No.	Common Name	Scientific name	Family
44	Himalayan Whistling thrush	*Myiophoneus caeruleus*	*Muscicapidae*
45	Hodgson mountain finch	*Leucosticte nemoricola*	*Muscicapidae*
46	Hoopoe	*Upupa epops*	*Upupidae*
47	House crow	*Corvus splendens*	*Corvidae*
48	House sparrow	*Passer domesticus*	*Muscicapidae*
49	House swift	*Affinis*	*Apodidae*
50	Indian white-backed vulture	*Gyps bengalensis*	*Accipitridae*
51	Indian cuckoo	*Cuculus micropterus*	*Cuculidae*
52	Indian ring dove	*Stretopelia decaocto*	*Columbidae*
53	Indian Robin	*Saxicolides fulicata*	*Muscicapidae*
54	Indian tree pie	*Dendrocitta vagabunda*	*Corvidae*
55	Jungle Babbler	*Turdoides Striatus*	*Leiothrichidae*
56	Jungle crow	*Corvus macrorhynchos*	*Corvidae*
57	Jungle Myna	*Acridotheres fuscus*	*Sturnidae*
58	Kestrel	*Falco tinnunculus*	*Falconidae*
59	Koel	*Eudynamys scolopaceas*	*Cuculidae*
60	Little Egret	*Egretta garzetta*	*Ardeidae*
61	Paradise flycatcher	*Terpsiphone paradise*	*Muscicapidae*
62	Pied bushnet	*Saxicola caprata*	*Muscicapidae*
63	Pied Crested Cuckoo	*Clamator jacobinus*	*Cuculidae*
64	Red turtle dove	*Stretopelia tranquebarica*	*Columbidae*
65	Red Wattled lapwing	*Vanellus indicus*	*Charadriidae*
66	Redvented bulbul	*Pycnonotus cafer (Molpastes cafer)*	*Pycnonotidae*
67	Ring Dove	*Streptopelia decaocte*	*Columbidae*
68	Rofous backed shrike	*Lanius schach*	*Lanidae*
69	Rose ringed parakeet	*Psittacula krameri*	*Psittacidae*
70	Rufous-tailed flycatcher	*Muscicapa ruficauda*	*Muscicapidae*
71	Rollen or Blue Jay	*Coracias benghalensis*	*Coracidae*
72	Shikra	*Accipiter badius*	*Accipitridae*
73	Slaty headed parakeet	*Psittacula himalayana*	*Psittacidae*
74	Small blue king fisher	*Alcedo-atthis*	*Alcedinidae*
75	Small green bee-eater	*Merops orientalls*	*Meropidae*
76	Small yellow napped wood pecker	*Picus chlorophus*	*Picidae*
77	Spotted dove	*Stigmatopelia chinensis*	*Columbidae*
78	Talor Bird	*Orthotomus sutorius*	*Cisticolidae*
79	The Himalayan Tree Pie	*Dendrocitta formosae*	*Corvidae*
80	The Himalayan barred owlet	*Glaucidium cuculoides*	*Strigidae*
81	The Himalayan nut cracker	*Nucifraga caryocatactes*	*Corvidae*
82	The brown fronted pied wood pecker	*Dryobates auriceps*	*Picidae*
83	The brown Himalayan pied wood-pecker	*Dryobates himalayensis*	*Picidae*
84	The crested bunting	*Melophus lathami*	*Emberizidae*
85	The Red billed blue Magpie	*Urocissa erythrorhyncha*	*Corvidae*
86	The Shahin Falcon	*Falco peregrinus peregrinator*	*Falconidae*

S. No.	Common Name	Scientific name	Family
87	The Spotted Fork-tail	*Enicurus maculatus*	*Muscicapidae*
88	The Spotted owlet	*Athena brama*	*Strigidae*
89	The West Himalayan Pied Wood-pecker	*Dryobates himalayanus*	*Picidae*
90	The West himalayan white throated layghing thrush	*Garrulax whistleri*	*Garrulacinae*
91	The white capped redstart	*Chaimarrornis leucocephalus*	*Muscicapidae*
92	White Backed Bengal Vulture	*Preudogyps bengalensis*	*Accipitridae*
93	White cheeked bulbul	*Pycnonotus leucogenys*	*Pycnonotidae*
94	White Breasted kingfisher	*Halcyon smyrnensis*	*Halcyonidae*
95	White spotted Fantail Flycatcher	*Rhipidura albicollis*	*Muscicapidae*
96	White Wagtail	*Motacilla alba*	*Muscicapidae*
97	Wire tailed swallow	*Hirundo smithii*	*Hirundinidae*
98	Yellow wagtail	*Motacilla flava*	*Muscicapidae*
99	Yellow-headed wagtail	*Motacilla citreola*	*Muscicapidae*

Common medicinal plants of Poonch forest division

S. No.	Botanical Name	Family	Local Name
1	*Abies pindrow*	*Pinaceae*	Tung
2	*Aconitum heterophylum*	*Ranunculaceae*	Atish
3	*Aconitum vialaceumJacquem*	*Ranunculaceae*	Mohand
4	*Adiantum venustum*	*Pteridaceae*	Kakbai
5	*Aesculus indica*	*Hippocastanaceae*	Haandoon
6	*Allium cepa*	*Liliaceae*	Gundh
7	*Achyranthus aspera*	*Amaranthaceae*	Puth Kunda
8	*Achillea millefolium*	*Asteraceae*	Kungi.
9	*Ajuga Parviflora*	*Lamiaceae*	Jan-i-adam
10	*Artemisia roxburghiana*	*Asteraceae*	Jangli ajwan
11	*Artemisia absinthum*	*Asteraceae*	Tithwan
12	*Arnebia benthamii*	*Boraginaceae*	Gaozaban/Kahzaban
13	*Allium humile*	*Liliaceae*	Jangli Thom
14	*Berberis lyceum*	*Berbaridaceae*	Kali sumbali
15	*Bergenia ciliata*	*Saxifragaceae*	Butpio
16	*Cannabis sativa*	*Cannabinaceae*	Bhang
17	*Calendula officinalis*	*Asteraceae*	Hamesh Bahar
18	*Centaurea iberica*	*Asteraceae*	Krech
19	*Cichorium intybus*	*Asteraceae*	Kasni/Wari Hundh
20	*Conyza canadensis*	*Asteraceae*	Shallut
21	*Coriandrum sativum*	*Apiaceae*	Daniwaal
22	*Cucumis sativus*	*Cucurbitaceae*	Laer
23	*Carissa opaca*	*Apocynaceae*	Garna
24	*Chenopodium album*	*Chenopodiaceae*	Bettu
25	*Codonopsis ovata*	*Campanulaceae*	Ludut
26	*Coriaria nepalensis*	*Coronariaceae*	Reekhni
27	*Cydonia oblonga*	*Rosaceae*	Bumchuont
28	*Cuscuta reflexa*	*Cuscutaceae*	Kuklipoth
29	*Carissa caranta*	*Apocynaceae*	Garanda
30	*Calendula officinalis*	*Asteraceae*	Sadberga
31	*Daphne papyracea*	*Thymeliaceae*	Wild pepper
32	*Debregeasia longifolia*	*Debregeasia*	Sandari
33	*Dioscorea deltoidea*	*Dioscoreaceae*	Kala ganda
34	*Diplazium frondosum*	*Athyriaceae*	Khandhor, Kasror
35	*Desmodium podocarpum*	*Papilionaceae*	Sukhy-ni-Jari
36	*Euphorbia helioscopia*	*Euphorbiaceae*	Gur-Sochal
37	*Euphorbia royleana*	*Euphorbiaceae*	Thor
38	*Elsholtzia fruticosa*	*Lamiaceae.*	Mushk buti
39	*Foeniculum vulgare*	*Apiaceae*	Bodiyaan
40	*Fumaria indica*	*Fumariaceae*	Shahtar
41	*Ficus auriculata*	*Moraceae*	Triambal
42	*Fragaria indica*	*Rosaceae*	Punjakha
43	*Fragaria nubicola*	*Rosaceae*	Jal bunonoo
44	*Lathyrus sativus*	*Fabaceae*	Khesri
45	*Galium aparine*	*Rubiaceae*	Khorti
46	*Galinsoga parviflora*	*Asteraceae*	Marchawagan Ghasa

S. No.	Botanical Name	Family	Local Name
47	*Geranium wallichianum*	*Geraniaceae*	Ratanjo
48	*Helianthus annuus*	*Asteraceae*	Gulaftab
49	*Indigofera heterantha*	*Fabaceae*	Kathi
50	*Juglans regia*	*Juglandaceae*	Duon
51	*Jurinea dolomiaea*	*Asteraceae*	Dupha/Thandi Jaid
52	*Linum usitatissimum*	*Linaceae*	Alish
53	*Mentha longifolia*	*Lamiaceae*	Pudina
54	*Morchella esculenta*	*Helvellaceae*	Gugchi
55	*Marrubium vulgare*	*Lamiaceae*	Troper
56	*Melia azedarach*	*Meliaceae*	Dharek
57	*Morus nigra*	*Moraceae*	Tul kull
58	*Mallotus philippensis*	*Euphorbiaceae*	Kamella
59	*Origanum vulgare*	*Lamiaceae*	Sathra
60	*Oxyria digyna*	*Polygonaceae*	Kalashi
61	*Oxalis corniculata*	*Oxalidaceae*	Peeli Khatti
62	*Picorhiza kurroa*	*Scrophulariaceae*	Koud
63	*Pinus roxburghii*	*Pinaceae*	Chirpine
64	*Platanus orientalis*	*Platanaceae*	Chinar
65	*Podophyllum hexandrum*	*Podophyllaceae*	Bunkakri
66	*Plantago major Linn.*	*Plantaginaceae*	Bud Gulla
67	*Podophyllum hexandrum*	*Podophyllaceae*	Wanwgun
68	*Polygonum amplexicaulis*	*Polygalaceae*	Masloon
69	*Pteridium aquilibrium*	*Pteridiaceae*	Kakaie
70	*Prunella vulgaris*	*Laminaceae*	Kalaveuth
71	*Punica granatum*	*Punicaceae*	Daruna
72	*Pyrus pashia*	*Rosaceae*	Kainth
73	*Rhododendron arboreum*	*Ericaceae*	Hardulli
74	*Rumex hastatus*	*Polygalaceae*	Khatimal
75	*Ricinus communis*	*Euphorbiaceae*	Harnoli
76	*Saussurea costus*	*Asteraceae*	Kouth
77	*Solanum nigrum*	*Solanaceae*	Makoy
78	*Sonchus asper*	*Asteraceae*	Hundh
79	*Solanum nigrum*	*Solanaceae*	Kachmach
80	*Thymus serculum*	*Lamiaceae*	Merchari
81	*Xanthoxylum alatum*	*Rutaceae*	Timbru Timber
82	*Uritica dioica*	*Urticaceae*	Soi
83	*Valeriana jatamansi*	*Valerianaceae*	Mushkibala
84	*Viburnum grandiflorum*	*Caprifoliaceae*	Guchh
85	*Verbascum thapsus*	*Verbenaceae*	Gidar tomaku
86	*Vitex negundo*	*Verbenaceae*	Bana.

Part I

Summary of the facts on which proposals are based

Chapter –I

The tract dealt with

1.1. Name and situation:

1.1.1. This Working Plan covers the Forests of Haveli, Surankote and Mendhar Ranges of the Poonch Forest Division. These Forests lie in the extreme northwest corner of Jammu Province extending over 951 square kilometres.

Table 1.1: Extent of Poonch Forest Division in Latitude and Longitude wise can be given as:

Northern Limit	Southern Limit	Eastern Limit	Western Limit
33^0 - 59'-45.96"	33^0 -25'-21.35"	74^0 - 34'-35.47"	73^0 - 58'-54.40"

Its boundaries coincide with those of District Poonch.

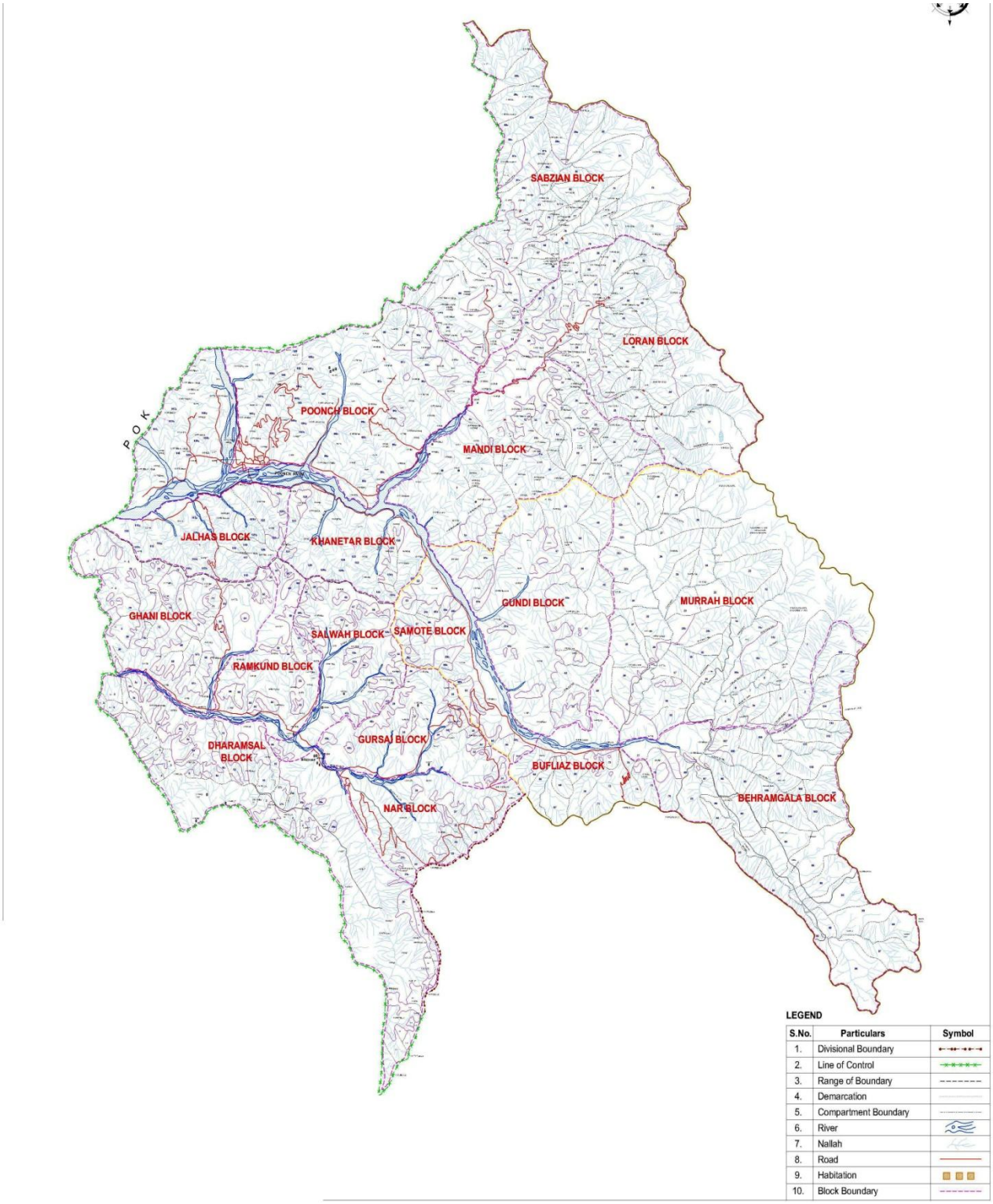
1.1.2. Initially these Forests were past of the earstwhile Rajouri Forest Division which was created after the disturbances of 1947 by amalgamating parts of Mirpur Forest Division with old Poonch Jagir falling on the Indian side of the Line of Control. Later on, in February 1963, parts of erstwhile Poonch Jagir were separated from Rajouri Forest Division to form Soil Conservator Division Poonch which was subsequently renamed in March 1981 as the present Poonch Forest Division.

1.1.3. The erstwhile territorial Haveli and Mendhar Ranges which formed the Poonch Forest Division alongwith the functional Soil Conservation Range were reconstituted for administrative reasons to form the present three territorial Ranges namely Haveli, Mendhar and Surankote in June 1980.

1.1.4. The Forest are bounded on the North and Northeast by the great Pir Panjal Ranges which separate it from the valley of Kashmir, on South by Rajouri Forest Division and in the West by the Line of Control.

1.1.5. The extreme length of the Division as a crow flies from North to South is 62 Km and from East to West is 53 Km.

Figure 1: Existing Poonch Forest Division:



1.2. Configuration of the ground:

1.2.1. Most of the tract is very hilly and rugged. High Altitude Mountains are met in the North and Northeast of the division falling in Haveli and Surankote Ranges where the altitude rises upto 4493 m at Sunset peak in the Pir Panjal Range. Forests in Mendhar Range are on moderately sloped undulating hills where the lowest altitude of 768 m is met west of Balnoi in Mendhar Nala.

1.2.2. The division lies in the top catchment of Poonch River which drains it out of Pakistan occupied Kashmir before confluencing into the river Jhelum.

1.2.3. Major portion of Haveli Range is drained by Mandi Nala which joins with Suran River at Kalai. The Suran River downwards kalar known as Poonch river. Darungali and Betar Nallahs also drain out a small portion of Haveli-i Range into Poonch River. However, most of their catchment falls beyond the line of control. Jhallas block of Haveli Range directly drains into Poonch River through a network of streams.

1.2.4. Through a network of streams Mendhar Range is entirely drained by Mendhar River which finally joins the Poonch River just across the Line of Control.

1.2.5. Suran River drains Surankote Range with its main tributraies as chhapar Nallah on the South and Chang Nallah on the north.

1.3. Geology, rock & soil:

1.3.1. The Poonch district of J&K State is covered by the rock formations ranging in age from Cambro-Silurain to Pliocene.

Table 1.2 : The stratigraphic and tectonic set up these formations are as under:

Stratigraphic set up	Tectonic set up (North)
Alluvium, River terraces, Moraines	Panjal Volcanics
Siwalik Middle Siwalik Formation	Agglomeratic-C-Slate
Group Murree:- Lower Siwalik Formation Upper Murree Formation	Unconformity
Group :- Lower Murred Formation	Kalamund Formation
Lokhan Limestone	Infolded younger (carbon-iferous)rocks
Mandi Group “Great Limestone” (Inli of Ranjoti)	Semi-crystalline, grey to pale cream coloured limestone.
Acid intrusive	Pale cream coloured limestone
Basic intrusive	
Panjal Volcanics	Fault
Agglomeratic Slate	Rajpur Formation
Baila Formation	Unconformity
Gamir Formation	Mandi Group
Kalamund Formation (Tanawals)	Fault
Bafliaz Formation (Dogra Slates)	Panjal Volcanics
	Agglimeratic Slate
	Baila Formation
	Gamir Formation
	Murree Group

	Murree Group
	Conformable contact
	Siwalik Group (South)

1.3.2. Lithological description:

1. **Bafliaz formation:** This formation named after Bafliaz village comprises the older meta-sediments in the area. Grey slates, phyllites and schists with thin intercalated quartzite bands and thick pene-contemporaneous lava flows constitute the main lithounits of this formation. The formation is exposed between Doda peak (3127m) in the north west to Bafliaz in the South east. Best exposures are seen in Mandi Loran and Bafliaz Behramgala road sections.
2. **Kalamund formation:** This formation named after Kalamund area north east of Bafliaz comprises massive and schistose quartzite, arenaceous slates, quartz sericite schist, gritty and pebbly quartzite. The quartzite which forms the main lithounit of this formation is white to pale-yellow and grey in colour. The associated arenaceous slates are of grey, greenish-grey and Khaki colours. This formation is exposed between Loran and Kalamund area.
3. **Gamir formation:** This formation named after Gamir village situated west of Thanamandi comprises quartzite, shales, limestone, pebbly slates and tuffs. The quartzite is greyish white to white in colour, coarse grained to gritty and pebbly. The shales are of purple, grey and Khaki colours. The limestone is grey, cream and purple coloured, flaggy and lenticular. This formation tectonically rests upon the Murrees and is exposed between line of control north west of shahpur and Bhata Dhurian south east of Surankote. It gets completely eliminated at some places along the Murree thrust.
4. **Baila formation:** This formation named after Baila village situated south east of Mandi comprises carbonaceous shales, calcareous slates and nodular limestone.Good exposures of this formation are seen near Daraba on Surankote Bafliaz road.
5. **Agglomeratic slate:** This formation comprises rocks of varying litho logical characters from grey coloured slates to gritty and pebbly slates, grey wacke, gritty and conglomeratic quartzite, conglomerate, agglomerates, and dark grey to black slates, tuffs and ash beds. The black slates, tuffs and ash beds occurring towards top are plant fossil-bearing at some places. This formations occurs top two different tectonic dispositions. In the para-autochthonous folded belt, it is exposed between line of control north west of shahpur and west of Dhartparta. In the nappa zone, it is exposed along and south of the axis of the Pir Panjal Range.
6. **Panjal volcanics:** This formation comprises a thick pile of massive and amygdaloidal, light to dark grey, light to dark green and purple coloured lava flows, towards top, the formation contains purple, green and orange coloured ash beds. They are well laminated and shaly looking often veined by steatite, Gondvana plant fossils. Lenses or quartzite are present within the lava flows south west of Mandi.

   In the para-autochthonous folded belt, this formation is exposed between line of control north west of Shahpur and dhartparta west of Dhera-Ki-Gali. A fine section of this formation is seen in the gorge of Mandi valley between 1 Km north of Sekhlu and Mandi where about 600 metres thick lava flows are exposed. In the nappe zone, it forms the submit zone of the Pir Panjal Range.

7. **Mandi group:** In the para-autochthonous folded belt, the Panjal volcanic are overlain by a thick succession of rocks ranging in age from Permian to Jurassic, grouped into Mandi Group, named after Mandi village where these rocks show maximum development. The group starts with dark grey to cream coloured semi-crystalline limestone full of crinoidal stems, followed upward by coral limestone, green and purple tuffaceous shales/slates with thinnbands of quartzite grey coloured arenaceous limestones, white coloured fine to medium grained quartzite sandy limestone, dark grey ferruginous shales and slates, grey to buff coloured limestone, gritty limestone, silty and shale, hard yellow weathering buff coloured limestone and light to dark grey shales and slates full of needles and plates of calcite. The rock have yielded a rich faunal asseblarge of Permian, Triassic and Jurassic ages, The rocks are exposed between North of Shahpur in the north west and west of chamer-Ki Gali in the south east.
8. **Great limestone (Ranjoti Inlier):** This unfossiliferous limestone occurring as an inlier within Murrees forms the ridge namely the Ranjoti ridge extending in NWSE direction. The length of the ridge is about 30 Km with an average width of about 02 Km. A much silicified and in part dolomitized, compact, homogeneous limestone is the sole component rock of the inlier. The limestone is bluish grey to cream coloured, generally thin bedded, jointed and irregularly fissured. Its base is nowhere exposed, while its top is unconformably covered at the north east bnoundary by the Docene rocks of Subathu facies. The ilier is mainly exposed across the line of control.
9. **Rajpur formation:** The Mandi group is unconformably overlain by Econece rocks named as Rajpur Formation after Rajpur village situated on these rocks. The formation comprises mummulitic limestone and variegated shales. The nummulitic limestone comprises hard, massive, dark grey to sooty black foraminiferal limestone with shale partings. The variegated shales comprise purple, red and green shales and siltstone traversed by numerous calcite veins. The rocks are exposed between north of shahpur in the North West and Bafliaz in the south east.
10. **Jokhan bituminous limestone:** A band of highly bituminous marine limestone and calc shales exposed within Murrees near Sathra on Poonch-Mandi road has been designated (Jokhan) limestone after Jokhan village. The limestone is dense to fine grained with finely granular matrix in which there is some finely distributed interstitial asphalt. Veins of hard solidified bitumem are numerous. It possesses, besides fetied smell, a strong odour of kerosene when firstly hammered.
11. **Murree group:** More than 1/3rd of Poonch district is covered by a broad belt of Murree rocks striking in NWSE direction. The Murree Group is divisible into two formations, (1) Lower Murree (2) Upper Murree. The lower Murree formation comprises about 1200 meteres thick concretionary clays, pseudoconglomerates (ossiferous at places) red, deep purple to chocolate coloured shales and siltstone with occasional green phosphatic shales and abundant milk white vein calcite, thin argillaceous limestone partings and hard fine grained, deep red purple and grey slab like sandsone with pseudoconglomerate bands. The upper Murree Formation is about 600 metres thick. It comprise a red, purple, grey and buff shales, soft, crumbling, coarse micaceous sandstone of pale grey and brown tints with central cores of hard, grey sandstone. The rocks are rich in plant fossils.

    The Murree Group is exposed south of Murree thrust tracable from line of control north west of shahpur to Bhata Dhurian.

12. **Siwalik group:** In Poonch area, the Murree Group is conformably overlain by Siwalik Group which comprises rocks exhibiting a facies markedly different from that of Potwar, salt Range and Kangra area. The group is divisible into two formations (1) Lower Siwalik Formation (2) Middle Siwalik Formations. The lower Siwalik Formation comprises about 900 to 1200 meter thick hard sandstone often pebbly with subordinate red, purple, calcareous and arenaceous clays in the lower part (Plandri Member). In the upper part (Mang Member), it comprises about 900 to 1200 meters thick hard and compact calcareous clays with subordinate sandstone. The middle siwalik formation comprises about 200 to 450 meters thick hard semi nodular pale red clays and orange and brown incoherent sandstone.The siwaliks are exposed mainly across the line of control. A small oval shaped outlier of lower siwalik within upper Murrees is exposed in the Mendhar valley.
13. **Basic Intrusives :** Basic intrusive of Gabbra/Doletite composition have been observed in the Agglomeratic Slate of nappe zone east of Behram Gala, at the foot of Tatakuti and north of Nurpur pass. At Bafliaz, Keratophyree like hypabysal rocks have been observed intruded into Bafliaz formation.

14. Acid Intrusives :

(a) Kopra gneiss: It is granite gneiss named after Kopra hill (3191 m) North West of gagrain. It is instrusive into Bafliaz formation and Kalamund formation. The intrusive body is about 10 km long running in NNW direction from Gagrian to Dara and beyond, tapering out in the north.

(b) Rhyoliote felsite: Allied to the Kora granite gneiss are sills of rhyolite felsites composition intrusive into Agglimeratic Slate of mappe zone exposed in Ratanpir-Wawalkot ridge.

15. **Younger rocks (Carboniferous) infolded in older metasediments**: Rocks having lithological similarities with fenestella shale and Gondwana plant bed have been reported occurring as younger sediments infolded in older metasedoments in Chang nala and Mandi Loran Sections.
16. **Tectonics:** The rocks of para autochthonous folded belt and mappe zone have a general NW-SE strike trend with north easterly dips. These are two major tectonic planes separating the rocks into two tectonic zone (para auto chthonous) folded belt, while along the Murree thrust, the rocks of the Para-autochthonous folded belt come in contact with the Murrees. In between these two major tectonic planes, there are sympathetic faults between the various formations of para autochthonous folded belt. The rocks of Murree Group have also NW-SE strike trend with dips on either side due to type of folding to which these rocks have been involved.

1.3.2. **Mineral resources :**

1. **Glass sand:** Good quality quartzite analysing over 96.6% for use as raw material in the manufacturing of glass and sodium silicate has been located by G.S.I. at Batla Hill. The experiments conducted by the Central Glass and Ceramic Institute, Calcutta showed that the Batla Hill quartzite is suitable for manufacture of grade II type of glass. The removal of iron from this makes it suitable for the manufacture of crystal glass ware.

2. **Limestone:** Cement grade limestone analysing 45-50% Ca0, 2.15%, Mgo & 8.7% Sio2 have been located within the Rajpura formation of Mandi valley. G.S.I. has carried out sampling of

Baila limestone formation and the analytical data indicates that CaO is in the range of 34.5% to 50.14% and acid insolubles 6.09% to 29.70% except for the high percentage of acid insolubles, the limestone appears to satisfy the specification of cement Grade limestone.

The limestone band exposed north of Rajpura temple in Mandi village has been found to be suitable for cement manufacture with CaO percentage ranging from 49.16% to 52.56% and acid insoluble Mgo 6.25% to 9.49%.

3. **Building materials:** The quartzite bands in all the above formations are a good source of building material. Specially, the sandstones from Murree Formation furnish unlimited quantities of building material for bridges and public works. Panjal trap is also a source of excellent building material.

4. **Iron ore:** Iron slag heaps are found near Nar and North of Gundi. The raw material for somelting appears to have been obtained from the hematitic inrostone shales occurring in the economic. Iron ore has also been reported to occur to Suran, Ber and loran. These deposits, however, are of poor quality and have limited reserves.

1.3.3. **Soil:** The Soil in most of the area very clay I am to sandy loam from Triassic rock formations. In Chir area sandy loam soil of light brown colour is frequently met. The soil comprises blocks of spheroid structures and is coarse grained. Consequently it is subjected to heavy soil erosion. Due heavy grazing and other biotic interference not much of humans is seen anywhere in this division.

1.4. Climate and rainfall: The climate of the tract varies mainly with its altitude. In valleys surrounding hills lying below 1500 m subtropical climate prevails as in parts of Mendhar and Haveli Ranges including the townships of Poonch and Mendhar.

Table 1.3 : The average monthly rain fall recorded (in mm) at Poonch by Irrigation and Flood Control Division, Poonch is as follows:

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
2007	0.18	0.97	0.37	0.035	Nil	2.38	2.16	1.76	0.42	Nil	Nil	0.67
2008	2.03	0.92	Nil	0.57	1.12	3.76	5.32	1.23	0.097	0.23	0.097	1.13
2009	0.53	1.03	0.23	1.13	0.27	0.30	1.79	2.16	0.34	Nil	Nil	Nil
2010	Nil	0.32	Nil	Nil	0.61	0.24	2.35	1.64	0.27	0.16	Nil	0.16
2011	0.16	2.10	1.0	1.27	0.16	1.14	2.35	1.97	1.64	0.097	Nil	0.13
2012	1.61	1.31	0.26	2.44	1.03	0.27	1.16	3.65	2	Nil	0.14	0.42
2013	0.97	0.92	0.35	0.67	0.30	0.23	1.43	3.44	0.24	0.23	0.34	Nil
2014	0.68	0.94	2.60	0.80	0.84	0.20	1.70	3.34	3.67	0.067	Nil	Nil
2015	0.20	1.40	3.40	0.84	0.37	0.64	1.84	0.6	1.73	0.32	0.31	0.34

1.5. Water supply:

1.5.1. The high mountainous ranges, which are snow bound for the better part of the year in Haveli and Surankote Ranges, release water gradually throughout the summer. This forms main source of irrigation. In Mendhar Range on the other hand only a few streams are perennial. But the region abounds of natural springs which supply drinking water. However, as rainfall is wide distribute round the year scarcity of water is felt anywhere. Most of the streams are fit for wet slides.

1.6. Distribution and area:

1.6.1. The Area under the jurisdiction of Poonch Forest Division is spread over the entire Poonch District. The total geographical area of Poonch District is 167400 Ha (as per the Annual Administration Report by Jammu and Kashmir Forest Department 2011) of which the Forest area forms 50.44 %. The area of Poonch district calculated with GIS comes out to be 166014 Ha. The Forest area , in this case, comes out to be 50.87 % of total geographical area of Poonch district. Demarcated forest according to form-I (as per the information from Muhafiz khana, Jammu) is 60451.06 Ha.The details of demarcated forest are given in Appendix-I.

1.6.2. The Forests in the entire Mendhar Range, North West of Mandi Nallah in Haveli Range and the lower western portion of Surankote Range along Suran River are deeply honey combed with human habitation. In rest of the Haveli and Surankote Ranges forests form a continuous and compact belt. The top catchment of the streams above the tree line bears extensive bare rocks and alpine meadows, locally known as Dhok or Marg.

1.6.3. The forest area of the Division under the previous Plan was recorded as 84707.85 Hectares which does not includes forest area with PoK, area of Wildlife Sanctuary/Conservation Reserves and Area of Border forests.

S.No	Name of Range	Area of Range (in Ha)
1.	**Haveli**	38,001.00
2.	**Mendher**	7,683.85
3.	**Surankote**	39,023.00
		84,707.85

In addition to the above, 8512 Ha area under Wildlife Sanctuary & Conservation Reserves and 4382 Ha of area of Border forests exists as mentioned in the last working plan.

1.6.4. It is to be stated that the compartment no.'s that are being followed are old ones instead of new ones as per the prescription of Sh. Vinod Ranjan's Plan. The details of area of individual compartments calculated with GIS technique along with the area of individual compartments according to previous working plan are given in Appendix-III.

Table 1.4: Table showing the Range wise distribution of forest area is as under:

Range	Total No. of Compartments including Sub-Compartments	S.No. Co (New No.)	Area (Ha)
Haveli	185	1a/H to 141/H	37488
Mendhar	107	1/M to 81/M	10406
Surankot	128	1/S to 116/S	44418
Grand Total			92312*

*The above table includes the areas of T.K. Wildlife Reserve in Surankote Range and Khara Wildlife Conservation reserve and Kulian Wildlife Conservation reserve in Haveli Range.

Table 1.5: Table showing the Range wise distribution of area (without including Wildlife areas) calculated during the current plan:

S.No	Name of Range	No of Blocks	No. of Beats	Area of Range (in Ha)
1.	**Haveli**	6	24	34442
2.	**Mendher**	6	22	10406
3.	**Surankote**	5	19	39599

		17	65	84447

1.6.5. Range wise distribution of area of Poonch forest division:

Range	Commercial Area					Uncommercial Area			Grand Total	Previous Estate Area
	Chir	Deodar	Kail	Fir/Spruce	Total	Broad Leaved	Blanks	Total		
Haveli	790	77	3034	10170	14071	6332	17085	23417	37488	36328
Mendhar	4395	0	0	0	4395	1759	4252	6011	10406	9739
Surankot	639	0	6598	12410	19647	2645	22126	24771	44418	44589
Total	5824	77	9632	22580	38113	10736	43463	54199	92312	90656
%age of total Division area	6.31	0.08	10.43	24.47	41.29	11.63	47.08	58.71	100	

Above includes the the area of 2 wildlife conservation reserve and one wildlife sanctuary which can be given as:

	Range	Area in current revision (Ha)	Previous Area(Ha)
T.K. Wildlife Reserve	Surankote	4819	5638
Khara WLC	Haveli	1948	1845
Kulian WLC	Haveli	1098	1029
Total		7865	8512

1.6.6. Lack of recognisable demarcation of the boundaries of these forests on the ground has resulted in lot of difficulties at the time of preparation of stock maps and consequent area computations.

1.6.7. The Forest area figures are based on the computation of the area by the use of GIS technique which is also recommended under the National Working Plan Code 2014. The Management Maps /Stock maps of individual compartment are also prepared using the GIS technique. The stock maps of individual compartments are prepared on a scale of 1:50,000 which are also verified by the ground truthing. By the use of GIS area under the water cover is also observed.

1.7. State of boundaries:

1.7.1. As recorded in the Hayat Khan's Plan Forests were first demarcated in the year 1904 when the boundaries were marked by pillars built of loose stone with a stone staked in the middle. He further mentioned that owing to the way in which prior demarcation , cultivation had eaten into the forest, the boundary line was often very complicated and with the above mentioned type of the boundary pillars encroachments were difficult to detect.

1.7.2. At the time of preparation of Dulloo's plan in early 60's the demarcation and settlement operations were in progress with the same type of boundary pillars. A complete record of which is not available now.

1.7.3. The length of demarcation line and the number of demarcation pillars were mentioned in the Sh.Vinod Ranjan's plan (based upon Digest of Forest Statistics of Department , 1969) with

break up for the erstwhile Haveli and Mendhar Ranges which were respectively on the north and south of Suran river.

Table 1.6: Table showing details of Boundary Pillars and Chaks:

Range (Old)	No.of Forest	Area of Forest	No. of Boundary Pillars Exterior	Length of Demarcation Line (Km)	No. of Internal Chaks	Area Of Internal Chaks (Ha)	No. of Boundary Pillars Internal	Length of Chak demarcation line (Km)
Haveli	50	37244.48	3928	688.89	149	568.30	1363	656.71
Mendhar	68	20699.78	6860	924.54	224	950.50	2183	185.90
Total	118	57944.26	10788	1613.43	373	1518.80	3546	842.16

1.7.4. The information pertaining to demarcated forests is available in Urdu language (Form 1) and all the records, which are pertaining to demaracated forests, were prepared in 1060/70's.The information is converted into English language and is reproduced in the Appendix I.

1.7.5. After two decades at present there is no trace of boundary pillars along the boundaries of forest. Large scale encroachment of forest areas has taken place adjoining habitations. The situation is particularly alarming in Mendhar Range. At many places entire hill slopes, from base to the top, have been encroached upon. The situation is further aggravated since the demarcation record available with the territorial division is scanty and incomplete.

1.7.6. In view of the above and considering the complexity and enormity of the problem fresh demarcation is required to be taken up with fresh settlement where ever necessary by a separate division created only for this purpose.

1.8. Legal position:

1.8.1. All demarcated Forests are the property of the state and are managed by the Jammu and Kashmir Forest Department. The control of fluctuating grazing is with the Forest Department closure of any Forest area upto ½ of any Forest subject to maximum of one quarter of the total area of Forest Range at a time with adequate and suitable provision for right of way can be effected by Forest Department with previous sanction of Minister incharge. In discharging its obligations the Forest Department deprives authority from the following enactments and rules made there under:

1. The Forest Act of Samvat 1987 Act No II of 1987 (1930 A.D.) as amended to date.
2. The Kuth Act 1978 (1921 A.D.) Act No I of 1978.
3. The Cattle trespassers Act 1977 (1920 A.D.) Act No. VIII of 1977.
4. The Khahcharai Act 2011 Act No XVIII of 2011 (1954 A.D.).
5. The J&K Public premises (Eviction of unauthorized occupants) Act 1959 Act No XIII of 1959.
6. The J&K land Improvement Schemes Act 1972 Act No XXIV of 1972.
7. The J&K State Forest Corporation Act 1978 Act No XII of 1978.
8. The J&K Wild life protection Act 1978 Act No XIII of 1978.
9. The J&K nationalization of Forest Working ordinance 1986 ordinance No V of 1986.
10. The J&K extraction of Resin Act Governor's Act No. VII of 1986.
11. The J&K Forest Notices.
12. Govt. Order No. 24 FST of 1990 Dated 15-01-1990.

13. The J&K Forest (Conservation) Amendment Act 2001 and J&K Forest (Conservation & Afforestation) Rules, 2000 (SRO 203 of 2000).
14. J&K Willow (Prohibition on Export and Movement) Act,2000 (Amended as on 26.06.2001) (Act No-XVI of 2000)
15. The Jammu and Kashmir (Rehabilitation of Degraded Forests and village plantation) Rules 1992

1.9. Rights and concessions:

1.9.1. No rights have been recognized by the State. The villagers including zamindars and other categories as classified in Jammu Forest Notice, living in and around the Forests have no rights in these forests; however they do enjoy liberal concessions from these Forests in lieu of obligatory discharge of certain duties as mentioned in Jammu Forest Notice. They also get free grant in case of natural calamity. Trees so obtained cannot be sold, bartered, exchanged or used other than the purpose sanctioned for.

1.9.2. Depending upon the distance from the Forest boundaries the concessionists have been classified into "A" "B" Class as for the purpose of granting major concessions like timber etc. The trees of Kail, Fir and Chir are granted from the demarcated Forests at highly concessional rates to the villagers residing in and around within a radius of 5 kms of demarcated forest for their bonafide domestic requirement only.

1.9.3. Other concessions for the local people are as under:

a. Timber for agriculture purpose: The timber particularly from broad leaved trees viz. Aesculus Indica is granted free of charge.

b. Firewood: Concessionists are free to collect dead and fallen wood from forests.

c. Minor Forest Produce: Except M.F.P. which are specifically prohibited and those covered for domestic and agricultural purpose free of charge.

d. Lopping: Excepting Conifers and special class broad leaved like Ash, Walnut , etc. Other trees may be lopped free of cost.

e. Grazing: Grass cutting and grazing is allowed in all Forest except those which are specifically closed for the purpose.

1.9.4. The obligations the concessionists are to discharge in lieu of those concessions include the rendering of assistance to the concerned Forest or Police officers.

a. In extinguishing fire in the forest.

b. In preventing offences against the state forest

c. In arresting and tracing offenders committing offences against state forests.

1.9.5. Timber Sale Depots are at Poonch, Mandi, Chandak, Mendhar, and Surankote.New depots have been opened up at Fatehpur, Khanetar, Khari, Mankote, Lassana, and Marhote. The timber in the form of scants is purchased from SFC for those depots and the issued to locals on concession rates. There are 12 departmental and 44 private timber sale depots.

Table 1.7 : Table showing Constituency-wise Timber sale depots falling in A, B, C zones

Constituency	Zone	Name of the TSD
Haveli	B	Fatehpur
	B	Mandi
	B	Chandak
	B	Khanetar

	B	Khari
Mendhar	B	Mendhar
	B	Mankote
Surankote	B	Lassana
	A	Marhote
Surankote	C	Surankote
Poonch	C	Poonch

1.9.6. **Statement showing trees issued on A class rates during the years:**

Year	Total Trees	Total (in cft)
2005-06	373	52181
2006-07	416	65813
2007-08	376	57229
2008-09	620	96592
2009-10	466	69164
2010-11	179	25150
2011-12	654	106225
2012-13	339	56550
2013-14	56	8703
2014-15	120	19168

1.9.7. Statement showing timber issued to locals B class concession of Haveli, Mendhar and Surankote from timber sale depots during the years.

Year	Ranges			
	Haveli	Mendhar	Surankot	Total
2005-06	2732.61	3869.78	5798.27	12400.66
2006-07	0.00	1802.05	2040.56	3842.61
2007-08	0.00	359.79	1761.66	2121.45
2008-09	5301.73	563.92	4112.83	10840.2
2009-10	22003.14	5393.04	953.24	28349.42
2010-11	6967.25	1874.45	1012.72	9854.42
2011-12	5378.52	2659.56	834.94	8873.02
2012-13	4889.52	1665.80	0	6555.32
2013-14*	7492.12	2462.61	1102.31	11057.04
2014-15*	8951.32	1983.45	653.48	11588.25

* Figures indicate total disposal at the end of month of March as break-up in terms of Concession, Departmental use, other sale depot are not provided.

1.9.8. Besides the above, some timber in also removed by the local inhabitants from these Forests illicitly. Most of the cases of illicit damage done by the locals when come to notice, are generally disposed or settled departmentally after recovery of cost and compensation at rate fixed by the Government from time to time.

Table 1.8: Table showing Status of registration of saw mills:

S. No.	Name of saw mill	Date of registration	Ownership	Location	Persons employed in the mill
1.	Zahoor	011/11-10-13	Zahoor Din	Poonch	2
2.	Ranjeet	012/17-10-13	Ranjeet Singh	Poonch	2
3.	Manjeet	013/17-10-13	Manjeet Singh	Poonch	2
4.	Pawan	014/14-11-13	Pawan Kumar	Poonch	2

1.10. Grazing:

1.10.1. Un-restricted uncontrolled and unscientific grazing as done in the Forests both by locals and nomadic cattle which is largely responsible for huge degradation of any good Fir, Chir and Broad Leaved Forests this Division and has invariable prevented the regeneration to establish. The village live stock overgraze the low lying areas during the Winter months and generally move to the high pasture lands i.e. Pir Panjal during summer season. Some of them also cross over to Kashmir Valley. The brunt of the other concessions enjoyed liberally by the locals is not as much as that of the unrestricted grazing and grass cuts. A little control by way of closing one half of any forest subject to the maximum of $1/4^{th}$ total area of a Range has not been taken advantage of or enforced, because of the abnormal conditions and after math of the 1947 Raids. A large number of Gujars and Bakkerwals pass through these Forests to their pastures twice a year and in the process cause formidable damage to the Forests. Grazing is being regulated under the Jammu and Kashmir Khahcharai Act 1954 and the rules framed there under. Kahcharai levy able for various categories of animals under the provisions of the Act amended vide S.R.O No. 147 of 11-03-1978.

1.10.2. **Statement showing live stock data as collected from Office of District Statistics and Evaluation Officer, Poonch:**

S.No.	Species	No. of animals
1	Buffaloes	113284
2	Goats	226662
3	Sheep	518078
4	Cows	92058
5	Poultry	183708

1.10.3. **Statement showing fluctuating live stock population grazing in the Forests of Poonch Forest Division enumerated by the territorial Division:**

Year	Sheep	Goat	Buffalo	Bull	Total
2005-06	9995	11315	1593	-	22903
2006-07	6039	4444	2165	-	12648
2007-08	8382	10535	1186	-	20103
2008-09	14789	12728	932	-	28449
2009-10	11415	10687	971	-	23073
2010-11	5085	3865	356	-	9306
2011-12	9896	11950	544	-	22390
2012-13	4047	2658	351	137	7193
2013-14	1910	3160	405	-	5475

2014-15	19535	10690	622	-	30847

1.10.4. **Statement showing Rates Charged as grazing fee:**

S.No.	Kind of Cattle	A. Rate	B. Rate
1	Goat	2.50	0.40
2	Sheep	0.65	0.20
3	Buffalo	11.25	3.25
4	Bull	11.25	3.25

1.10.5. **Statement show Revenue realized as fluctuating grazing fee:**

Year	Amount realized (in Rs.)
2005-06	21854.75
2006-07	25208.35
2007-08	15009.00
2008-09	16334.50
2009-10	15272.25
2010-11	11019.00
2011-12	11445.00
2012-13	5603.00
2013-14	5239.00
2014-15	11424.00

"A" Rates are charged from local cattle.
"B" for inter provincial movement of cattle.
"C" rates from foreign grazing.

1.10.6. Past and current prices:

The timber in the division area is supplied to people either directly from the forests or from the Timber Sale Depots. The price of timber direct from forest is governed as a proportion of the standard rates. The standard rate proposed in the year 1992 is still in vogue and in course of time has become completely outdated. There is a need to revise the standard rates to give it some semblance of the prevailing market rate. The financial feasibility of working plan would depend on dynamic fixation of rates of timber annually in time with the market price movement. The standard rate adopted at present is as below.

Dia-Class	Fir	Deodar	Kail	Chir
0-10	170	110	70	40
10-20	650	410	270	110
20-30	1310	720	750	215
30-40	2450	1540	1130	625
40-50	4250	2740	2060	1480
50-60	6700	4560	3940	2830
60-70	10480	6780	6480	4570
70-80	14030	8890	9060	6260
80-90	18110	10880	10970	7990

90-100	24080	13620	13670	9020
100-110	26460	14940	14820	10000
110-120	28360	15280	15770	11400
120-130	29800	16000	16460	11810
130-140	30840	16320	17120	12170
140-150	32040	17000	17580	12420
150 & over	33120	17400	17900	17580

1.10.7. The supply of timber from Timber Sale Depots are done on depot rates prescribed by the Government every year.

Table 1.9: Table showing the present rate and previous revision of the depot rates is given below for reference.

S. No.	Govt. order	Zone	Timber Form	Deodar	Kail	Fir
1.	212 FST of 2010 dt:13/5/2010	A	Log	185	130	74
			Sawn	215	160	104
		B	Log	345	245	138
			Sawn	375	275	168
		C	Log	513	360	205
			Sawn	543	390	235
2.	278 FST of 2006 dt:19/5/2006	A	Log	161	102	59
			Sawn	202	121	81
		B	Log	246	160	120
			Sawn	281	193	136
		C	Log	299	173	119
			Sawn	362	231	132
		M/C	Log	391	226	156
			Sawn	474	307	173
3.	314 FST of 2005 dt:1/8/2005	A	Log	146	93	54
			Sawn	184	110	74
		B	Log	197	128	96
			Sawn	225	154	109
		C	Log	299	173	119
			Sawn	362	231	132
		M/C	Log	391	226	156
			Sawn	474	307	173
4.	501 FST of 2003 dt:21/10/2003	A	Log	146	93	54
			Sawn	184	110	74
		B	Log	197	128	96
			Sawn	225	154	109

S. No.	Govt. order	Zone	Timber Form	Deodar	Kail	Fir
		C	Log	272	157	108
			Sawn	329	213	120
5.	517 FST of 2002 dt:31/1/2002	A	Log	162	103	60
			Sawn	204	122	82
		B	Log	246	160	120
			Sawn	281	192	136
		C	Log	340	196	134
			Sawn	411	266	150

The demand for timber has not been met by supply through Government outlets and that has been supplemented by sale of timber by private Timber Sale Depots. The private TSDs are registered by the Divisional Forest Officer. The private TSDs prefer sale of imported timber, however, the demand for the same is still to catch up.

Table 1.10: Table showing the average rates of timber in the local Poonch market from the private Timber Sale Depots is as under.

Year	Species(Imported)	Rate/ cft.
2015-16	Imported Pine Salvester	650
	Saal	1850
	Razaq	1350

Table 1.11: Table showing the rate of timber sold by SFC Depot at Jammu is as below.

Year	Species	Rate/ cft.	Class
2012-13	Deodar	1841	B
	Deodar	1013	C
	Kail	1142	B
	Kail	584	C

Chapter -II

A-Forest flora

2.1. Composition and condition of the crop:

2.1.1. Fir (*Abies Pindrow*) is the predominant species of Poonch Forest Division occupying about 22.5% of the total area. Spruce (*Picean Smithiana*) is also found scattered and mixed with Fir in small proportion and Yew (*Texus Baccata*) is negligible in occurrence.

2.1.2. Amongst Conifer Chir (*Pinus Roxburghii*) comes next to Fir in terms of occurrence and extends by and large gregariously over 9.5% of the total area.

2.1.3. In about 5% of the total Divisional area Kail (*Pinus Wallichiana*) is found in pure patches below Fir Forests and mixed with Fir in the transition zone. On the cooler and shady aspects Kail is monotonously pure and forms even aged crop. It holds its own on sunnier aspects against fir.

2.1.4. One of the characteristics of the division is that deodar is conspicuous by its absence over the most part of the tract. However there is sufficient evidence to believe that deodar occupied fairly a good portion of Loran Valley in Haveli Range. A few scattered patches here and there is this valley are the remnants of what was once a deodar tract in this area. This species having been subjected to heavy and unrestricted exploitation in the past (pre-conservancy) period appears to have resulted in its extinction from this area. The blanks thus created were colonized by kail on hotter exposed aspects and by temperate broad leaved species like *Aesculus indica, Prunus padus, Juglans regia,* etc.

2.1.5. Broad leaved species are found in about 15% of the total area. Most of which lies in Haveli and Surankot ranges. Banj Oak (*Quercus Incana*) is the predominant species which is found in about half of this area as the main crop. Subtropical broad leaved forests are met in lower regions of Mendhar ranges but the area under them is very small.

2.1.6. Tree growth ends with low junipers and birch at about 12000'. Beyond this the tract is generally full of alpine herbs like Dadhoor *(Caesalpinia), Shivlingl (Dipuicyclos), Ghalot (Ceropegia), Gajarmoola (Eranthemum)* which made their appearance at the advent of spring with their multicolored flowers.

2.1.7. Forests on the whole are poorly stocked. As usual in this province village lands alternate with chunks of forests and these bits of forests themselves are honeycombed with cultivations and have to beat the brunt of over grazing and browsing, with incidental malpractices of lopping, illicit damage and *nautors*. Chir forests are subject to annual forest fires and as such are generally open and thinly stocked.Faulty methods of cultivation of revenue chaks and in area of illicit *nautors* from nuclei of erosion.

2.1.8. For purpose of general description, the forests may be divided under three distinct zones of vegetation, namely:

(1) Forests of the sub-tropical region.

(2) Forests of the temperate region.

(3) Vegetation in the alpine zone.

2.1.9. Sub-Tropical zone: About 15% of the total area of the division falls under subtropical zone most of which lies in Mendhar Range. Chir is the main species of this zone covering about 65% of its area. The common associates are *Quercus lecotrichophora*, *Pyrus pashia, Vasica, Rubus ellipticus, Indigofara pulchella.*

Chir has been observed to ascend even to 7000' on sunnier aspects and is associated with banj oak and other broad leave d species at higher elevations. In areas where it is mixed with oak and other broad leaved species like *Jaman* and *Sandan* the quality is found to be definitely better. The stocking of these forests is in general lamentably poor.The crop is predominantly young and middle aged. The quality is poor and Regeneration is no problem if protected against grazing and fire.

Broad leaved species cover about 10% of the area and the rest 25% is scrub or blank.

The common broad leaved tress is:

These are mainly brushwood Forests along the River Chenab and its tributaries the Anji, Rud and others. *Euphorbia royleana* is Characteristics of such areas which indicate Zerophytic vegetation. The main species found are *Punica granatum,Flacortia romentchii,Ficus roxburghii, Ougeinia dalbergoides, Machilus* spp ,*Oogenia dalbergiodes , Nitragyna parviflora,P.ovalifolia ,Rhododendron arboretum,Bauhinia species,Dalbergia sissoo,Olea cuspiodata,Accacia modesta,Cassia fistula, Terminalia bellerica, Anogeissusw latifolia, Mallotus phillipinensis, Lannea cormandalica,Bombex cebia, Syzygiym cumini* etc.

Undergrowth mainly consists of *Adhatoda vasica and Dodonaea viscose, wood Fordia fruiticicosa, Berberis Lycium, Myrsine africana, Nerium indicum, Colebrookia oppositifolia, Zizyphus jujuba.*

The ground flora comprises of *Vioala serpens* and variety of grasses and ferns.

Ban-oak forests: Within the sub-tropical pine zone, large belts of oak forests either pure or mixed of Quercus leucutrichophora,Q. floribunda,Q.glauca, Q. baloot, Q. semecarpifolia etc generally known Bunj-Moru and Kharsu oak with other broad-leaved species like Litsea chinensis (Medda sakk), Symplocos crataqegoides, Pistacia integerrima etc. These forests are usually subjected to heavy grazing and lopping and are even at some places cleared for cultivation.

2.1.10. Temperate zone: About 55% of the total area of the division falls under Temperate zone falling in Haveli and Surankot Ranges. Fir is the predominant species of this zone which occurs almost pure with sprinkling of spruce, *Quercus semecarpifolia*, etc. The lower belt of this zone consists of Oak forests mixed chiefly with *Rhododendron arboreum* and *Lyonia oalifolia* (earlier called *Pieris ovalifolia*).

The Oak Forests found in the lower belt of this zone, close to habitations bear the heaviest brunt of encroachments and other biotic pressures so that over a major portion these have been degraded into scrub forests with scant tree cover. Because of heavy lopping trees particularly of *Q. incana* have changed into a bushy shape.

2.1.11. Deodar is conspicuous by its absence in this zone and Kail is disproportionately low in area.Mohd. Hayat Khan in the Working Plan for Poonch Forest mentioned in the year 1933 owing to their easy accessibility , heavy and injurious fellings were carried out and very little Deodar is left. Now only a few Deodar remains amidst a crop of blue pine, and these acting as seed bearers have rise to a few patches of young poles. During recent years efforts have

been made to increase the proportion of Deodar in these forests and have been very successful. However, this trend did not last long and the remnants further perished under the on-slaught of biotic interferences.

2.1.12. Most of the broad leaved forests of this zone under heavy biotic pressure are fast depleting into scrubs particularly on the fringes of habitations.

The common species are: *Quercus incana , Q. dilatata , Q. semecarpofolia , Juglans regia , Populus ciliata , Acer caesium , Celtis australis , Aesculus indica , Ulmus wallichiana , Pyrus pashia , Taxus baccata , Machilus duthei , Buxus wallichiana , Prunus padus , Alnus nitida etc.*

2.1.13. Alpine zone: Covering over 30% of the total area of the division, this vegetation zone occupies the top portion of Haveli and Surankot Ranges where the altitude rises above 3000 m. Above Fir forests are found Junipers, Birch, Rhododendrons, Willous and Spiraca spp. beyond them exists vast expenses of summer meadows rich in herbaceous medicinal plants, interrupted by stony wastes, permanent snow beds and natural lakes particularly on the top ridge of Pir Panjal.

2.2. Genereal description of the forest type:

On the basis of the 'Revised Survey of the Forest Types of India' by Champion and Seth the Forest types.The following abbreviations are used:

I. Top canopy trees
II. Second storey trees
III. Shrubs
IV. Herbs and Grasses
V. Climbers

2.2.1. Himalayan Chir Pine Forests (9/C1D): This sub-type occurs between 900 metre to 1800 metre elevation in the whole of Mendhar Range and Jhallas and Lassana blocks. Chir forms the top canopy gregariously 30-35 m high. These are only scattered trees representing the middle canopy. The periodic fires prevent the development of shrubs which would otherwise form undergrowth. During monsoon a rich grass growth develops which is mostly cut and removed by the local villagers. Soil remains covered with pine needles during summer forming inflammable material.

Floristics:

I. *Pinus roxburghii*

II. *Quercus leucotricophora, Syzygium cuminii, Rhododendron arboreum, Pyrus pashia, Ficus roxburghii, Pyrus pahia, Emblica officinalis, Pistacia intergerrima, Zanthoxylum alatum, Crataegus crenulata, Olea cuspidate,* etc.

III. *Myrsine africana, Rubus ellipticus, Princepia utilis, Colebrookia Oppositifolia, Berberis lycium, Wood-fordia fruticosa,* etc.

IV(a).*Gallium rotundifolium, Rumex hestatus , Myositis mycrantha, Taraxacum officinale ,Astemesia vulgaries.*

IV(b).*Cymbopogon spp , Cenchrus ciliaris , Arundinella intricata , Eulalia mollis , Agrostis alba.*

V. *Rosa moschata*

2.2.2. Himalayan Sub-Tropical Scrub (9/C1/DS1): In this Forest type occurring in the Chir zone the overwood is almost completely absent and has been either destroyed or perhaps has not been able to develop owing to excessively dry and shallow soil. This forest type is met only occasionally scattered in patches in Mendhar Range. The predominant shrubby growth consists of *Carissa spinarum, Dodonea viscosa, Adhatoda vasioa, Berberis lycium, Wood fordia Fruticosa, etc*.

2.2.3. Sub-Tropical Euphorbia (9/C1/DS2): *Euphorbia royleana* forms consociations in patches. Their distribution is related to edaphic factors, notably dry rocky ridges but under biotic pressure they extend and become dense and purer due to elimination of less resistant species. Other associates are *Carissa spinarum* and *Dodonaea viscosa* etc. This forest type is met only rarely and covers only a negligible area.

2.2.4. Banj Oak Forests (12/C1a): These forests occur extensively in Haveli and Surankot. Range in altitudinal zone ranging from 1800-2300 m. These forests are subjected to heavy damage through local inhabitants in the form of heavy lopping, uncontrolled grazing / browsing illicit felling and encroachments so that these forests have vanished over large areas.
Floristics:

I&II. *Quercus incana, Rhododendron arboreum, Lyonia ovalifolia, Pyrus pashia, Mechilus duthei, Pistacia integerrima, Ilex obpyrena.*

III. *Prinsepia utilis, Rubus spp., Berberis aristata, B. lycium, Viburnum spp., Desmodium tilliae-folium, Myrsine africana, Rhus cotinus, Indigofera spp;*

IV(a). *Rumex hestatus, Myosotis mycrantha, Plectranthus rugosus, Smilax spp.*

IV(b). *Thi grasses.*

V. *Vitis himalayana, Hedera helix, Rosa moschata.*

2.2.5. Moru Oak Forest (12/C1b): This type occurs in relatively a narrow belt above Banj Oak about 2000 m to 2500 m. This is more mesophytic. These forests are subjected to heavy lopping.

Floristics:

I. *Quercus dilatata, Q.incama, Abies pindrow.*
II. *Machilus duthei, Rhododendron arboreum, Fraxinus spp., Taxus baccata, Lyonia ovalifolia.*
III. *Rubus spp. , Rosa macrophylla , Viburnum spp. , Berberis aristata , Strobilanthes wallichii, Desmodium spp. , Sarcococca saligna.*
IV. *Ferns and Grasses.*

2.2.6. Western mixed coniferous forests (12/C1d): The attractive and economically important Fir forests found extensively in Haveli and Surankot Ranges belong to this forest type. They are either pure Fir/Fir-Spruce-Blue Pine with admixture of broad leaved trees. Interspred are found open grassy and flowery meadows locally called 'Dhoks'. The altitudinal zone is 2100 m to 3000 m. Young trees are relatively deficient and regeneration is a problem in most of the forests due to overgrazing.

Floristics:

I. *Abies pindrow, Picea smithiana, Pinus wallichiana.*
II. *Quercus semecarpifolia , Juglans regia , Populus ciliata , Acer caesium , Celtis australis , Aesculus indica , Ulmus wallichiana , Pyrus pashia, Taxus baccata , Machilus duthei , Prunus padus , Alnus nitida , Buxus wallichiana.*
III. *Viburnum foetens, Plactranthus rugosus, Prinsepia utilis, Indigofera spp., Skimmia laureola, Berberis aristata, Rubus spp., Cotoneaster spp. , Sarcococca saligna.*
IV. *(a). Prunella vulgaris , Arisaema wallichiana , Valleriana wallichiana ,Primula denticulata , Potentilla nepalensis , Podophyllum emodi, Atsopa belladona, Fragaria vesca , Rumex spp. , Plantago spp. , Impatiens spp. , Gallium spp. , Iris spp.*
(b). Cynodon dactylon and other grasses.
V. *Rosa moschata, Hedra helix, Vites semicordata, Clematis grata. Parasite: Cuscuta reflexa.*

2.2.7. Moist temperate deciduous forest (12/C1e): This type is found from 1800 m to 2600 m in moist depressions often as strips along hill streams and also on many of the gentler slopes as in Co. 81/SKT.

Floristics:

I. *Aesculus indica, Acer pictum, Juglans regia, Acer caesium, Abies pindrow, Taxus baccata, Quercus semecarpifolia, Celtis australis, Prunus spp.*
II. *Lyonia ovalifolia, Rhododendron arboreum, Taxus baccata, Cornus spp., Rhus spp.*
III. *Vibernum cotinifolium, Berberis spp., Jasminum humile, Sarcococca saligna, Daphna cannabina, Cotoneaster bacillaris, Rubus spp., Iris spp.*
IV. *(a). Aconitum spp. , Impatiens spp. , Polygonatum spp. , Spiraca spp. , Aspidium spp.*
(b). Oplismenus undulatifolius and other grasses.
V. *Hedra nepalensis, Vitis spp.*

2.2.8. Oak Scrub (12/C1d): Practically all the Oak forests are subjected to heavy grazing and lopping. The older trees usually die out but the younger Oaks coppice, resulting in scrub forest. Rhododendron and Lyonia being unpalatable and poor fuel are left by the villagers. Pyrus Pashia often survives due to its thorniness. Q. dilatata is lopped to the main stem ans stands in columnar form till it dies out so that most of the scrub is Q. incana Thorny bushes of Berberis spp.,Prinsepia spp., Indigo-fera Spp., etc. covers the ground simultaneously in patches.

2.2.9. Himalayan temperate secondary scrub (12/C1/DS2): This forest type consists of an irregular scrub cover, throughout the temperate forest on burnt especially on southern aspect and on excessively lopped and grazed areas near villagers. Berberis lycium, Prinsepia utilis, Crataegus crenulata, Spiraea spp., Indigofera spp., etc forms the main cover with a few scattered residual trees of the original forest or pioneers of the secondary sere.

2.2.10. Kharsu Oak Forest (12/C2a): This forest type occurs along the upper fringes of Fir forests between 2500 m and 3300 m. At the top of its altitudinal range it merges into subalpine forests of Fir. Rhododendron and Birch or often abuts directly on the alpine pastures.

Floristics:

I. *Quercus semecarpifolia Q. diletata, Abies pindrow, Betula spp.*
II. *Rhododendron arboretum, Prumus padus, Ilex spp.*
III. *Coto-neaster Spp., Viburnum spp., Rosa macrophylla.*
IV. *(a). Geranium wallichianum , Fragaria vesca , Rumex spp.*
(b). Grasses.

2.2.11. Himalayan temperate park-lands (12/DS2): This forest type occurs in Mandi, Loran and Beehramgala Blocks at high altitudes. These are locally known as Behaks or Dhoks and are used as seasonal pastures. They contain scattered large moribund broad leaved trees often out of shape with few conifers over a grassy turf. According to Champion and Seth, these forests appear to be derived from the temperate deciduous forests by grazing, browsing, lopping , debarking and burning which has thinned out the forest, destroyed all undergrowth except for patches of inedible species and replaced the shrubby ground cover by a close grassy turf.

Floristics:

I. *Prunus padus, Aesculus indica, Juglans regia.*
II. *None.*
III. *Berberis spp., Viburnum nervosum.*
IV. *Rumex nepalensis.*
V. *Dactylis glomerata , Danthonia spp. , Themeda spp. , etc*

2.2.12. Himalayan temperate pastures (12/DS3): Where grazing has taken place in temperate forests favourable sites on ridges and the greater slopes especially where moist, have been gradually cleared passing through the Parkland stage to open grasslands.

Floristics:

V. Dactylis glomerata, Festuca spp., Agrostis spp., Clamagrostis spp., Bromus spp., Danthonia spp., etc

2.2.13. Low level blue pine forests (12/2S1): These forests are typically evenaged having pure or predominant Blue pine. Fir is found mixed on moist sites and Deodar is also seen but very rare in Mandi and Loran blocks only. According to Champion and Seth this forest type occur when protection is introduced on sites where forest cover has been destroyed by fire or grazing and associated lopping and fuel wood collection. There is evidence that many of good Deodar forests in Mandi Block were destroyed due to faulty heavy fellings removing Deodar altogether in the preconservancy era. Later on their sites have been colonized by Blue Pine when conservancy took place.

Floristics:

I. *Cedrus deodara (rare), Pinus wallichiana.*
II. None
III. Vibernum spp., Sarcoeocea spp., Wikstroemia spp., Myrsine spp., Iris ensata, Rubus spp., Daphne cannabina.
IV. (a). Pteridium aquilinum , Galium rotundifolium , Fragaria vesca , Viola spp. , Adiantum venustum.
(b). Themeda spp., Danthonia spp.
V. Rosa moschata

2.2.14. West himalayan birch/Fir forests (14/C1b): Between 3000-3900 m a very open crop of Fir sprinkled with Birch and Rhododendron is found on precipitous hill tops or skirting with alpine meadows where snow slides are not of frequent occurrence. This forest type is quite common in this division.

Floristics:

I. *Abies spectabilis, Betula utilis.*
II. Rhododendron companulatum, Quercus semicarperfolia.
III. Juniperous recurva, J. communis, Cotoneaster microphylla, Ribes glaciale.
IV. (a). Sambuscus spp. , Adiantum venustum , Atropa spp. , Salvia hians, Geranium spp. ,Adonis chrysocyanthus ,Sassurea lappa , Aconitum spp.
(b). Agrostis canina, Alopecurus himalaicus, Stipa sibirica.

2.2.15. Subalpine pastures (14/DS1): In the altitudinal limits 2900 m to 2500 m subalpine. Pastures are abundant in the Pir Panjal range and are famous for their grassy turf. Numerous nomadic herds reach there to graze every year during summers and under heavy pressure these are fast depleting. Uncontrolled grazing and browsing does not allow the herbs and greases to flourish. The better palatable species are thus diminishing. Besides trek erosion washes away the entire soil for miles together exposing bare rocks and huge stones. Being extensive gentle slopes huge run off takes place and removal of grassy turf may start soil erosion, commonly trek erosion. Once started such erosions generally engulf large areas destroying the meadows and are difficult to be checked later on; Co. 94/SKT has such example locally known as Marghatt.

Floristics:

IV. Agrostis *canina, Alopecurus himalaicus, Stipa sibirica, Bothriochloa pertusa, Chrysopogon echinulatus, Dactylis glomerata, Phleum alpinum, Poa bulbosa, Poa sterilis.*

2.2.16. Dwarf juniper scrub (15/E2): This forest type is met in small patches above the subalpine meadows and is the main source of brushwood as fuel for the graziers during summers.

Floristics:

III. *Juniperous communis, Juniperus wallichiana.*

The former is found in compact patches of few square meters and is about 60 cm high whereas the latter with low spreading branches 30 cm to 1.5 m high makes dense patches upto 0.2 ha in extent and generally occurs on dry exposed sites.

2.3. Injuries to which the crop is liable:

Various agents causing injuries to the crop of these Forests directly or indirectly are enlisted below:

i. Man and his animals.
ii. Fires.
iii. Wild animals.
iv. Insects, fungi and parasites.
v. Climate (Physical causes)

2.3.1. Fire: Fire is very common in Chir forests during dry months. Though Chir is fire hardy but the young regeneration is badly affected by fire which is almost always caused by Man. Some times local villagers also set the forest on fire for abundant fresh grasses. Fire is very common along the Line of Control perhaps due to firing.

2.3.2. Grazing: During the reign of Maharaja as mentioned in the Working Plan of Hayat Khan the Deodar forests in Mandi were closed to goats. Besides quite a few other forests in Haveli and Mendhar Range were closed to grazing.The entire forest tract is subected to uncontrolled and unrestricted grazing both by local and nomadic cattle. The number of these Cattle has gone beyond the carrying capacity of these forests. This is the main cause of the failure of the natural regeneration. Hence due to excessive grazing in Chir Forests the overall condition of regeneration is quite unsatisfactory. Due to grazing not only the seedlings and young samplings are browsed but also the soil get trampled due to continuous movement of grazing and browsing of cattle causing varying degree of soil erosion.

2.3.3. Grass Cutting: Villagers cut and remove the coniferous recruits and seedlings indiscriminately along with the grass this is also the cause of failure of natural regeneration.

2.3.4. Lopping: Lopping of broadleaved tree species especially Oak and other fodder trees is carried out on a large scale by the villagers for feeding their cattle. Almost all the Shikargah of preindependence era amalgamated in the compartments in the previous working plan alongwith other broadleaved forests on the fringe of human settlements have been rendered into scrub due to heavy lopping and grazing.Besides reducing the crown and consequential reduction in the rate increment, lopping renders the trees more vulnerable to fungal diseases.

2.3.5. Torchwood Extraction: Torchwood extraction is often done in remote areas by the villagers from the standing trees of both Chir and Kail. As a result of which the trees get damaged, weakened and become more vulnerable to damage by strong winds and snow.Wind

attracts the villagers to indulge more in faulty torchwood extraction so that the fallen stuff is available to them in terms of Jammu Forest Notice.

2.3.6. Resin Tapping: Resin tapping by French cup and lip method has damaged almost whole of the chir crop existing in the division. In the past the prescribed norms in respect of de-pth, width, number of Channels have never been followed. This method has weakned the Chir crop and rendered it to easily damage by strong winds. However French Cup and Lip method has been stopped with effect from 1987. The extraction of resin is carried by Rill method which causes fewer injuries to the Chir crop as compared to the old Cup and Lip method.

2.3.7. Encroachments: With the growth in human population the people fell the trees generally by means of girdling around their proprietary land with an objective to encroachment for expending their holding.However this process of encroachment is decreasing as compared to past but has not yet stopped as some fresh encroachments are going on. Fresh encroachment needs to be checked by proper demarcation and strict vigilance

2.3.8. Roads and other engineering projects construction: As a result of Road and other engineering projects, constructions involving earth work, the area becomes de-established and the hill slopes become vulnerable to soil erosion and landslides which ultimately destroy the forest crop. Mughal Road project (2005 to 2009) which connects Bafliaz (Poonch) to Shopian (Kashmir) alone resulted into diversion of 132 Ha. of forest area and resulted into removal of pristine forests which included the diversion from Wild life sanctuaries too i.e. Lachipora WLS, Limbar WLS, and Naganari Conservation Areas. Forest land is increasingly diverted for meeting the developmental needs and cases for land diversion are processed under the provisions of The J&K Forest (Conservation) Amendment Act 2001 and J&K Forest (Conservation & Afforestation) Rules, 2000 (SRO 203 of 2000).

2.3.7. Illicit Damage: With rapid rate of organization and increase in population there has been corresponding increase in the demand for the timber and fuel wood resulting illicit damage. Mostly the illicit damage is caused by local people for meeting their needs.

Table 2.1 : Table shows the year wise number of damage cases registered in the Poonch Forest division during the years below:

S.No.	Year	Damage Cases
1	2005-06	676
2	2006-07	33
3	2007-08	320
4	2008-09	589
5	2009-10	747
6	2010-11	192
7	2011-12	Not Available
8	2012-13	680
9	2013-14	717
10	2014-15	528
Total		4492

Table 2.2 : Table showing details of Encroachment Cases:

S.No.	Range	No.of Encroachment Cases	Area Involved (in Ha)
1.	Haveli	1266	874.80
2.	Mendhar	933	562.80
3.	Surankote	953	1178.50
	Total	3152	2616.10

2.3.8. Fires: Forest fires are very common particularly in the Chir Forests due to accumulation of huge quan tity of inflammable material during summer and winter months. Chir crop under resin tapping is more vulnerable to fires and is heavily damaged. Almost all the fires are caused by man. At many places people set fire in order to get good grass.

Table 2.3 : Table shows the year wise area burnt in Poonch Forest Division during the year given below:

S.No.	Year	Range			Total
		Haveli	Mendhar	Surankote	
1	2005-06	60 Ka	26 Ka	-	86 Ka
2	2006-07	43 Ka	-	-	43 Ka
3	2007-08	17.5 Ha	200-300 Ha	5 Ha	22.5 Ha+ (200-300) Ha
4	2008-09	1.5 Ka	4 Ha	-	1.5 Ka+4 Ha
5	2009-10	230 Ka+15 Ha	220 Ka+90.5 Ha	8 Ka	458 Ka+105.5 Ha
6	2010-11	100 Ka	-	-	100 Ka
7	2011-12	18 Ka+3 Ha	114 Ka+15 Ha	-	132 Ka+18 Ha
8	2012-13	-	8 Ka	19 Ka	27 Ka
9	2013-14	203 Ka	55 Ka	36 Ka	294 Ka
10	2014-15	65 Ka	20 Ka	4 Ka	89 Ka

2.3.9. Wild Animals: Injuries caused to the Forest by the wild animals are negligible in nature as compared to the damage done by the man and his animals, porcupines, Hares, Monkeys squirrels, Rats, cause damage to forest crop. But on the whole the damage is not very significant.

2.3.10 Climate (Physical causes): The damage does not occur in this division. However at higher altitudes when heavy snowfall occures some trees get broken at hole or top are uprooted. Sometimes wind and rain storms also cause damage to crop by breaking the trees and by uprooting them epically of Chir trees weakened due to resin tapping. Heavy rains cause floods and leads to landslides. Soil erosion also causes uprooting of trees. Soil erosion is all over the division but it is quite common in low lying areas where Gullies, Nallas and Khads are increasing in width and cutting the forests on their banks. Wind damage is not much in the terrain but when the trunk is heavily damaged due to extraction of torch wood some times the trees get fallen with wind.

2.3.11. Girdling: Girdling is very common in the peripheral forests around interior Chaks and encroached cultivations. Coupled with complete lopping upto the top, it is done with the intention of increasing the land under plough. Being generally closer to habitations Chir and Kail forests are worst hit by girdling.

2.3.12. Wild animals: Injuries caused by wild animals are negligible. The bears cause some damage by debarking Kail and Fir trees. The porcupines gnaw off bark and soft tissues underneath often in the shape of girdling. Monkey, Rodents and other animals also cause some damage.

2.3.13. Pests and pathogens: The damage by insects and pests is not very common in conifers. However in some rare instances damage of Fomes pini on Kail was noticed. No serious damage was observed in Chir. In Fir only after maturity rot is observed which is very common.

2.3.14. Consequences: The consequences of the damages listed above manifest in the diminishing of growing stock by shrinkage of forest area and in skeletonising the forest belt by honey combing the forest with Chaks.

Chapter-II
B-Forest fauna

2.4. General description:

2.4.1. A variety of fauna is found in this division because of varied climatic conditions and altitudinal zonation prevailing in the tract. During the reign of Maharaja Whole of the tract bore well protected Shikargah. However soon after independence these forests were badly destroyed and consequently the wildlife dwindled.

2.4.2. The over increasing pressure of human population is responsible for sharp decline of wild life population in this division as elsewhere in the state Excessive interfence by the graziers and their large birds of animals has led to the large scale destruction of some species of wild animals like wild goats etc. Apart from large scale killing of game animals and birds by man, the deforestation has also been responsible for disturbing the habitat of the wild life and consequent reduction in their number.

2.4.3. Poonch Forests seems to have been a paradise for the poachers in the past. A wide range of wild life is known to have existed in these forests including the famous Markhor. However, many of the species are on the verge of extinction now.Animals mentioned in following paragraphs are believed to exist in this Division.

Class mammalian:

2.4.4. Sub-class carnivora:

(a) Leopard or Panther (*Panthera pardus*)

Size: Locally known as Chitra or Chita size 7' and average weight 52 Kg for male and 35 Kg in female. It is reported in higher altitudes of Reasi Range. It is short haired with fulvus or bright fulvus coat marked with small close-set black resetter. The Panther can over power with safty, Cattle, Monkeys, Rodants, Crack, Birds, and Reptiles etc. It can also prey mainly and domestic animals, calves, Sheep and goat etc. It has been declared as special game as per J&K wild life protection Act 1978 and endangered in IUCN'S Red data book.

(b) The Himalayan Black Bear (*Selenaractor thibetanus*)

Size: 1 to 1.5 mts and average weight 100 kg. It is black in colour. Locally known as Reich. It is found in the temperate zone in sizeable number. It resides in Caves in the day time and come out at dusk to seek food & returns at sun rise. It lives largely on variety of wild fruits, beeries, insects, termites and larvae. It is the most carnivorus of the bears and kills Sheep, Goats and even large domestic animals. It is included in scheduled III of the J&K Wildlife Protection Act 1978 and Vulnerable in IUCN'S Red data book.

(c) The Indian Fox (*Vulpes bengalensis*)

Size: Body length 45-60 cms and tail 25-30 cms. Grey coloured pretty and slender limbed animal. It is found in sub-tropical zone of this division. It lives in the burrow dug by itself in open ground or in scrub. It feeds on small mammals, reptiles and insects. It has been

declared vermin as per the J&K wildlife protection Act 1978 and Endangered in IUCN'S Red data book.

(d) The Snow Leopard (*Panthera unicia*)

Size: Range of sizes - generally weighing between 27 and 55 kg with an occasional large male reaching 75 kg and small female of less than 25 kg. They have a relatively short body, measuring in length from the head to the base of the tail 75 to 150 cm (30 to 60 in). In summer, snow leopards usually live above the tree line on mountainous meadows and in rocky regions at altitudes from 2,700 to 6,000 m (8,900 to 19,700 ft). In winter, they come down into the forests to altitudes around 1,200 to 2,000 m (3,900 to 6,600 ft). They can kill animals two to four times their own weight, such as the bharal, Himalayan tahr, markhor, horse,but will readily take much smaller prey, such as hares and birds. It is included in scheduled I of the J&K Wildlife Protection Act 1978 and Endangered in IUCN'S Red data book.

(e) The Jungle Cat (*Felis chaus*)

Size: Jungle cats can range from 50 to 94 cm in length, plus a short 20 to 31 cm tail, and stand about 36 cm tall. Weight varies across their range from 3 to 16 kg, with a median weight of around 8 kg. Females are slightly smaller than males.

They mostly hunt for rodents,frogs,birds,hares, squirrels, juvenile wild pigs, as well as various reptiles, including turtles and snakes. Near human settlements, they feed on domestic chickens and ducks. It is included in scheduled II of the J&K Wildlife Protection Act 1978 and least concern in IUCN'S Red data book.

(f) The Brown Bear (*Ursus arctos*)

Size: Males range from 1.5m up to 2.2m long, while females are 1.37m to 1.83m long. They are the largest animals in the Himalayas and are usually sandy or reddish-brown in colour. The bears go into hibernation around October and emerge during April and May. Hibernation usually occurs in a den or cave made by the bear. Himalayan brown bears are omnivores and will eat grasses, roots and other plants as well as insects and small mammals they also like fruits and berries. They will also prey on large mammals, including sheep and goats.It is included in scheduled I of the J&K Wildlife Protection Act 1978 and critically endangered in IUCN'S Red data book.

(g) The Jackal (*Canis aureus*)

Size: Adults are slightly larger than common jackals, and grow to a length of 100 cm, 35–45 cm in height and 8–11 kg in weight. Though primarily a scavenger which subsists on garbage and offal, it will supplement its diet with rodents, reptiles, fruit and insects. It will form small packs when hunting small deer and antelopes. It is included in scheduled II of the J&K Wildlife Protection Act 1978 and not assessed for IUCN'S Red data book.

(h) The Stone Marten (*Marten foina*)

Size: It has grayish brown fur with a divided white throat bib. It weighs 1–2.5 kg, is 42–48 cm long, and is 12 cm high at the shoulder. Stone martens play an important role in

the ecosystem, including seed dispersal and controlling the population of rodents. They are not a significant prey species for the snow leopard, but could be a source of prey if other preferred species are scarce. Stone martens eat small mammals, birds, reptiles, fruit, insects, and honey. Stone martens are active at night and during the day. They are good at climbing trees. They live in dens, which can be underground, under rocks, or in trees. It is included in scheduled IV of the J&K Wildlife Protection Act 1978 and Least Concern for IUCN'S Red data book.

(i) The Himalayan Yellow Throated Marten (*Marters lavigula*)

Size: Males measure 500–719 mm in body length, while female's measure 500–620 mm. Males weigh 2.5–5.7 kg, while females weigh 1.6–3.8 kg.
It preys on rats, mice, hares, snakes,lizards, eggs and ground nesting birds such as pheasants and francolins. It is reported to kill cats and poultry. It is included in scheduled IV of the J&K Wildlife Protection Act 1978 and Least Concern for IUCN'S Red data book.

2.4.5. Sub-class Insectivora:

(a) The Grey Musk Shrew (*Suncus murinus*)

Size: Weighing between 50 and 100 g and being about 15 cm long from snout to tip of the tail. They have short legs with five clawed toes. In general it is beneficial to humans because its diet consists mostly of harmful insects such as cockroaches, and even house mice. It can therefore be considered as a biological pesticide. It can also take to eating human food such as meat in kitchens, or dog or cat food. It is included in scheduled IV of the J&K Wildlife Protection Act 1978 and Least Concern for IUCN's Red data book.

2.4.6. Sub-class Chiroptera:

(a) Fulvous Fruit-bat (*Rousettus leschenaulti*)

It is a species of fruit bat. This bat is a cave dweller and lives in cooler climates, but also roosts in wells, mines, and artificial caves. Its diet consists of fruit juice and nectar, but it has also been found feeding on molluscs. It is least Concern for IUCN'S Red data book.

2.4.7. Sub-class Rodentia:

(a) The Five Striped Palm Squirrel (*Funambulus pennanti*)

Size: 13 cms to 16 cms. It is distinctive in having five pole strips on back with supplementary strips. It is quite common in subtropical belt of this division. It is rarely found in the Forests but lives around the human dwellings and agricultural fields. It feeds on fruits, nuts, young shoots and bark etc. It has been included in schedule IV of J&K Widllife Protection Act 1978 and Least Concern for IUCN'S Red data book.

(b) The Indian Porcupine (*Hystrix indica*)

Size: It is a large rodent, growing more than 0.9 m) long and weighing 14.5 kg. It is found in tropical and sub-tropical belt. It causes damage to nurseries and young plantations. It has

been included in Schedule IV of the J&K Wildlife Protection act 1978 and Least Concern for IUCN'S Red data book.

(c) The Indian Hare (*Lepus nigricollis*)

Size: Its head and body measure 40-50 cms and its weight is about 2 Kgm. It is locally called Khargosh and is found in lower scrub forests amongst grass and bushes. It feeds on grass, seeds and fruits. It has been included in Schedule IV of the J&K Wildlife Protection act 1978 and Least Concern for IUCN'S Red data book.

2.4.8. Sub-class Ungulata:

(a) The Hog deer (*Axis porcinus*)

Size: A mature hog deer stag stands about 70 cm at the shoulder and weighs approximately 50 kg while hinds are much smaller, standing about 61 cm and weighing in the vicinity of 30 kg. It has been included in Schedule III of the J&K Wildlife Protection act 1978 and Endangered for IUCN'S Red data book.

(b) The Musk Deer (*Moschus moschiferus*)

Size : They are about 80 to 100 cm (31 to 39 in) long, 50 to 70 cm (20 to 28 in) high at the shoulder, and weigh between 7 and 17 kg (15 and 37 lb). It has been included in Schedule I of the J&K Wildlife Protection act 1978 and Endangered for IUCN'S Red data book.

(c) The Goral (*Nemorhaedus goral*)

Size: Gorals typically weigh 25-40 kg and are 80-130 cm in length, with short, backward-facing horns. It has been included in Schedule I of the J&K Wildlife Protection act 1978 and Near Threatened for IUCN'S Red data book.

(d) The Indian Wild Boar (*Sus-scrofa*)

Size : males average 75–100 kg in weight, 75–80 cm) in shoulder height and 150 cm in body length, whereas females average 60–80 kg in weight, 70 cm in shoulder height and 140 cm in body length.The wild boar is a bulky, massively built suid with short and relatively thin legs. The trunk is short and massive, while the hindquarters are comparatively underdeveloped. It has been included in Schedule III of the J&K Wildlife Protection act 1978 and Least Concern for IUCN'S Red data book.

2.4.9. Sub-class Primates:

(a) The Rhesus Macaque (*Macaca mulatta*)

Size: male about 60 cms, female smaller than male it is locally known as "Bander". It is generally found in herds often of considerable size and is found almost in the entire division. It generally damages young seedlings of Chir by Uprooting and chewing them. It raids fields and gardens generally in morning and evening. It has been included in Schedule II of the J&K Wildlife Protection act 1978 and Least Concern for IUCN'S Red data book.

(b) The Common Langur (*Presbytis entellus*)

Size: 60-75 cmsw in height when sitting, tail (90-100) cms. It is locally known as "Langur" and is seen occasionally in the higher altitude areas. It is a black faced and long tailed monkey arboreal in habit. Langurs are pure vegetarian. They eat wild fruits, flowers, buds, shoots and leaves. They live in peaceful relaxed and fairly large groups of all ages and sexes. It has been included in Schedule II of the J&K Wildlife Protection act 1978 and Least Concern for IUCN'S Red data book.

2.4.10. Reptilian Fauna comprises of Lizards like Varanus (Kas karoh), Agama, Calotes and Snakes include Hemidectles python, Cobra, Coral, Coral snake, Krait, Viper, Natrix, Zemnis, Lycodon and Typhlops are also found in the district. The rivers of the district are abounding with fish fauna. Trout is important to mention.

2.4.11. The important birds found in this division are as under:

S.No.	English Name	Scientific Name	Remarks
1	Monal pheasent	*Lophophorus impejanus*	A beautiful large bird with brilliant metallic green head crest of wire-like spatula tipped feather, white patch on back and cinnamon coloured broad and square cut tail. Found in high level Fir zone and is at the verge of extinction.
2	The Koklas pheasant	*Pucrasia macrolphus*	Size domestic fowl. Cock is grey, upper side streaked blackish, chestnut below, Chest is brown. Two long metallic green horn-like lifts just out behind its metallic green head. A white patch on either side of the head is characteristic found in high level Fir zone and is at the verge of extinction.
3	The White crested kalej pheasant	*Gennacus ramiltoni*	Size as of Koklas pheasant. A bird with long sickle shaped black tail, whitish rump and black above; having bare scarlet patches round eyes. Found in Bank Oak Forests and is at the verge of extinction.
4	Black partridge	*Francolinus froncolinus*	Size is that of half grown domestic hen. Found in the entire sub-tropical zone of the division.
5	The Grey partridge	*Froncolinus pendicerianus*	Size that of halt grown domestic hen. Very commonly found all over the sub-tropical zone of the division.
6	Common or Grey quail	*Coturnix coturnix*	An itailless bird found in the division.
7	The Chukor	*Alectorisgraceca*	A beautiful Pinkish grey brown Partridge (Larger that the partridge)
8	Ram chukor or Himalayan snow	*Tetraogallus himalayensis*	Found in higher reaches of Wildlife Reserves

	cock		
9	Red jungle fowl	*Gallus gallus*	Size: Village Hen

2.4.12. Other birds found in this division are as under:

S.No.	English Name	Scientific Name	Remarks
1	White backed bengal vulture	*Preudogyps bengalensis*	Size: Peacock A blackish brown vulture with necked head and neck and white back. Found in the lower area of this Division.
2	The Himalayan griffon	*Gyps himalayensis*	An enormous sized bird with long naked neck and unfeathered bald head, sandy, white or Khaki colour. Found in the higher zone of the division.
3	Fulvous or Indian griffon	*Gyps fulvus*	Smaller than the above, the adult is rich fulvous or cinnamon brown but often quite pale. Found in the higher zone.
4	House crow	*Corvus splendens*	This is the common crow found all over especially along habitations.
5	Jungle crow	*Corvus macrorhynchos*	A glossy jet black crow found in upper portion of this division.
6	Koel	*Eudynamys scolopacea*	Size: House crow. Found in the sub-tropical and lower temperate zones. Remains silent in winter and becomes increasingly noisy with the advance of hot weather
7	Common myna	*Acridotheres tristis*	Size: Larger than bulbul. A dark brown bird with bright yellow bill and legs and bare skin round the eyes. Found almost all over the area.
8	Brahminy or Black headed myna	*Sturnus pagodarnum*	Size: Smaller than the India Myna, grey above, redish below with glossy black crown seasonally found in the lower area of the division.
9	Jungle myna	*Acridotheres fuscus*	Similar to Indian myna but more greyish brown devoid of yellow skin round the eyes. Found almost in the entire division.
10	Small yellow napped wood pecker	*Picus chlorolphus*	A yellow green wood pecker with golden yellow nuchal crest. Found in the lower portions of the division.
11	Golden backed wood pecker	*Dinopium benghalense (Syn) (Brachypternus benghalensis)*	Size: Myna. A wood pecker with upper plumage golden yellow and black crimson crown and occipital crest. Found mostly in the sub-tropical zone.
12	The West himalayan pied wood-pecker	*Dryobates himalayanus*	Size: Myna. A wood pecker with a red patch under tail and on the head, black and white shoulders almost all over the area.
13	Hoopoe	*Upupa epops*	Size: Myna. A fawn coloured bird with white and black zebra markings on back,

			wings and tail.
14	Paradise flycatcher	*Terpsiphone paradisi*	A Bulbul sized silvery white bird with metallic black crested head and two very long narrow ribbon like curved feathers in tail. Found all over in the lower zone of the division.
15	White spotted fantail flycatcher	*Rhipidura albicollis*	A sparrow sized cheery restless smoke brown bird with white eye brows, white spotted breast and flanks, whitish abdomen and fanned out tail. Found all over the area.
16	Indian robin	*Saxicolides fulicata*	Size: Sparrow a blackish bird with a white patch on wing and rusty red under root of cooked tail. Found all over in lower open area.
17	Talor bird	*Orthotomus sutorius*	Size: Sparrow. A small rest-less olive green bird with white under parts, rust coloured crown and tow long painted feathers in the cocked tail. Found all over in the lower areas of the division.
18	Common peafowl	*Pavo cristatus*	A long tailed bird with beautiful Crest found in the lower subtropical areas. Included in scheduled I of J&K Wildlife (Protection) Act, 1978 & its hunting is totally prohibited.
19	The Shahin falcon	*Falco peregrinus peregrinator*	Size: Somewhat larger than the house crow. A Falcon with Slaty black head and rusty red under parts.
20	Shikra	*Accipiter badius*	A hawk with a shy blue grey colour above and white below size : Pigeon
21	Kestrel	*Falco tinnunculus*	Size: Pigeon. A small falcon often saw checking itself in flight time and again and remains stationary in mid air.
22	Blue rock pigeon	*Columba livia*	Size: House Crow. A slaty grey bird with metallic green, purple and magenta sheen on neck and upper breast.
23	Red wattled lapwing	*Vanellus indicus*	Size: Partridge. A bird with black breast, head and neck ; white below, brown above and a crimson fleshy wattle in front of each eye.
24	Rollen or Blue jay	*Coracias benghalensis*	Size: Pigeon. Mostly confirmed to the lower portion of the division and generally found perched singly on poles around cultivations.
25	Common hawk cuckoo or Brain fever bird	*Hierococcyx varius*	Size: Pigeon. Superficially very much like Shikra hawk, found all over in this area.
26	The Red billed blue magpie	*Urocissa erythrorhyncha*	Size: Pigeon. A long tailed (15”-17”) blue bird with black head, neck and breast, grayish white under parte, crimson bill and legs and long graduated tail. Found

			allover the area.
27	The Himalayan tree Pie	*Dendrocitta formosae*	Size: Myna. A long tailed (12”) greyish bird with black crown, ashy under parts and white spot in wing. Found almost all over the area.
28	The Brown himalayan pied wood-pecker	*Dryobates himalayensis*	Size: Myna. A wood pecker with ared patch under tail and on the head, black back and white shoulders.
29	The brown fronted pied wood pecker	*Dryobates auriceps*	Slightly smaller than the above with cross-barred black and white back; found almost all over the area especially in the Oak and Fir areas.
30	Pied crested cuckoo	*Clamator jacobinus*	Size: Myna with longer tail. A handsome crested black and white cuckoo with white tips of tail feather, found almost allover in this area.
31	Ring dove	*Streptopelia decaocte*	A pigeon sized Dove with a narrow black half ring on the hindneck, found allover the areas seasonally.
32	Spotted dove	*Streptopelia chinensis*	Size: Between Myna and Pigeon. A Dove with white spotted pinkish brown and grey upper parts and white and black chess beard on hind neck
33	The Rufous turtle dove	*Streptopelia orientalis*	A Dove slightly smaller than the blue rock pigeon with a grey spotted black patch on either side of hind neck.
34	Blossom headed parakeet	*Psittacula cyanocephala*	Size: Smaller than the above. A grassy green bird with bluish red head and maroon shoulder patch found almost all over in this division.
35	Himalayan Whistling thrush	*Myiophoneus caeruleus*	Size: Between Myna and Pigeon. A blue black bird found all over in this area.
36	White breasted kingfisher	*Halcyon smyrnensis*	Size: Myna. A bird with deep chocolate brown head, neck and under parts, a white breast and long red bill.
37	Small blue king fisher	*Alcedo-atthis*	Size: Sparrow. A blue and green little kingfisher with rust coloured under parts short stumpy tail and long bill.
38	Common babbler	*Turdoides caudatus*	Size: Bulbul. A brownish babbler with long graduated tail found in this lower portion of the division.
39	Jungle babbler	*Turdoides striatus*	Size: Myna. A larger than the above and found in almost all the area except the higher portion.
40	Baya or Weaver bird	*Ploceus philippinus*	Size: Sparrow. Found only in the lower reaches of the area. It builds a swinging retort shaped nest.
41	The Spotted fork-tail	*Enicurus maculatus*	Size: Myna. A spotted black and white bird with long and deeply forked tail, found near streams all over the area.
42	Grey wagtail	*Motacilla cinerea*	Size: Sparrow. A long tailed bird found

			near rocky streams all over the area mostly in winters.
43	White wagtail	*Motacilla alba*	Size: Sparrow. A white bird
44	Yellow wagtail	*Motacilla flava*	Size: Sparrow. Chiefly yellowish in colour and keeps wagging its tail like other wagtails.
45	Little egret	*Egretta garzetta*	Size: Village hen. A lanky snow-white marshy bird with black bill, long dropping crest and long legs found near stream and ponds
46	Cattle egret	*Bubulcusibis*	Size same as above, a white bird (in its non breeding plumage) like the little egret but with a yellow bill. Found near water i.e. Ponds, Paddy fields.
47	Gold fronted chloropsis	*Chloropsis aurifrons*	Size: Bulbul. A grass green bird with bright golden forehead, purple and black chin and throat, found mostly in the lower portion of this division.
48	White cheeked bulbul	*Pycnonotus leucogenys (Molpastes leucogenys)*	Size: Myna. A brownish bulbul with black head, white checks and yellow under root of tail.
49	Redvented bulbul	*Pycnonotus cafer (Molpastes cafer)*	Size same as above. A bulbul with partially crested black head and crimson patch below root of tail and a white rump.
50	The West himalayan white throated layghing thrush	*Garrulax whistleri*	Myna sized crestless olive brown and rust coloured bird with white checks and throat. Found almost all over the area.
51	The Himalayan barred owlet	*Glaucidium cuculoides*	Pigeon sized, dark brown owlet barred with whitish above and with white patch on throat.
52	The Spotted owlet	*Athena brama*	Size: Myna. A squate, white spotted greyish brown little owl, with large round head and bulged yellow eyes; found almost all over the area.
53	Common swallow	*Hirundo rustica*	Size: Myna. A purplish blue swallow with pinkish white under parts and forked tail; found almost all over except higher zone.
54	Wire tailed swallow	*Hirundo smithii*	Sparrow sized bluish bird with chestnut cap, white under parts and two long “wires” in the tail. Found in the lower areas of this division.
55	The crested bunting	*Melophus lathami*	A sparrow sized black and chestnut, crested bird; found all over in the lower portion of the division.
56	Small green bee-eater	*Merops orientalis*	A sparrow sized green bird tinged with reddish brown on head and neck and long pin-like pair of feathers; found all over in the lower portions.
57	Grey shrike	*Lanius excubitor*	A Myna sized silver grey bird with longish black and white tail, black stripe from bill

			backward through eye. Found only in the lower portion of the division.
58	Rufous backed shrike	*Lanius schach*	A Bulbul sized shrike with a black band through the eyes and forehead, grey head and bright rufous lower back and rump. Found all over the area during summers.
59	Black drongo (King crow)	*Dicrurus adsimilis*	Size: Bulbul. A glossy black bird with long deeply forked tail, found allover in the division.
60	House sparrow	*Passer domesticcus*	This is the common sparrow associated with human habitations and is found all over near habitations.
61	Pied bushnet	*Saxicola caprata*	A sparrow sized black (female earthy brown) bird with white patches on rump, abdomen and wings.
62	Grey tit	*Parus major*	A Sparrow sized bird with glossy black head, white check-patches, grey back and whitish under parts; found all over this area in parties.
63	Golden oriole	*Oriolus oriolus*	A Myna sized bright golden yellow bird with blackish wings and tail and black streak through the eyes, found all over in the lower zone.
64	Common or Black redstart	*Phoenicurus ochruros*	Size: Sparrow. A slim active black and orange-chestnut bird, constantly shivering its tail (orange-chestnut) and dipping forepart of body (Female brown and paler).
65	The Himalayan nut cracker	*Nucifraga caryocatactes*	Size: House Crow. A chocolate brown and umber brown bird, spotted with white above and below and having wedge shaped.
66	The white capped redstart	*Chaimarrornis leucocephalus*	Size: Sparrow. A robin like bird, black above, chestnut below, with snow white cape and bright chestnut tail ending in a black band.

2.4.12. Aquatic Birds that are found in Poonch Forest Division can be named as:
White breasted waterhen (*Amaurornis phoenicurus*), Indian Pond Heron (*Ardeola grayii grayii Sykes*), Little Egret (*Egretta garzetta (Linnaeus)*) , Black crowned night heron (*Nicticorex nycticorex*)

2.4.13. Rare Bird species that are found in Poonch Forest Division can be given as:
Indian Long Billed Vulture (*Gyps indicus*),Himalayan Griffon Vulture (*Gyps himalayensis*), Pheasant tailed Jacana (*Hydrphasianus chirurgus*),Wedge-Tailed Green pigeon (*Treron sphenura*) , Indian roller (*Coracias benghalensis*) ,Pied Crested Cuckoo (*Clamator jacobinus serratus (Sparrman)*) ,North Indian Scarlet Minivet(*Pericrocotus flammeus speciosus (Latham)*) , Red billed leothrix (*Leothrix lutea*) , Little Pied Flycatcher (*Ficedula westermanni*) ,Scaly thrush (*Zoothera dauma*), Black Throated Tit (*Aegithalos concinnus*) ,Yellow Breasted Greenfinch (*Carduelis spinoides*)

2.5. Injuries to which fauna is liable:

2.5.1. Wildlife has been destroyed in the past by royal hunting parties and royal army or indirectly by destruction of its habitat. However the greatest devastation of the Wildlife has taken place during last five six decades in general and after independence in particular. The fauna of the tract is liable to injuries by man, Wildlife, epidemics, atmospheric influences and fires etc. The man is more injurious to the Wildlife than any other agency.

2.5.2. Injuries by man: Man is the biggest enemy of the fauna hunting (both legal as well as illegal) of wild animals and birds has always been game for the man; wild animals and birds are killed for their valuable skin, horns, flesh etc. Man has been responsible for creating an ecological imbalance in the biological pyramid by killing certain forms of wildlife. Large scale destruction of Forest by man by way of encroachments, excessive felling, frequent fires, population explosion, Excessive grazing and various development projects is also responsible for destroying the habitat of the Wildlife. Coupled with these are lack of awareness and lack of conscious efforts to save wildlife from destruction by adopting proper legislative and administrative measures.

2.5.3. Injuries by wild animals: Under normal circumstances bigger animals predate over the smaller animals. But this is the smaller animals. But this is the natural process of the food chain which works for the balance of the nature.

2.5.4. Injuries by epidemics: Sometimes contagious diseases to spread among the wildlife animals mainly through the domesticated animals grazing inside the forests.

2.5.5. Injuries by fires: At times wild animals are trapped in the Wild fire and die.

2.5.6. Injuries by atmosphere influences: Though the Wildlife has on inbuilt capacity to withstand and survive the vagaries of nature, yet atmospheric influences do affect the young ones of the wild animals and birds. The birds do suffer from heavy snowfall, rains, storms and droughts as their young ones and eggs are destroyed by these natural agencies.

Chapter- III

Utilization of the produce

3.1. The people:

3.1.1. Overview of the district Poonch: District Poonch or Punch is one of the remotest districts of Jammu and Kashmir. It is bounded by the Line of Control on three sides (north, west and south). The 1947-48 war between India and Pakistan divided it into two parts. One part occupied by Pakistan and the other became part of the Indian state of Jammu & Kashmir. The District headquarter is situated in the Poonch city. Presently District Poonch in Jammu and Kashmir is divided into eight tehsils: Haveli tehsil, Mandi tehsil, Mendhar tehsil, Surankote tehsil, Chandak tehsil, Mankote tehsil, Balakote tehsil and Bufliaz tehsil.

3.1.2. According to 2011 Census (By Directorate of Census Operations in Jammu and Kashmir) :

Population	476,820
Male	252,240
Female	224,580
Population Growth	27.97%
Area Sq. Km	1,674
Density/km2	285
Proportion to Jammu and Kashmir Population	3.80%
Sex Ratio (Per 1000)	890
Child Sex Ratio (0-6 Age)	895
Average Literacy (%)	68.69
Male Literacy (%)	81.04
Female Literacy(%)	54.80
Total Child Population (0-6 Age)	84,112
Male Population (0-6 Age)	44,390
Female Population (0-6 Age)	39,722
Literates	269,744
Male Literates	168,435
Female Literates	101,309

3.1.3. According to 2011 Census (By Directorate of Census Operations in Jammu and Kashmir) :

Description	Rural	Urban
Population (%)	91.90 %	8.10 %
Total Population	438,176	38,644
Male Population	230,087	22,153
Female Population	208,089	16,491
Sex Ratio	904	744
Child Sex Ratio (0-6)	894	902
Child Population (06)	79,746	4,366
Male Child(0-6)	42,095	2,295
Female Child(0-6)	37,651	2,071
Child Percentage (0-6)	18.20 %	11.30 %

Male Child Percentage	18.30 %	10.36 %
Female Child Percentage	18.09 %	12.56 %
Literates	239,227	30,517
Male Literates	149,524	18,911
Female Literates	89,703	11,606
Average Literacy	66.74 %	89.03 %
Male Literacy	79.54 %	95.23 %
Female Literacy	52.63 %	80.49 %

3.1.4. According to Census 2011 ,90.45% are Muslims ;6.84 % are Hindus ; 2.35 % are Sikhs , 0.20% are Christians and 0.02% are Buddhists .From the above data, it can be said that Average Literacy i.e. 68.69 % is lower than National Average of 74.04% .

3.2. Occupation:

3.2.1. Peoples have small pieces of land for cultivation. Agriculture is the main source of livelihood because more than 73 % population depends upon agriculture and allied activities. The nomadic Gujjars and Bakarwals are into professional grazing who trade in cattles and their by-products. A large number of people work as Casual/Daily wage bases labourers on petty jobs as Industrialisation is not much in the region. A small fraction is engaged in Trading. A little proportion of people are also said to be working in Middle East countries.

3.3. Economic condition:

3.3.1. Since Industrial environment is totally absent and commercial activity exists on a very low scale. The economic condition of people of Poonch district is not satisfactory. In 2006 the Ministry of Panchayati Raj named Poonch one of the country's 250 most backward districts (out of a total of 640). It is one of the three districts in Jammu and Kashmir currently receiving funds from the Backward Regions Grant Fund Programme (BRGF).

3.3.2. **The Poonch District as on 31/12/2015 (as per Office of Assistant Director Consumers Affairs and Public Distribution, Poonch)**

Name of Tehsil	Families attached APL(Above Poverty Line)	Families attached BPL(Below Poverty Line)	Families attached AAY(Antyodaya Ann Yojana)
Poonch	13510	5871	2609
Mandi	3475	6040	2665
Surankote	6767	7705	3415
Balakote	2074	2037	1026
Mendhar	4772	5723	2229
Grand Total	30598	27376	11944

3.3.3. There are many unemployed youths in the district and the people usually try to go for the government jobs as the potential in the private sector is bare minimal. Unemployment problem among youth, both skilled and unskilled workers is quite large when compared to other districts of the State. The State Govt./Distt. Administration is trying its level best to eradicate the problem by implementation of different employment generation schemes viz. PMRY, SSES, SGSY and MNREGA.

3.3.4. With the opening of 46 km LoC trade (Poonch-Rawlakot) lead growth aspirations of business community are high and intra trade is expected to gain a flip. The entire trade is based on barter system and not currency in view of multidimensional overtones. The LoC trade was expected to boost socio-economic status by generating income to transporters, traders, small shopkeepers etc. The opening of 169 km Mughal road from 2011 onward has directly linked this isolated part with Srinagar. The flow of fruits and Kashmiri items through Mughal Road has also opened the doors of economic avenues for the people of Poonch district. Efforts are also underway for ensuring throughout year movement through Mughal Road by constructing of Tunnels along the Mughal Road. Government of India is also pondering on Rajouri-Poonch railway link project.

3.3.5. Due to operationalistion of various schemes in Education, Health, Road/Power, Agriculture sector Socio-Economic condition of people is improving. Special focus is also being given on Self Employment by the implementation of schemes like Jammu and Kashmir State Self Employment Scheme, Rural Self Employment Training Institute (RSETI), Seed Capital Fund Scheme (SCFS) and Self Help Groups.

3.4. Language:

3.4.1. Gujjars and Bakerwals speak Gojri whereas rest of the population (excluding Kashmiris) speaks Pahari/Poonchi. The mother tongue is a great cementing factor of the Pahari speaking people because they remain closely associated with each other despite differing faiths.

3.5. Encroachments:

3.5.1. The encroachment of forest land is not only a legal or administrative problem but also a socio-economic problem. With population increase and limited employment opportunities the low (and at places poorly) fertile land holdings could not and cannot provide subsistence to the people living in the vicinity of forests. Obviously the pressure on land has been increasing and the temptation and need for having larger land ownership has come to be treated as the only resort. Moreover, the desire and temptation for land accretion have become irresistible the authorities being silent spectators. As a result large forests areas have been subjected to illicit encroachment by the local people.

3.5.2. The small chaks within the forests are nucleous of further encroachment and the pressure form the periphery is unsurmountable. The net result is shrinkage of the forest belt. The solution of this problem lies in the land reforms and the resettlement along with proper demarcation of forest boundaries.

3.6. Demands of local people:

3.6.1. The population of area is totally dependent upon the demarcated forests for meeting their requirement of timber for agricultural implements, house building repairs, firewood and fodder. The demarcated forests of the tract also provide livelihood, to the local population by way of generating employment and other direct and indirect benefits. The people are also totally dependent on forests for grazing requirement of their Cattle, Sheep and Goat etc. The tract is not self sufficient in agriculture produce because of marginal holdings and uncertain crop harvests, with the result half of food grains are imported from outside to

feed the population. As a result of population growth developmental activities and standard of living of people these demands have increased considerably and are rising steeply.

3.6.2. Fire wood requirement: Total Fire wood extraction by all the agencies for 2015-16 in Poonch Forest Division can be given as:

Table 3.1: Table showing Firewood Extraction (Units in qtls)

Agency	Conifers	Non-conifers	Total
SFC	-	-	-
Forest Department	2268.45	-	2268.45
others	270.00	-	270.00
Total	2538.45	-	2538.45

As per the information provided by the Poonch Forest Division. Fire wood supplied for Cremation is 2336.75 Quintals which generated revenue of Rs 455213.00.

Table 3.2: Table showing Firewood Supply to different towns (Units in qtls)

S. No.	Name of the town to whom supplied	Quantity supplied
1.	Poonch	716.00
2.	Mandi	205.00
3.	Mendhar	451.50
4.	Surankote	964.25
	Total	2336.75

No such record is available for Fire wood extraction done by local populace without any Legal/Right/Administrative approval of the Forest Department. However, with time there is an increased coverage of LPG for cooking purpose. Thus, it can be said that Fire Wood requirement should follow a decreasing trend with time.

3.6.3. If a conservative estimate is made about the Fire Wood requirement of BPL and AAY families on the assumption that a family of will require 6 Kg of Fuel wood per day then annual requirement comes out to be 6*(27376+11944)*365= 861108 Quintals. Even if it is assumed that 25% of need is met from private land etc then still Forests of Poonch Division have to provide arounf 640000 Quintals of Fire wood/year.

3.6.4. With increased LPG usage being promoted by the Government's schemes/endeavors like National Programme on Improved Chulhas, "Subsidised 5 Kg LPG cylinder for BPL", "Give It up" Campaign, JAM (Jan Dhan Yojana, Aadhaar and Mobile Numbers) Fuel wood requirement will definitely come down. In future proposed Bathinda-Srinagar Pipeline will provide relief to Poonch Region as this project also envisages connectivity to lateral Districts like Rajouri, Poonch, Reasi, Doda and Kishtwar.In addition a sustained effort is needed for awareness/sensitization of Families which are dependent upon Fuel wood (or other Bio waste) about the above schemes and their benefits like Reduced Indoor pollution, Health of female member, efficiency/economy, reduced time and labour.

3.6.5. Timber requirement: It is presumend that for average family size i.e., 6 membered 10 cubic metre timber is required for making single story houses in rural areas. The houses require

complete renovation after about 25 years. Thus the annual requirement of timber on this account for the existing 73030 (438,176/6) Rural house hold works out to be 73030 x 10/25 = 29212 cubic metres. Apart from this about approximately 1000 new houses are being constructed every year which require 10000 cubic metre standing timber. This total annual requirement of timber for the rural population of this division comes to be 39212 cubic metres two third of this requirement is met from these forests. Against these estimates the timber actually issued to the rural concessionists from the department from time to time is given in 1.10.5. (19000 cubic feet or 538 cubic metres approximately annually). It becomes evident that hardly 2% of the total annual timber requirement of the population goes recorded; rest of it is made of by resorting to illicit and illegal means.

3.6.6. Apart from these requirements of timber and fuel wood fodder for Cattles is yet another main requirement of the local population which is chiefly met from these forests in the form of grass cutting, lopping and grazing.

Table 3.3: Table showing extraction of timber by department in last 10 years

Year	Ranges			
	Haveli (Scants/cft)	Mendhar (Scants/cft)	Surankot (Scants/cft)	Total (Scants/cft)
2005-06	646/1569.30	643/1972.35	452/1299.01	1741/4840.66
2006-07	610/1805.67	61/175.04	410/1713.97	1081/3694.68
2007-08	245/689.20	0/0	89/278.65	334/967.85
2008-09	2543/7494.08	245/688.13	1550/4336.42	4338/12518.6
2009-10	2393/7091.95	522/1509.71	320/1009.45	3138/9611.11
2010-11	1909/5541.73	448/1325.30	403/1250.41	2760/8117.44
2011-12	1289/3869.52	428/1311.20	384/1225.86	2101/6406.58
2012-13	3767/11196.25	2147/6249.34	133/381.68	6047/17827.27
2013-14	5503/16300.48	1100/3330.2	2314/6282.5	9242/25913.1
2014-15	5214/14349.7	595/1805.82	1467/4097.36	7276/20252.88

Table 3.4: Table showing data on timber sold in TSD for 2015-16 (Unit in cft)

		Zone A	Zone B	Zone C	Total
Departmental	Deodar	--	-	6002.44	6002.44
	Kail	1155.68	8351.74	4707.90	14215.32
	Fir	357.92	1769.26	797.69	2924.87
	Chir	--	1467.25	495.49	1962.74
	Others	--	--	--	--
	Total	1513.60	11588.25	12003.52	25105.37

3.7. Minor forest produce(MFP) :

3.7.1. After resin (after 2005 no resin tapping has been done) other MFP also occurs but in small quantity in this division so far to significant source of revenue.

3.7.2. Broad leaved species are mainly consumed as fuel wood by the local population through lopping and collection of dead fallen material.

3.7.3. Chikri (*Buxus wallichiana*) which is a medium sized tree occurring sometimes as underwood in Fir and broad leaved forests in altitudinal zone 1800-2500 m is used for making a member of products like Spoons, Combs, Utensils, Tooth picks , Decoration pieces, etc.

3.7.4. Pinus roxburghii is tapped for 45leoresin. Detail is given in Chapter XVII.

3.7.5. Other Minor Forest Produce and their sources are listed below:

a) Katha (Cutch) *Acacia catechu*.

b) Gum: Source is *Acacia catechu*, *Acacia modesta, Anogeisous latifolia*, *Bauhinia racemosa*, *Lannea coromandelica*.

c) Rasount sources *Berberis axistate, Berberis lycium*.

d) Jhingan gum. Source *Lannea coromandelica*.

e) Babul gum: Source *Acacia nilotica*.

f) Other important medicinal plants occurring in this division are: *Polygonatum verticillatum* (Salam misiri), *Thymus serphyllum (*Jungli ajwain*), Viola Serpens, Banufsham Atropa, Belladonna (*belladonna*), Rauwalfia serpentina, Cassia fistula, Emblica officinals, Holorrhena antidysentrica.*

g) Dye yielding species are: *Emblica officinalis, Acacia modesta and Cassia fistula.*

h) Fibre yielding species are: *Cannabis sativa, Ficus religiosa, Ficus bengalensis.*

i) Flosses are made from *Bombex ceiba*. Donas are prepared from Bauhinia vahlii leaves.

Table 3.5 : Table showing the tentative availability of various MFPs for extraction in Poonch Forest Division during 2016-17 (provided by Poonch Forest Division)

S.No	Range	Block	Comptt. No.	Kuth (*Sausoria lappa*)	Dhoop (*Commiphora wightti*)	B ellodonna (A*tropa belladonna*)	Nagchattri (*Trillium govanianum*)	Guchhi (*Moshella esculanta*)	Discorea (*Discorea allata*)
1.	Haveli	Loran	84/H, 85/H, 86/H, 91/H, 92/H, 93/H, 100/H, 103/H & 104/H,	02 qtls	03 qtls	03 qtls	10 qtls	80 kg	11 qtls
		Mandi	69/H, 70/H, 71/H, 73/H & 74/H	--	--	03 qtls	03 qtls	45 kg	03 qtls
		Sawjian	122/H, 123/H, 124/H, 125/H, 134/H, 135/H, 136/H, 137/H & 138/H	--	--	03 qtls	15 kg	30 kg	04 qtls
2.	Surankote	Bahramgala	271/S, 272/S, 274/S, 300/S, 303/S & 304/S	01 qtls	--	02 qtls	02 qtls	20 kg	--
		Murrah	1/S to 12/S & 22/S to 29/S	50 kg	--	02 qtls	03 qtls	20 kg	--
		Bufliaz	263/S to 266/S	--	--	--	50 Kg	05 kg	--
			Total	3.50 qtls	03 qtls	13 qtls	18.65 qtls	02 qtls	18 qtls

3.8. Markets:

The main market is located at Jammu. Resin is supplied to R&T. Industry Miransahib and other factories.

3.9. Lines of export:

3.9.1. Resin is transported manually through poneys etc., up to the Road side from thee it is transported by trucks.

3.10. Methods of exploitation:

3.10.1. Dry and fallen trees are marked by carving a number at the base and marking with hammer mark at the base of the tree. After the markings are conducted these are handed over to SFC for extraction. The markings are classified into species, Diameter classes, Fit, Green or Dry. All the logging operations are carried out with in accordance with the laid out norms.

3.10.2 Trees are felled by employing saw. First of all trees are converted into logs of desired size after felling. Logs are then converted into scants of marketable sizes which are brought down to the loading stations through various off-road transportation means as per the feasibility.

3.10.3. Resin is extracted by Rill method in case it is permitted. Wage contract system is employed by the department for resin extraction. Chir compartments selected for tapping are grouped into lots. These lots are put to open auction for extraction of resin and its transportation to nearby transit depot.The extraction has to be carried out in accordance with the laid norms.However the resin tapping done in the past has affected the Chir crop and the Chir trees have not recovered completely for further resin tapping.In this working plan for determining the possibility of further resin tapping the Resin channel survey exercise is undertaken.

3.11. Cost of extraction:

3.11.1 Due to enforcement of nationalization of Forests Govt. Order No: 24 FST of 1990 Dated: 15-01-1990 commercial fellings in this Division have been banned and timber is not extracted for this division for commercial purpose. Hence the cost of extraction for timber has not been worked out. Resin used to be extracted departmentally till 2009-10 but since that time it has been stopped. Hence the cost of resin extraction has not been calculated

Chapter-IV

Activities of State Forest Corporation

4.1. Jammu & Kashmir State Forest Corporation:

4.1.1. The J&K SFC was created by the act of legislation, namely The Jammu and Kashmir State Forest Act, 1978 and rules were framed in 1981. The forests were worked out by leases in the olden days and later the forest working was nationalised by The Jammu and Kashmir Nationalisation of Forest Working Act, 1987.

4.1.2. The Forest Department hands over the coupes to SFC and levies the royalty. Before the ban of green felling of trees, the SFC was handling huge volume of timber every year. Due to the imposition of ban on green felling by the State Government and the various directives issued by the Hon'ble Supreme Court of India regarding felling, resulted in least quantum of timber extraction by SFC. Later, the Hon'ble Supreme Court of India endorsed the Qualitative and Quantitative norms (popularly called as Q&Q Norms), proposed by the State. As per the Q&Q norms, 80 lakh cft of standing volume of conifer trees (dry, fallen; basically hygienic markings) can be cleared in the State for extraction every year, but except few years, the limit of 80 lakh cft was never touched hence it resulted in financial crunch to the corporation.

4.1.3. The State Forest Corporation suggests the available volumes from different compartments. If the compartment fits to be worked out as per the conditions imposed by Q&Q norms, then only it is enumerated for dry/ fallen trees. The CF (Working Plan Circle) issues the technical clearance. Based on the technical clearance, the trees in the compartment are marked. The marking list is sent to CF (Working Plan Circle) for issue of technical sanction. The CCF (Territorial) issues the Administrative Approval, based on the TS. Then the marking in the compartment is handed over to the SFC for extraction.

Table 4.1 : Table showing the compartment wise marking/extraction , regular coupes of district Poonch from the year 2006-07 to onwards of SFC Division Rajouri

S.No.	Compartment	Year	Marking Taken-over		Extraction	
			No's	Volume	No's	Volume
1	22/Haveli	2006-07	255	47253	-	-
2	Nil	2007-08	0	0	0	0
3	Nil	2008-09	0	0	0	0
4	Nil	2009-10	0	0	0	0
5	Nil	2010-11	0	0	0	0
6	93/Haveli	2011-12	223	34801	2541	7030
7	94/Haveli		464	40440	3663	10315
8	Nil	2012-13	0	0	0	0
9	93/Haveli	2013-14	154	13515	0	0

10	94/Haveli		789	78039	0	0
11	93/Haveli	2014-15	0	0	8528	25205
12	94/Haveli		0	0	12406	37277
13	Nil	2015-16	0	0	0	0
Total			1885	214048	27138	79827

Table 4.2: Table Showing the Detail of Marking Conducted and Handed over to S.F.C.

S.No.	Year	Compartment No.	Species	Marking Conducted	
				No.	Volume (in cft)
1	2002-03	132/H	Fir dry fallen	78	18119
		133/H	Fir dry fallen	26	4439
		134/H	Fir dry fallen	85	16133
			Total	189	38689
2	2003-04	85/H	Fir dry standing	105	17441
			Pole	22	
			Total	127	17441
		86/H	Fir dry standing	62	13000
			Pole	4	
			Total	66	13000
		94/H	Fir dry standing	576	42155
			Pole	479	
			Total	1055	42155
		132/H	Fir Green fallen	79	14572
			Fir dry	7	944
			Total	86	15516
		133/H	Fir Green fallen	61	8916
			Fir dry	9	965
			Kail Green fallen	1	189
			Total	71	10070
		134/H	Fir Green fallen	128	18727
			Fir dry	19	3176
			Kail Green fallen	1	80
			Total	147	21983
3	2004-05	93/H	Kail dry fallen	156	10410
			Fir dry fallen	517	70514
			Total	673	80924
		94/H	Kail dry fallen	1040	42918
			Fir dry fallen	377	35660
			Total	1417	78578
		97/H	Deodar dry fallen	9	1076
			Kail dry fallen	27	1946
			Fir dry fallen	108	14701
			Total	144	17720
4	2005-06	Nil	Nil	Nil	Nil

S.No.	Year	Compartment No.	Species	Marking Conducted	
				No.	Volume (in cft)
5	2006-07	148/M	Chir Green	111	892
			B.L.	642	
		149/M	Chir Green	495	13195
			B.L.	535	
		150/M	Chir Green	282	10467
			B.L.	630	
		151/M	Chir Green	192	4542
			B.L.	232	
		153/M	Chir Green	240	6422
			B.L.	254	
		154/M	Chir Green	309	2724
			B.L.	745	
		155/M	Chir Green	85	3567
			B.L.	518	
		157/M	Chir Green	128	5166
			B.L.	271	
		158/M	Chir Green	50	501
			B.L.	4	
		159/M	Chir Green	574	3353
			B.L.	135	
		254/M	Chir Green	289	2626
			B.L.	33	
		255/S	Chir Green	171	5389
			B.L.	16	
		1/S	Kail	338	17558
			Fir	140	911
		2/S	Kail	258	17763
			Fir	58	4980
		3/S	Kail	955	46283
		4/S	Kail	358	20960
			Fir/Spruce	217	27038
		5/S	Kail	134	5827
			Fir/Spruce	187	16571
			B.L.	59	
		6/S	Kail	50	313
			Fir/Spruce	263	8170
			B.L.	589	
		9/S	Kail	139	1383
			Fir/Spruce	39	1701
			B.L.	178	
		13/S	Kail	42	614
			Fir/Spruce	10	118
			B.L.	49	
		14/S	Kail	131	1101
			Fir/Spruce	11	1041
			B.L.	90	
6	2007-08	Nil	Nil	Nil	Nil
7	2008-09	12/S	Kail Green	16	170
			Fir Green	01	360
			B.L.	39	
		188/M	Chir Green	129	8550

S.No.	Year	Compartment No.	Species	Marking Conducted	
				No.	Volume (in cft)
			Chir Pole	117	
			B.L.	18	
		189/M	Chir Green	41	2607
			Chir Pole	66	
			B.L.	05	
8	2009-10	Nil	Nil	Nil	Nil
9	2010-11	Nil	Nil	Nil	Nil
10	2011-12	Nil	Nil	Nil	Nil
11	2012-13	Nil	Nil	Nil	Nil
12	2013-14	93/H	Kail	70	5953
			Poles	32	
			Fir	52	7562
		94/H	Kail	458	42311
			Poles	47	
			Fir	244	35728
			Poles	40	
13	2014-15	Nil	Nil	Nil	Nil

4.1.4. The SFC prepares the estimate for the timber operation, based on the expected out turn and calculates the financial cost for extraction and transportation of timber upto its central depots. Then the SFC allocates the work to the contractors for execution of timber operation based on competitive bids. When the timber is dumped in the road head, the transportation of timber is permitted by either CF or the CCF (Territorial), after due verification of the stocks.

4.1.5. The entire operation of timber extraction and transportation shall be very closely monitored by the territorial field staff. From the starting of felling operation upto the disposal of debries and handing over the compartment back to the forest department, it should be monitored properly. The felling of marked trees shall start only after the proper handing over of the marking to the SFC. The felling shall always be on the Hill side; in rarest cases it is along the contour and never on the down side. The falling tree shall never injure the other standing trees. Likewise there are many conditions. The territorial department shall be reported about the progress of the felling operation every month.

4.1.6. The felled tree is delimbed and logs of standard sizes are cut. The logs are debarked and rolled down to road head for further transportation in Kashmir valley, but extracted into scants in Jammu province. The 10'X10"X5" wooden sleepers are called as BG sleepers as it was meant for Broad Gauge Railway Sleepers. Apart from BG, the terms used by local people meant for under sized sleepers are *Pasale, Chakkoor* and *Dimdima*. The extracted scants are brought to road head either by head load, *Pathru* or aerial ropeway (*tar* span). The pathru is used when the extracted stuff is more than 30000 sleepers and intended to be transported from the higher elevation point to the lower destination through steeper path. When the sleepers have to cross longer distance and many deep valleys, the aerial ropeways are used. When the sleepers move under the force of gravity, no extra mechanical power is required. If it has to move against the gravity, the diesel engines are used to power the lifting of scants against the gravity. If smooth moving water channel is available, the from the origin upto the

destination, the scants are launched in water body and caught at the *boom* erected at the destination. From the road head the scants are loaded in trucks and transported. Form -25 (Transport permit) is issued by territorial division for monitoring the land transportation of forest produces.

4.1.7. Mostly, the timber is sold in open auction by SFC.

Table 4.3: The rates in vogue in SFC for timber operations during 2013-14 are as follows:

#	Activity	Category (norm rate in Rupees)			
	Sawn form	**D**	**C**	**B**	**A**
(a)	**Extraction (on FMM)**				
1	Felling (per cft)	3.37	2.82	2.56	2.01
2	a. Hans Sawing – under/odd size (per cft)	44.66	40.80	37.79	34.37
	b. Hand Sawing – standard size (per cft) 10/12*10*5 ; 10/12*10*5 Psl ; 8/9*10*5 ; 10/12*10*4 ; 10/12*8/7*5 & Psl	51.04	46.63	43.18	39.28
(b)	**Off–road transportation (on DMM)**				
3	Pathroo (per cft/Km of 33 chain)	7.46	7.26	7.07	6.88
4	Pacci nail (per Cft/Km of 33 chain)	2.79	2.51	2.51	2.41
5	Tarspan (per span/cft)	6.30	5.99	5.99	5.99
6	S.N Mahan (per cft per km of 33 chain)	1.96	1.85	1.85	1.71
7	Main Nallah Mahan (cft/Km)	1.71	1.71	1.71	1.71
8	Head carriage (forests) (per cft/chain)	0.55	`0.55	0.55	0.55
9	Crane (per cft/Km)	9.44	8.97	8.97	8.97
10	H/C after nikkasi (per cft/chain)	0.58	0.58	0.58	0.58
(c)	**Minor related activity (on DMM)**				
11	Launching (S.N Mahaning) / Cft	0.41			
12	Nikassi (per cft)	0.83			
13	Stacking (per cft)	0.78			
	LOG FORM				
(d)	**A. Extraction (A1 +A3)**	7.56			
	A1 Conversion	5.03			
14	A1.1 Debranching &Debarking /cft	1.03			
15	A1.2 Sawing &log marking/cft	4.01			
16	A3 Felling (per cft)	2.52			
17	Loading logs (per cft)	4.55			
18	Un- loading Logs (per cft)	0.06			

(e) Log Rolling:

S.No.	Log rolling upto Kutcha loading point (Per cft chain)	Norms rate in Rupees
1	Category A (0-20 degrees)	0.93
2	Category B (20-30 degrees)	0.67
3	Category C (30-40 degrees)	0.49
4	Category D (> 40 degrees)	0.22

(f) Kutcha Road Transportation (Log Form) (figures in Rupees):

Volume slab Cft	Distance slab			
	0-50 km	6-10 km	11-20 km	Above 21 km
Upto 5000	3.45	2.65	2.05	1.62
5001-10000	3.39	2.45	1.72	1.19
10001-20000	3.21	2.38	1.69	1.16
20001-40000	3.06	2.26	1.60	1.10
40001-80000	2.90	2.10	1.47	0.97
Above 80001	2.74	1.96	1.36	0.91

(g) Pucca road transportation (Log form) (figures in Rupees):

S.No.	Distance slab in Km	Rate in Rs/ cft/Km	Rate with 15% contractor's profit (Rs/cft/km)
1	0-20	0.34	0.40
2	20-40	0.30	0.34
3	40-70	0.28	0.32
4	Above 70	0.25	0.28

(h) Pucca road transportation (Sawn Form) – National highways (figures in Rupees):

S.No.	Distance slab in Km	Rate in Rs/ cft/Km	Rate with 15% contractor's profit (Rs/cft/km)
1	0-50	0.19	0.21
2	51-100	0.17	0.20
3	101-150	0.16	0.18
4	Above 151	0.14	0.16

(i) Road Transportation (Sawn form)

Other than National Highways (in Rs per/cft/Km)= 0.23

(j) Loading charges (sawn timber) (in Rs per/cft/Km) = 1.46

Activity	Rate
Extraction including felling , conversion rolling etc. (all operations) upto KLP	At the average rate of Rs. 244 per labour per day as per NPC procedure

Table 4.4: Table showing royalty outstanding against the State Forest Corporation as per details provided by the Poonch forest division:

S.No.	Name of agency	Total royalty outstanding as on 01/04/2013 (in Rs)	Total Bills isuued upto 03/2013	Total	Royalty adjusted	Balance
1.	S.F.C.	230343358	-	230343358	-	230343358

4.2. Results of Socio-economic survey:

4.2.1. In the rural areas very few people are getting the occupation in the State Government. The remaining people practise the rain fed agriculture and supplemented by rearing of animals for their subsistence and mostly live below poverty line.

4.2.2. The people are largely benefitted by the welfare schemes of the Government such as MGNREGA, etc. Many people got seasonal employment in GREF under road construction activity. The food grains are supplied by fair price shops in the interior parts of the terrain, so that people are getting something to eat.

4.2.3. As the tract is the remotest part of the state, most of the places are not covered under conventional electric grid. People are being distributed with solar operated light but it is not sufficient. People are still using the torch wood and kerosene lamps for lighting purpose.

4.2.4. As the most part of terrain is unconnected by road net work, the modern fuels still not reached households of these villages and hamlets. People are still using the firewood for cooking and warming of their houses during winter.

4.2.5. Socio-economic survey was undertaken in major part of the division (including the remote area) during the field exercise. The findings of the survey are given in the Appendix XVII of this document.

Chapter -V

Staff and labour supply

5.1. Staff:

5.1.1. **The following statement shows the sanctioned strength and the staff actually working during 2014-15:**

S.No.	Name of post	Sanctioned strength	Actual/existing strength.	Deficit	Excess
1	DCF	1	1	0	-
2	ACF	1	1	0	-
3	R.Os. Grade– I	03	02	4	-
4	R.O.Grade– II	01	-	01	-
5	Foresters	30	14	16	-
6	Dy. Forester.	12	09	03	-
7	Forest Guard	117	83	34	-
8	Watcher	-	04	-	04
9	Malies	05	03	02	-
10	Head Assistant	-	-	-	-
11	Jr. Stenographer	-	-	-	-
12	Sr.Driver	01	-	01	-
13	Jr.Driver.	-	-	-	-
14	Jr.Asst.	05	03	02	-
15	Sr. Assistant	01	01	-	-
16	Accountant	-	-	-	-
17	Accounts Asstt.	-	-	-	-
18	Cleaner/Condtrs	01	-	01	-
19	Jamadar	-	-	-	-
20	Orderlies.	03	04	-	01
21	Frash	-	-	-	-
22	Chowkidar	1	0	0	01
23	Sweeper	01	-	01	-
24	Helper	-	17	-	17
Total		183	141	63	23

5.2. Territorial organization:

5.2.1. **The details of Beats, Blocks and Ranges of Poonch Forest Division are as follows:**

Range	Block	Beat	Compartment	Area
Haveli	Mandi	Hari Budha	1a/H to 6/H	1814
		Arai	7/H to 10/H	929
		ChIkri Ban	11/a/H to 13/H	602
		Ban	14/H to 25/H	2557
		LohaII Bala	26/H to 28/H	533
	Loran	Bella Bala	29/H to 39/H	3548
		Katha	40/H to 50/H	2708
		Loran	51/H to 57/H	1907
		Brachar	58/H to 60/H	511
	Sawjian	Sawjian	61/H to 66/H	1193
		Barari	67/H to 80/H	4111
		Gagrian	81/H to 89b/H	6078
		Chambar Kinari	90/H to 91/H	731
	Poonch	Saloonia	92/H to 94c/H	1033
		Nangali	95a/H to 99/H	998
		Bandi Chechian	100/H to 102/H	263
		Poonch	103a/H to 106c/H	575
		Bagyal Dara	107a/H to 108/H	347
		Bagyal Dara	138a/H to 141/H	603
	Jhulas	Jhulas	109a/H to 116/H	1210
		Mangnar	117/H to 121b/H	568
		Kanuian	122/H to 124b/H	212
	Khanater	Bhench	125/H to 127/H	290
		Khanater	128/H to 131/H	491
		Shindara	132/H to 137/H	630
Total (Wildlife conservation reserve not included)				34442
Mendhar	Dharamsal	Dabraj	1/M to 5/M	645
		Chajjla-A	6a/M to 10/M	444
		Chajjla-B	11/M to 14/M	542
		Dharamsal	15/M to 18/M	485
		Gohlad	19a/M to 20/M	225
	Nar	Dhargloon	21a/M to 22/M	267
		Kangra	23/M to 25/M	459
		Nar	26/M to 30/M	665
	Gursai	Kalar Mohra	31/M to 33/M	309
		Gursai	34a/M to 36/M	409
		Sarhutti	37/M to 40c/M	489
	Salwah	Katarian Salwah	41a/M to 42/M	408
		Kalaban	43/M to 46/M	441
		Chhungan	47a/M to 50b/M	398
	Ramkund	Narol	51a/M to 53c/M	455
		Ramkund	54/M to 56/M	420
		Bagiota	57/M to 58/M	195

		Barila	59/M to 61/M	294
	Chani	Sileni	62/M to 64/M	272
		Uchad	65a/M to 66/M	303
		Ghani	67a/M to 75/M	1445
		Balnoi	76a/M to 81/M	836
Total				10406
Surankote	Murrah	Dogran	1/S to 10b/S	2880
		Chandi Marh	11a/S to 15/S	2191
		Sailan	16/S to 20b/S	2057
		Hill Kaka	21/S to 26/S	3145
		Sapawali	27/S to 34/S	3014
		Murrah	35/S to 40/S	1983
	Gundi	Gundi	41/S to 43/S	1854
		Marhote	44a/S to 48/S	1915
		Hari	49/S to 51c/S	2050
	Samote	Lassana	52/S to 56/S	494
		Sanai	57/S to 60/S	561
		Samote	61/S to 64/S	357
	Bufliaz	Draba	65/S to 68/S	937
		Mastan Dara	69/S to 73/S	1084
		Bufliaz	74/S to 76/S	609
	Behramgala	Mahra-I	77/S to 78/S	346
		Mahra-II	79/S to 97/S	8102
		Behramgala	98/S to 106/S	2800
		Poshana	107/S to 116/S	3220
Total (Wildlife sanctuary area not included)				39599
Grand Total of all 3 Ranges (Wildlife areas not included)				84447
Grand Total of all 3 Ranges if Wildlife areas are included (i.e. 1948 Ha ,1098 Ha, 4819 Ha respectively)				92312

5.3. Labour supply:

5.3.1. It is not always possible to muster sufficient labour. Particularly for resin extraction works local labour supply is inadequate. Local people also remain busy in their cultivation and grass cutting during most part of the working season. Also the department faces great difficulties in carrying out various development works. Although the employment opportunities are very limited in the area, but during the working season the local people can get employment and also remain busy is their corn and paddy fields. This is the vicious circle of unemployment and poverty remains unchanged.

Chapter-VI

Past systems of management

6.1. Introduction of general history of the forests:

6.1.1. The present Poonch Forest Division was part of Forests of Poonch Jagir. Distribution in the year 1947 resulted in the bi-furcation of the Jagir in which Bagh and Sudhnoti Ranges and western parts of Haveli and Mendhar Ranges fell on the other side of line of control in Pakistan occupied Kashmir. After the disturbances these Forests were merged with parts of Old Mirpur Division to form the erstwhile Rajouri Forest Division with Poonch as a Sub-division. Later on in the year 1963, these Forests were separated to form the Poonch Soil Conservation Division which was renamed in the year 1981 as Poonch Forest Division.

6.1.2. Not much information is available about the early history of these forests. However, it appears that with regard to conservancy these forests, being part of a Jagir, were not in the mainstream of the Riyasat of Jammu and Kashmir prior to the year 1933.

6.1.3. Most of the dates in the old records are given in the Samwat years, however for better perception these have been changed into Christian era in the discussion to follow.

6.1.4. In absence of other sources of information the discussion is largely based on explicit or implicit information contained in the Working Plan for Poonch Forest by S. Mohd. Hayat Khan for the year 1934-1944 and the Working Plan for Rajouri Forest Division by Sh. J.N. Dulloo for the year 1960-1980.

6.2. The unplanned period:

6.2.1. These were given free to the villagers without any hindrance earlier, however in the year 1878, four munshis and one Chaprasi were appointed by the Wazir to sell the trees without much supervision. During this period a contract was given to S. Hara Singh to exploit Boxwood and Deodar trees which did not put any restriction as to the number, size or locality to be exploited and this resulted in almost extinction of these species.

6.2.2. In 1888, hammers were first introduced for marking the trees by the Munshis. Petty contractors now began to export timber from British India. With a view to increase the revenue a levy of 12.5% of land revenue was charged on the villagers who could in lieu cut trees in any number for any purpose. However this order was cancelled after a year as it was found that it resulted in immense damage to the forests. The old rate of 4 annas per tree was raised to 8 annas per tree and marking hammers were also issued to Thanadars to sell the trees to contractors, villagers or other purchasers. Four guards were also appointed in each Tehsil to take care of the Forests. To encourage the sale of trees and consequent revenue to the state the Chief Forest Officer was granted 5% commission on all the sales affected by the Forest Department.

6.2.3. A subsequent development in forestry is signified by working on agreement to pay a certain fee (royalty) for every tree cut and removed. However the contractors used to fell a lot more than what they would shoe on record. In 1898 printed permits and agreements were drawn

and Munshis and Thanadars were restricted to sell upto 20 trees to a single purchaser. However, cutting more and recording fewer trees continued unabated.

6.2.4. In 1901 for the first time a trained officer was posted as Chief Forest Officer who detected that the contractors were cutting a lot more trees that for what they were paying. Such contractors were heavily fined. Another change brought in was to stop the earlier practice of collecting tax on land revenue on household basis in lieu of the permission to cut trees without any check or hindrance by the villagers themselves.

6.3. Working scheme period:

6.3.1. In 1904 forest were demarcated and Working Plans, which could be better called as Working Scheme because they lacked necessary details , were drawn up, the provisions of which were generally adhered to.

6.3.2. These schemes divided the whole Conifer bearing area into 5 coupes to be worked in sequence under selection cum improvement fellings. A Silvicultural marking was prescribed to remove dead, dying and unsound tree with sound trees above 7.5 feet girth in case of Kail/Fir and 6 feet in case of Chir if available Silviculturally.

6.3.3. There was no check on the volume so obtained or the total number of trees felled.As a guideline it was prescribed to mark one out of 3-4 over sized girth living trees in case of Chir/Kail and two out of 8-9 over sized girth living trees in case of Fir. It was prescribed not to mark an undersized girth tree capable of living for another twenty years.

6.3.4. As total enumerations were never carried out the restriction on number mentioned carried no meaning and in absence of a volume check very heavy and injurious fellings were done particularly in the post war boom period.

6.3.5. To add to the miseries on forests in the post war boom period a lease was entered into during the currency of which the Jagir was bound to supply a definite number of trees. As this number was fixed very high without considering the forest yield on sustained basis it was necessary to fell practically every mature tree in all but a few good forests.

6.3.6. All accessible broad leaved areas were divided into 30 coupes to be worked under coppice with standards system for the supply of firewood.

6.3.7. During the period after the war all species of timber were sold at enormous rates in the markets in British India. Consequently the Poonch Jagir was able to dispose off nearly all its mature trees at very profitable rates which were not to be obtained for many decades later. Though silviculturally these excessive fellings were to be regretted yet little harm would have been done had the administration realized that it was consuming the capital and not merely working on the current interest from its forests. Because then, part of the capital could be reinvented in raising back the forests. However, it was all treated as current revenue and the day of reckoning came soon when it was realized that over fellings can not continue as only a little mature forest was left in the accessible zone.

6.4. S. Mohd. Hayat Khan's Plan (1934-1943 AD):

6.4.1. As an attempt to undo the wrongs done on the forests, a Working Plan for Poonch Forests was prepared by S. Mohd. Hayat Khan for the period 1934-1943 AD under the guidance of Sh. H.L. Wright, Chief Conservator of Forests of Jammu and Kashmir Riyasat who was also

appointed as Forest Advisor to Poonch Jagir. The forests were compartmentalized for the first time and shown in the management map traced on 1 inch to a mile survey of India G.T. Sheets. A few Compartments were also enumerated. Only the area covered under the present revision of the Working Plan is discussed and analysed here as the rest fallings in Pakistan occupied Kashmir has only a theoretical importance at present.

6.4.2. Besides maintaining a large number of Shikargahs spread all over the division of which the area details were not mentioned, Hayat's Khan's Plan covered 77,553 Ha divided in five working circles mainly on the basis of being commercial, un commercial or reserved for local demands.A striking feature of the plan was that it claimed only 5210 Ha, which is slightly more than 6.7% of the total forest area, as commercial forests.

6.4.3. Chir Working Circle contained only 1104 Ha of which commercial Chir formed 1020 Ha. Worked under selection system with primary object of producing regeneration, it arbitrarily fixed the exploitable diameter at 71 cms, equivalent to exploitable age of 160 years. A felling cycle of 30 years was adopted. Coupes were prescribed by area and the yield was checked by volume, calculated by Von Mantel's formula as 1982 cum (70000 cft) for the whole Mendhar felling series. It was recorded to have 644 cft/acre or 45.2 cum/ha average stocking in the forests under this Working Circle in the part under consideration.

6.4.4. Fir Working Circle contained 6689 ha. of which 4190 ha were commercial Fir and Kail. Worked under selection system, the exploitable diameter was fixed arbitrarily as 76 cm. which corresponded to exploitable age of 152 years in case of Fir and 125 year in case of Kail in accordance to the then available Kulu tables. A felling cycle of 30 years was adopted. Five compartments of Surankot Range and One compartment of Haveli Range were exploited during the currency of this plan. Though the coupes were prescribed by area the yield was not regulated by volume. The marking rules only indicated as to when seeding, felling, thinning or cleaning was to be done. The marking officer was left to mark trees of exploitable diameter at his discretion in the name of silvicultural availability. In case of even aged mature Fir crop, retention of mother trees 40 ft apart was to create a very large opening in the canopy which could not be ordinarily covered by Fir crop, resulting in the creation of permanent gaps. No record is available in the shape of compartment history to substantiate the claim but some of the natural blanks appear to be of this very origin.

6.4.5. Improvement Working Circle contained 14411 ha or about 18.5% of total area laying both in Fir and Chir zones. This Working Circle contained commercial forests not included in Chir and Fir Working Circles as the crop did not contain enough mature trees and consisted only of young to middle aged trees. Only thinning and cleaning was prescribed. It was supposed that after allowing sufficient rest the crop in this Working Circle shall have enough of mature trees so that these compartments are included back in the commercial Chir and Fir Working Circle. This was largely done in the earlier revision of the Working Plan by Sh. J.N. Dulloo.

6.4.6. The unregulated working circle contained 16,123 ha or about 20.7% of the total area lying in Chir and Fir zone consisting of commercial forests which were not included in the earlier Working Circles because the forests then were not fit for exploitation either due to previous heavy fellings or due to heavy local demand and it was apprehended that they would not recoupe by natural regeneration. Complete rest was prescribed for these forests and fellings were to be made only under compulsion of meeting the local demand.

6.4.7. The uncommercial Working Circle contained 39226 ha or about 50.5% of the total area consisting of Broad leaved species or blanks. No treatment was prescribed for this circle.

Only trees required for concessions were to be marked at the discretion of Chief Forest Officer.

6.4.8. The impact of this plan was that invogue heavy, injurious and unplanned fellings were largely stopped. Some small insignificant deodar patches were artificially regenerated with nursery raised seedlings and were reported to be very successful; however there is no trace of them now.

6.4.9. The intangible benefits of forest were not well understood in the early days and therefore the plan did not consider tending and subsidiary cultural operations to regenerate and revitalize the depleted forests justified in view of the investment and returns. The Chief instrument of resurrection of forests in this plan was to provide long complete rest which succeeded only where biotic interference was not present.

6.4.10. The Plan was due to be revised in the year 1944 but the period appears to have been extended till the disturbances of 1947 changed the entire scenario. Before normalcy could be restored these forests were subjected to reckless abuse and vandalism which not only nullified the effects of conservation measures adopted in this plan but also further depletd the forests. The settlement of discplaced population further complicated the problem. Thus once again these forests were not managed under any plan but ruthlessly devastated to meet the local requirements which were disproportionately high due to the vagaries of raids and war like disturbances.

6.5. Dulloo's Plan (1960-61 to 1984-85 AD):

6.5.1. In view of completely changed scenario before and after the 1947 disturbances and the resulting discontinuity in the application of the Hayat Khan's Plan the Dulloo's plan is reckoned as the first plan for the year. This plan was prepared for twenty years period from 1960-1980 for the erstwhile Rajouri Forest Division, which included besides Poonch the present Rajouri and Nowshera Forest Division. It was assumed to have been extended upto 1984-85 as the revision of the plan was not completed till mid 1985 AD.

The following Working Circles were constituted:

1. Chir Interim Working Circle
2. Fir Selection Working Circle and
3. Unregulated and Uncommercial Working Circle.

Chir Interim working circle

6.5.2. This Working Circle contained all the commercial Chir Forests, considered fit for exploitation, covering an area of 8025 ha of which 5656 ha were under Chir crop. It was observed that the percentage of mature and overmature Chir trees was very low in comparision to other diameter classes. This meant that there was preponderance of young and middle aged trees. It was therefore felt that it can not be allotted to regular working with standard silvicultural system. Because this would make it difficult to realize the yield from P.B.I. area over the plan period of 20 years on sustained basis. Since bulk of the crop was of 30-60 cm. dia class with adequate young crop elsewhere, uniform system would envisage considerable reduction in exploitable diameter and rotation. It was therefore decided to have an interim management for these forests so that the trees in the approach class pass on to the exploitable size.

6.5.3. The average diameter of the crop in this Working Circle was assumed as 40 cm and 52 years time assumed to be required for a 40 cm diameter tree to attain exploitable diameter of 60

cm. It was, therefore, proposed to go over the enire working circle in 52 years which was accepted to be the felling cycle. An exploitable diameter of 60 cm corresponding to 120 years rotation was fixed. The present forests were kept under Nowshera-Mendhar felling series, bulk of which 71% has gone to the present Rajouri and Nowshera Forest Division.

6.5.4. For the assessment of growing stock of this Working Circle partial enumeration down to 30 cm dbh were conducted in about 16% of the total commercial area and the enumeration results were amplified by simple proportion by multiplying it by 6.13. Though total area under enumeration was not mentioned specifically but respective compartment areas had been added to analyse the data which is abstracted in the following table.

Table 6.1: Table showing the area statement of various ranges in erstwhile setup:

S.No.	Range	Commercial Chir Area Acre	Enumerated Area Acre	%ge of Total commercial area	%ge of Total Enumerated area
1.	Rajouri	33720	10176	26.7	50.5
2.	Dhaleri	32850	3707	26.0	18.4
3.	Nowshera	45810	0	36.2	0
4.	Mendhar	13977	6268	11.1	31.1
	Total	126348	20146	100.0	100.0

6.5.5. **The following is the abstract of the growing stock obtained from the enumeration results and as assessed for the entire Working Circle:**

Growing Stock in the	30-45	45-60	60-75	75-90	90-over	Total
Enumerated Area	384601	185122	53134	9303	1430	633590
Entire Working Circle (assessed)	2357604	1134798	325711	57027	8766	3883906
No. of Stems/Acre	18.66	8.98	2.58	0.45	0.07	30.74

6.5.6. One serious technical objection to this approach of growing stock assessment is that it was not assessed separately for the two felling series so constituted. In the methodology of selecting the compartments for enumerating as is evident from the table of Para 6.5.4, the area was not taken in proportion of ranges and the variation is too large to be comprehensive under any circumstances. Nowshera Range which constitutes 36.2% of total commercial area of the circle was not at all represented in the enumeration; Dhaleri Range which constituted 26% area was only 18.4% of the enumeration. On the other hand, Rajouri Range which constituted 26.7% of the commercial area was over emphasized to 50.5% in the enumeration and so was Mendhar Range forming 11.1% of commercial area but having 31.1% area in the enumeration. The following table shows growing stock of erstwhile Mendhar Range diameter classwise as assessed on the basis of enumeration of entire erstwhile Chir Interim Working Circle and that of only of Mendhar Range.

Table 6.2: Table showing growing stock of erstwhile Mendhar Range diameter classwise:

Growing Stock of Mendhar Range in the Dia class	30-45	45-60	60-75	75-90	90-over	Total
Assessed on the basis of entire Working Circle	260805	125535	36031	6308	970	429649
Assessed on the basis of Mendhar Range Enumeration	350179	140437	22149	2607	588	515960
Per Acre count on the basis of entire Working Circle	18.66	8.98	2.58	0.45	0.07	30.74
Per Acre count on the basis of Mendhar Range Enumeration	25.05	10.05	1.58	0.19	0.04	36.91

6.5.7. During the twenty years period of the plan 20/52 of the total reduced commercial area that is 24389.5 Acre or 9870 ha (reduced) was allotted for working for the entire Working Circle. Specific areas were allotted for the working for the Ist ten years and 2nd ten years period of the Working Plan.Annual coupe of 135.7 Acre or about 54.9 ha (reduced) was allotted for the erstwhile Mendhar Range. Thus the yield was fixed and checked entirely by area. However, it was indicated that 150000 cft yield by volume was expected using Brandis method.

6.5.8. The unallotted area was proposed to be exploited only after 52 years that is after completing the work in the allotted area. However, it was to begone over for thinning and improvement fellings twice during this period with a felling cycle of 25 years. Thus annual coupes of 3226.4 acres gross or 1561.13 acres reduced were fixed for the entire Working Circle of which 396.1 acre gross or 175.0 acres reduced fell in Mendhar Range. Here again no consideration of volume yield was made.

Results

6.5.9. As described in para 5.5.4. and 5.5.6. There were some drawbacks in the assessment of growing stock which were further magnified by separating the Mendhar Range to form a new division of Poonch. The general condition of the Working Circle was largely different than that of the Mendhar Range which is depicted in the table in para 5.5.6. as the crop here had much more younger age diameter class trees than the average for the entire Working Circle. For the trees above the exploitable diameter instead of an average of 3.10 stems per acre only 1.81 stems/acre were existing in the Mendhar Range. This resulted in over estimation by more than 70%, as for this part of the Working Circle, Mendhar Range, is concerned. Therefore the marking officers never found sufficient stuff to mark though only a very few attempts were made.

6.5.10. The prescriptions of the Plan were not properly understood. It was mentioned very clearly that the volume marked is not the criterion and the yield is regulated by area alone. This meant that the prescribed area was to be worked with whatever little or more yield. For Mendhar Range 135.7 (54.9 ha) reduced to density 1.0 were allotted annually for

exploitation, however, the whole concept was erratically changed as revealed from the control form A of the Chir Interim Working Circle. Without justification it was thought that an yield of 650 cft was equivalent to converted to reduced area by multiplying a presumed average density factor of 0.7 whereas the average density for Mendhar Range as given in the appendix IV-a works out to only 0.45 . Thus, the area yield of 135.7 acres was misconceived as volume yield of 126007 cft effectively. It may be mentioned here that the yield of 650 cft/acre (gross) was only an indication given for the help of the marking officer and was not to be taken as the prescribed yield or a check on the yield.

6.5.11. As recorded in the control form A for the Chir Working Circle Cos no.(new) 24, 27, 29, 31, 62,65b, 65c of Mendhar Range were worked during the currency of Dulloo's Plan for the Major Marking covering actually 872.8 acres (reduced) yielding 129732 cft as against the following compartments mentioned below for working for the Ist and 2nd ten years Plan period.

Period of Allotment	Compartments allotted for major marking (Revised Nos)	Area	
		Reduced Acre	Gross Acre
Ist Ten years	29,31,34b, 35,65b,65c,74,75,76b-Mendhar Range ; 113a-Haveli Range and 63-Surankot	1356.9	2967.0
2nd Ten years	24,27,39,42,62,77-Mendhar ; 119-Haveli ; 62,64-Surankot	1356.9	2780.0
Total		2713.8	5747.0

6.5.12. The prescription for the unallotted area were never carried out and in fact the prescription that no healthy or even malformed tree will be removed for any consideration (excepting those which goes off in B-C grade thinning of the congested pole crop) was readily disregarded to . However as an academic exercise depicting poor standard of simple forestry knowledge and understanding control Form B was prepared upto the year 1980-81 by applying the same unwarranted and incorrect factors, to convert the volume of miscellaneous markings, mainly concession markings, into the reduced area covered. It is most surprising and beyond all comprehensions that the foresters of the time could not even think how this unallotted area reserved for future working could have the huge annual yield of 928.5 cft/acre (reduced) or 162487 cft in total which by misinterpretation had been more than the yield of the allotted area.

6.5.13. The control forms A which was maintained only upto 1973-74 showed various miscellaneous markings, presumably only concession markings, in all the years upto 1973-74 towards yield by converting the volume into reduced area by dividing first by a few factor of 650 and multiplying subsequently by 0.7 as detailed in para 5.5.10. . Thus as mentioned in para 5.5.11. Whereas actually 872.8 acres, about 32% of the prescribed area, was covered on ground in major marking the control form recorded only 541.03 acres. The figure is lower even after adding miscellaneous markings because 650/0.7= 928.5 cft/acre (reduced) is much high an yield for those forests , which in the above mentioned major markings yielded only 148.6 cft/acre (reduced). There was no adverse effect of working less area as really these forests are very young and not much stuff is available to be removed. However, in the miscellaneous markings most of the time trees below the exploitable diameters were removed which was injuries in that it did not allow the crop to

have sufficient number of mature trees with time. It consequently delayed the process of conversion to uniformity because the extraction is economically viable only if sufficient number of trees is exploited in particular forest/compartments. The biotic interferences could not be checked. The combined effect of all this was that the condition of the crop did not improve as was envisaged in the Dulloo's Plan.

Fir selction working circle

6.5.14. The Fir Selection Working Circle contained all accessible well stocked forests and Fir, Spruce, Kail or Deodar fir for commercial exploitation. The constitution of crop in general was abnormal having abundant overmature trees and deficient younger age classes. Regeneration of Fir was found to be inadequate. In the present Poonch Forest Division this Working Circle included 29973 ha of which 20436 ha contained commercial conifer species. This Working Circle was prescribed to be worked under Selection system and fellings of the nature of Selection cum Improvement type were prescribed in the mature crop and improvement fellings in the young crop. The exploitable diameter of 76 cm for all species with corresponding technical rotation of 180 years was fixed. Only one felling series with a felling cycle of 30 years was adopted.

6.5.15. For the assessment of the growing stock of this Working Circle partial enumerations down to 30 cm. dbh were carried out in about 23.8% of the total commercial area and the enumeration results were amplified by simple proportion by multiplying it by 4.20. Though total area under enumeration has not been mentioned specifically but respective compartment areas have been added to analyse the data which is abstracted in the following table.

S.No.	Range	Commercial Area (acre)	Enumerated Area (acre)	% of total commercial area	% of total enumerated area
1.	Haveli	40857	13046.9	56.8	70.7
2.	Mendhar	9643	2601.0	13.4	14.1
3.	Rajouri	21369	2803.8	29.8	15.2
4.	Total	71869	18451.7	100.0	100.0

6.5.16. **The following is the abstract of the growing stock obtained from the enumeration results and as assessed for the entire Working Circle:**

	30-45 cm	45-60 cm	60-75 cm	75-90 cm	90 cm-over	Total
Growing stock in the enumeration area.	D-134 K-37025 F-197630	D-77 K-21030 F-140397	D-29 K-7984 F-94535	D-11 K-2551 F-56282	D-3 K-945 F-61462	D-252 K-69535 F-550306
Growing stock in the entire W.C.(assessed)	D-563 K-155505 F-830046	D-323 K-88326 F-589667	D-122 K-33532 F-397047	D-46 K-10714 F-236385	D-13 K-3969 F-258141	D-1067 K-292046 F-2311285
Number per acre	D-0.01 K-2.16 F-11.55	D- -- K-1.23 F-8.21	D- -- K-0.47 F- 5.52	D- -- K- 0.15 F- 3.29	D- -- K- 0.05 F- 3.59	D- 0.01 K- 4.06 F- 32.16

6.5.17. The objections to the approach of growing stock assessment as described in detail in para 5.5.6. holds good in this case also which is evident from the table of para 5.5.16. holds good in this case also which is evident from the table of para 5.5.16. . These objections were all the more glaring since Kail and Deodar is not found in Rajouri Range and Deodar is

not found in Mendhar Range. Moreover, the number of stems per acre for the main species, Fir for Haveli, Mendhar and Rajouri Ranges on the basis of enumeration was found to be respectively as 30.81, 30.29 and 24.76. Thus whereas it is quite closed in case of Haveli and Mendhar, it is significantly low in case of Rajouri Range. Consequently as the weightage of Rajouri Range in the enumeration is low, the growing stock has been assessed on the higher side. For easy comparison, the falling in the present Haveli and Surankot Ranges as enumerated in Dulloo's Plan. The Deodar trees being negligible in number have been lumped with Kail.

Range	Growing Stock	30-45	45-60	60-75	75-90	90-over	Total
Haveli	In Enumerated area	K-33580 F-91771	K-18368 F-59881	K-6632 F-35418	K-2078 F-18742	K-709 F-17795	K61367 F-223607
	In the W.C. in the entire Range	K-95162 F-260070	K-52053 F-169697	K-18794 F-100371	K-5889 F-53113	K-2010 F-50430	K-173908 F-633681
	No. of stems per acre	K-4.04 F-11.06	K-2.21 F-7.22	K-0.80 F-4.27	K-0.25 F-2.26	K-0.09 F-2.14	K-7.39 F-26.95
Surankot	In Enumerated area	K-3579 F-84049	K-2739 F-66408	K-1381 F-47445	K-484 F-28502	K-239 F-30864	K-8422 F-257268
	In the W.C. in the entire Range	K-13140 F-308580	K-10056 F-243812	K-5070 F-174191	K-1777 F-104643	K-878 F-113314	K-30921 F-944540
	No. of stems per acre	K-0.49 F-11.44	K-0.37 F-9.03	K-0.19 F-6.46	K-0.07 F-3.88	K-0.03 F-4.20	K-1.15 F-35.01

6.5.18. Out of the total prescribed yield of 21 lakh cft for Fir and 0.95 lakh cft for Kail for the combined old Rajouri Forest Division, at the time of creation of Poonch Soil Conservation Division 7.0 lakh cft of Fir was prescribed for Rajouri and 14.0 lakh cft of Fir and 0.65 lakh cft of Kail were prescribed for Poonch. Thus over assessment of Kail was largely corrected. It may be mentioned here that on the lines of yield calculation adopted in Dulloo's plan with the Growing Stock figures for Poonch as contained in para 5.5.17. the yield works out to be 14.22 lakh cft for Fir and 0.67 lakh cft for Kail. However, the basic assumptions adopted in the yield calculation are not based on some scientific study but appears to be an attempt to bring the yield down to 30 cft/acre (commercial) which was the earlier concept of yield for the Fir forests under selection system.

6.5.19. The following compartments were allotted for working :

Range	Co. Alloted for the Ist ten years	Commercial area acre	Co. allotted for 2nd ten years	Commercial area acre
Haveli	9,16a,19,20,32,33,34,39,40 ,46,48,51,53,55,56,59a,65, 66,67,68,70,and 71	9654.4	8,14,15,23,24,25,26,41,42,43, 44,45,49,52,57,59b,64a,64b,7 7,81,82,and 83	8979.5
Surankot	17,18,209,25,32a,32b,33a, 37,38,97,98,99,100,110	7192.6	5a,6,7,10a,16,21,29,30,34,79,8 1,82,101,104,108 and 112	77865
	Total	16847.0	--	16766.0
	G. Total			33613.0

However, including the period of extension only the following compartments covering an area of 13826 acre were worked.

Range	Compartments	Commercial area (acre)
Haveli	32,34,43,44,45,46,48,49,51,52,53,55,56,65,66,70,81,82 and 83	8206.52
Surankot	17,18,79,81,82,97,98,99,100,110 and 111	5619.48
Total		13826.00

6.5.20. The control form A for the Fir Working Circle was prepared upto the year 1980-81 only, when it showed an overall deficit in yield of 1,91,92,332 cft for Fir and 734149 cft for Kail. However, there was an error as compartment 43/H, 44/H and 100/S under work of State Forest Corporation were omitted. As calculated on the basis of the scanty record available now a total of 12817857 cft of Fir and 1521941 cft of Kail were extracted during the entire 25 years currency of Dulloo's plan. Thus it left in the extraction an overall deficit of 22182143 cft of Fir and 103059 cft of Kail. In terms of area, only 41.1% of the total area allotted was worked and in terms of volume 39.2% extraction was done during the currency of the plan, including the five years of extension.

6.5.21. The overall effect of all this was that the crop which had overmature trees in excess and younger trees deficient continued to remain as such. The failure to check and control grazing and reckless destruction of young poles by the grazing during summers restricted the regeneration to be deficient in general.

Unregulated and uncommercial working circle

6.5.22. The unregulated and uncommercial working circle included all forests that were not found fir for any systematic working on account of the nature of their crop, poor stocking, uneconomically long lead, precipitous ground or high altitude. It also included tree less blanks or well stocked forests close to the cease fire line.

6.5.23. The present Poonch Forest Division had 147255 acres or about 59591 ha , amounting to 61% of the total area allotted to this Working Circle which was grouped under two series :

(a) Protection Series

(b) Miscellaneous Series

6.5.24. The Protection series covered 26442 ha and included the Shikarhag, the high level conifer zone and the alpine blanks. Very conservative fellings of the type Selection cum Improvement were prescribed for trees above 75 cm dbh to meet the local demand.

6.5.25. The miscellaneous series covered 31693 ha classified under three categories : (a) Oak and Miscellaneous broad leaved species , (b) Blanks (c) Well stocked Chir Forests on or near cease fire line . The first category was further subdivided into three groups (i) Banj Oak area (ii) Temperate broad leaved area and (iii) Banesari area. The temperate broad leaved and Banesari areas were proposed to be left untouched while the Banj area was proposed to be worked to meet the requirement of fuelwood in the towns. The annual yield was not calculated not other details were given , however, the following compartments , covering 6881 ha of which 5232 ha was Oak , were allotted to this category.

Range	Compartments (new number)
Haveli	1a,95b,96a,104a,104b,105a,105b,106a,106b,107a,108,120,125,128,129,130 and 135
Mendhar	22,23,28
Surankot	42,51a,51b,51c,54,55,56,57,58,65,66,67,68,69,70,71,72 and 74

6.5.26. Areas falling under category (b) , blanks , were proposed to be taken up under ten years integrated Soil Conservation Scheme to the extent possible depending upon the availability of funds and protected against excessive lopping , grazing and browsing.

6.5.27. The Forests under category (c) which were close to the ceasefire line and well connected through army roads with the previous sanction as and when feasible. No further details as to the yield or area were given.

6.5.28. Some of the Forests of this Working Circle particularly the broad leaved forests and those near habitations are presently in poor, depleted or scrub conditions. Some of the accessible broad leaved forests have been worked during the Working Scheme Period as mentioned in para 5.3.6. Since the beginning of Hayat Khan's Plan in 1934 firewood coupes were abandoned to revitalize these forests and firewood has been extracted only to meet the demand of the townships from small areas generally from the collection of dead and fallen material. But the earlier Working Plan officers did not propose concentrated working to rehabilitate these forests, perhaps because necessary funds were not then available with the department for such purpose. They did not visualize that without concentrated working and regeneration operations these forests could not regenerate on their own. It may be that the depleted condition of the forests was not so hopeless at that time. However, under heavy biotic pressure some of these forests are presently in dire need of strict protection and concentrate working including plantations which demand the creation of a separate working circle.

6.5.29. **Nurseries:**

A number of Nurseries and Plantations were mentioned in the Hayat Khan's plan in Haveli Range maintained for Kuth and Deodar propagation. The majority of them in the part under the present Poonch forest division. However, there is no trace of them now. Lack of good nurseries in the entire tract was observed in Dulloo's Plan which mentions of a good beginning with the creation of two Nurseries, one at Surankot and the other in Poonch. Some more nurseries have been added up since then.The list of the Nurseries is provided in Appendix IX.

6.5.30. Past revenue and expenditure:

The following statement shows the Revenue, Expenditure and surplus figures, rounded to the nearest rupee, for the last 22 years:

Year	Revenue (A) Rs	Expenditure (B) Rs	Surplus
1963-64	220753	`119092	101661
1964-65	185060	137566	47494
1965-66	253869	132802	121067
1966-67	217148	`150790	66358
1967-68	373943	156367	217576
1968-69	356680	227239	129441
1969-70	244590	258366	-13776
1970-71	160733	284188	-123455

1971-72	127583	260060	-132477
1972-73	132694	296282	-163588
1973-74	184911	412079	-227168
1974-75	699563	447469	252094
1975-76	968282	260265	708017
1976-77	1523797	59380	1464417
1977-78	1227079	448481	778598
1978-79	2731169	199874	2531295
1979-80	1056191	87564	968627
1980-81	2800050	1840996	959054
1981-82	3654088	2532502	1121586
1982-83	6327088	1670043	4657045
1983-84	8736311	2167194	6569117
1984-85	14457958	2151256	12306702

6.5.31. Except for the period 1969-70 to 1973-74 the balance sheets of para 5.7.1. Shows profits which in the later years have increased sharply. This sharp increase is on account of rise in the production and rate of the crude resin extracted in the Division. Revenue from resin alone for the last five years has been shown in the following table:

Table 6.3: Table showing the revenue from resin w.e.f. 1980-81 to 1984-85:

Year	Revenue (Rs)
1980-81	925000
1981-82	1908434
1982-83	4469441
1983-84	1882770
1984-85	3000000

6.6. Vinod Ranjan's Plan (1985-86 to 2015-16):

6.6.1. This was the revision of Shri J.N. Dullu's Working Plan for Rajouri Forest Division AD 1960-1980 which covered the forests constituting the present Poonch, Rajouri and Nowshera Forest Divisions. To keep pace with modern trends in forestry few changes were incorporated in the methodology adopted in the revision of the Working Plan and else in the prescriptions of Forest Management.

6.6.2. In the methodology adopted for the assessment of the Growing Stock Bitterlich's method of point sampling was applied with stratified Random Sampling. The randomization was done on firm statistical basis so that the statistical tests may be applied meaningfully. The results of Point Sampling were checked with partial enumerations conducted mainly in the areas prescribed for working during the currency of this working plan. No plot sampling was carried out.

6.6.3. The management of Fir forests was not changed much excepting that the Marking Rules were prescribed with more rigidity and precision. However, the management of Chir Forests was radically changed as its regeneration was found to be very deficient and at places totally absent. Conversion to Modified Shelterwood Uniform System involving concentrated Regeneration operations was prescribed for them. Large areas were prescribed for Rehabilitation and Afforestation works. A new method of Resin Tapping namely Rill method, was prescribed to utilise the valuable Tapping space more advantageously.

6.6.4. The field work of the revision of the Working Plan was taken up in July, 1982 by Shri K.P. Sharma. When Shri Vinod Ranjan took over in late March 1983, the layout work was already over and Stock mapping, Compartment description, Point Sampling and Growth studies were not started. Mr. M.I. Mir , Range Officer contributed in Compartment Descriptions , Stock mapping and Point Sampling in some Chir Zone. Most of the remaining field work was conducted by Shri M.M. Gupta, A.K. Gupta and N.S. Kala, ACF. The collection of Resin tapping data was done by Shri R.C. Gupta, Range Officer along with Shri V.R. Makhnotra.

6.6.5. The field work of the revision of the working plan was completed by January 1985 in 31 months and the drafting took another 4 months. The entire exercise of the revision of the Working Plan was completed in about three years.

The following Working Circles were constituted for the Division.

1. Chir working circle.
2. FIR selection working circle.
3. Rehabilitation working circle.
4. Resin (Overlapping) working circle.
5. Protection working circle.

6.6.6. Chir working circle:

This Working Circle included accessible, comparatively better stocked Chir Forests which can be managed under the Modified Shelterwood Uniform System.

Silviculture system prescribed: Before this Working plan the forests allotted to this Working Circle were managed during the last fifty years pragmatically under Selection system. In the past the middle aged trees were largely consumed in illicit damage and in meeting the demands of the concessionists. Due to excessive grazing along with frequent fires the regeneration was not satisfactory. There was conspicuous reduction in number of stems in the diameter class 20-30 over that of diameter class 30-40 and similarly in the number of stems in the diameter class 10-20 over that of diameter class 20-30. This necessitated the introduction of a Silvicultural system modified to suit the forest crop under prevailing conditions and limitations for the management of these forests. It was therefore decided that the conversion from irregular to even aged forest will be taken up under the Modified Shelterwood Uniform System with long conversion period and retaining more of advanced growth so that the working is concentrated to regenerate a compartment in shorter duration.

Exploitable size and rotation prescribed: 70 cm dbh has been prescribed as exploitable size with a rotation period of 160 years.

Methods of executive felling (Marking rules): The object of felling in the Regeneration Block is the obtain young, healthy and more regular crop to be nursed under the best conditions of growth. To avoid unnecessary sacrifice of immature trees and to guard against the asceptical behaviors of natural regeneration under prevailing conditions, advanced growth upto 50 cm dbh shall be retained as part of the future crop.

Conversion period: It was fixed at 100 years.

Annual coupe: 200 Ha.

Regeneration period: The regeneration period is fixed at 20 years which is about the time for a Chir seedling to grow to a height of 7 meters attaining 10 cm DBH and thus getting free from being trampled or grazed by the cattle.

Periodic blocks: Allotment of Working Circle into fixed periodic blocks was not feasible due to uneven aged and irregular crop. Therefore to gain flexibility in the formation of Periodic Blocks the system of floating Periodic Blocks was adopted.

Regeneration block: It included those areas which consisted of considerable advance growth with substantial mature crop. The fellings here were conducted solely to help establishing of advanced growth and increasing it wherever it is deficient by creating suitable environmental conditions through manipulation of the canopy.

Following compartments were allotted to the Regeneration Block:

Ranges	Compartment No.	Commercial area (ha)	Total area (ha)
Haveli	113a, 115a ,119	247	247
Mendhar	34b ,35 , 39 , 63 ,76b ,77	809	809
Total			1056 ha.

Compartments allotted to unallotted block: Remaining compartments of the Working Circle which covered about 80% of the total area were included in unallotted block. All dead, dying, diseased, malformed markings consisted in unallotted block.

Range	Compartments/Sub compartments	Commercial Area (ha)
Haveli	112, 114a, 114b , 115b, 115c,116, 121a and 121b	394
	3b, 9a, 10b ,12, 13,14,17b,23, 24, 25,27,29,31,32,33,34a,36,37,38,40a, 41a, 41b,42,44,45a,47a,49, 50a, 50b, 51a, 51b, 52, 53a, 57b, 58, 61,62, 64,65b, 65c,69, 70,71, 72, 73b , 75	3758
	Grand Total	4152 ha

Calculation of yield: Since the exploitable diameter has been fixed at 70 cm cm dbh, all trees above 70 cm om dbh shall be removed in due course of time on completion of Regeneration

felling.The crop upto 50 om dbh class shall be considered as advanced growth to be retained as future crop and thus will not be available be retained or removed accordingly as it merges with the surrounding advance growth or not. It is therefore assumed that on 50% of this crop shall be available for felling.

Assessment of growing stock: With Point Sampling Technique using Wedge Prism as in Bitterlich's method.

Yield Prescribed: 16000 cum in during the plan period.

Obtained yield: 1837.64 cum till date.

Applications of prescription and results: Complete data pertaining to extraction from the compartments prescribed in this working circle was not able. There was also the complete ban on the green fellings as per Hon'ble Supreme Court order. Thus, not much could be said about the obtained yield.

6.6.7. FIR selection working circle: This Working Circle's included all well stocked mixed coniferous forests considered fir for the commercial exploitation under selection system leaving Fir, Spruce or Kail as the main crop. The Kail forests had also been included in this Working Circle as the area under Kail is not large enough to create a separate Working Circle for them. Most of the compartments of this Working Circle were included in the Fir Selection Working Circle of the previous Working Plan. However, a few changes were made as per the crop requirements.

Silviculture system prescribed: A continuous vegetative cover was considered necessary and thus, therefore, Indian Selection System was applied. Selection fellings were recommended to remove trees of exploitable diameter and above along with Improvement felling in the younger crop. Thus main operation was the removal of over wood from amongst the group of smaller sized trees.

Exploitable size and rotation prescribed: An exploitable diameter of 76 as was prescribed in the previous Working Plan (Shri J.N. Dullu's Working Plan) for all conifers. However, in accordance with the latest instructions of the time on the subject the exploitable diameter at breast height had been fixed by this Working Plan fixed as shown below:

Kail = 70 cm

Fir = 80 cm

Rotation: Corresponding to the exploitable diameter of the main species Fir at 80 cm, a rotation of 180 years was adopted.

Felling cycle: A felling cycle of 30 years was adopted in continuation with the previous plan.

Felling series: Only one felling series.

Annual coupe: 150 Ha.

Prescribed annual yield: Fir: 23300 cum, Kail: 2200 cum, Total: 25500 cum.

Obtained yield: Fir: 11248.16 cum (till date), Kail: 5261.05 cum (till date), Total: 16509.21 cum (till date)

Total volume assessed at the mean value (in cum): Fir: 3642672, Kail: 392471.

Total volume assessed at the lowest of confidence interval (in cum):

Fir: 3074398, Kail: 253551.

Assessment of growing stock: With Point Sampling Technique using Wedge Prism as in Bitterlich's method.

Realization of yield: All green trees above 30 cm dbh removed for whatever purpose including illicit damage were counted towards yield. A deviation of 10% in the combined yield of Fir and Kail was permitted.

The following compartments were allotted for major markings during the currency of this plan:

S.No.	Range	Compartments	Commercial Area (ha.)
1.	Haveli	8,9,10,14,15 ,16a, 19, 20 , 23, 24, 25,26,39 ,40,41 , 42 , 57 , 71.	3071
2.	Surankote	4,5a ,6,7,10a , 21, 29 , 30,32a , 32b, 33a, 34 , 101,104, 108,109,112	3242
		Total	6313

Subsidiary silvicultural operations: Shrub/Climber cutting and raking of undecompoased leaf litter was prescribed if need arises to induce natural regeneration. Also, in case natural regeneration is insufficient forests were to be cloased for grazing for ten years. Plantations of suitable conifer species was also prescribed if need arises.

Applications of prescription and results: Complete data pertaining to extraction from the compartments prescribed in this working circle was not able. There was also the complete ban on the green felling as per Hon'ble Supreme Court order. Thus, not much could be said about the obtained yield.

6.6.8. Rehabilitation working circle:

This Working Circle included degraded, under stocked and scrub forests for blanks which were rendered to pitiable depleted condition by ill treatments, poor protection and heavy biotic interference. The forest needed intensive treatment for improving their stocking by natural and artificial regeneration.

Sub classification:

Suitable areas were selected for meeting the local demands i.e. Fodder, Fuelwood and small timber. It was thought that it would result into lesser pressure on commercial and protected forests. Since most of the local demands were to be met through Broadleaved species thus

this sub class was designated as Broad leaved Rehabilitation Series. It included compartments as given below:

S.No.	Range	Compartments	Total Area (ha)
1.	Haveli	2,4a,4b,5,6,11b,12,91,92,93a,93b,94a,94b,94c,95b,96a,96b,96c,97a,97b,101b,103a,103b,104a,104b,104c,105a,105b,106a,106b,106c,115d, 133 ,136	3202
2.	Mendhar	15,16,19d,20,21a,21b,22,26,30,40b,40c,45b,46,47b,53b,53c,54,55a,55b,56,66,67a,67b,68,76a.	2194
3.	Surankote	5b,14,15,40,41,50,51a,51b,52,59b,69,71,73,76	3599
		Total	8995

Compartments in the Higher Altitudinal zone having temperate coniferous forests were put in High Level Conifer Rehabilitation Series which are mentioned below :

S.No.	Range	Compartments	Total Area (ha)
1.	Haveli	11a,16b,47,50,54,58,63,79,80,86d	1450
2.	Surankote	3a,3b,39,77,78,106	1048
		Total	2498

Compartments of subtropical Chir Forests were put in Chir Rehabilitation Series.

S.No.	Range	Compartments	Total Area (ha)
1.	Haveli	95a,117,118,124a,124b,126	328
2.	Mendhar	4,11,17a,18,19c,48,65a,74	431
3.	Surankote	59a ,60,61,62,63, 64	475
		Total	8995

Method of treatment: Considerable portion of this Working Circle is either directly encroached or under indirect possession of the local villagers. The co-operation of the local people was emphasized upon and with sincere effort it was expected to be achieved overwhelmingly since the major part of this working circle has been planned to meet the local requirements of fodder, fiber, fuelwood and small timber. Grass cutting was recommended to meet the fodder requirements of the local people but grazing was not permitted. The afforestation technique was recommended as per the requirements and suitability of the area tackled and species planted and its details were left at the discretion of DFO. Blank/Scrub areas, which were vulnerable to grazing, were recommended for fencing.

Annual plantation area:

The Annual Plantation Area for under plantations and open plantations were fixed as given below:

S.No.	Range	Target for under Plantation	Target for open Plantation
1.	Haveli	145	130
2.	Mendhar	70	70
3.	Surankote	115	160
	Total	330	360

Applications of prescription and results: The recommendations of the Working Plan were partially implemented and a significant portion of the working circle is under severe grazing pressure.

6.6.9. Protection working circle

This working Circle included such forest which are (1) situated on highly precipitous ground forming the upper catchments of the stems, (b) situated in the close proximity of the Line of Actual Control, (c) Otherwise commercial forests not included in the productive working circles due to heavy biotic pressure land (d) few well stocked broad leaved forests no small in extent that a separate working circle for item is not desirable.

Subcategorization:

It includes four categories:

(a) Catchment protection category

S.No.	Range	Compartments	Area (ha)
1.	Haveli	37,38,69,72,73,74,75,78,84,85,86a,86b,86c,125,127,128,129,130,131,132,134a,134b,135,137, Kulian WLR & Khara WLR.	11732
2.	Mendhar	7,28,43,59,60,73a	602
3.	Surankote	1,24,48,49,58,66,67,70,72,74,84,85,86,87,88,89,90,91,92,93,94,95,96,102,103,113,114,115,116, KTWLR	17655
		Total	29989

(b) Line of control proximity category:

S.No.	Range	Compartments	Area (ha)
1.	Haveli	87a,97b,87c,88a,88b,88c,89a,89b,90,98,99,100,101a,102,107a,107b,108,109a,109b,110,111a,111b,138a,138b,139a,140a,140b,140c,141,BF1,BF2,BF3	6756
2.	Mendhar	1,2a,2b,3a,78,79,80,81,BF1,BF2,BF3,BF4	2876
		Total	9632

(c) Biotic pressure category:

S.No.	Range	Compartments	Area (ha)
1.	Haveli	1a,1b,3,13,113b,122	1403
2.	Mendhar	5a,5b,6a,6b,8,9b,19a,19b	430
3.	Surankote	9,36,44a,44b,44c,45,46,47,51c,55,56,57,65 & 68	2860
		Total	4693

(d) Broad leaved category:

S.No.	Range	Compartments	Area (ha)
1.	Haveli	17,18,120,123	499
2.	Mendhar	11b,20b,42,43,53 & 54	2134
		Total	2633

Exploitable size:

Chir & Kail	70 cm
Fir	80 cm
Oak	50 cm
Other B.L.	60 cm

Method of treatment: Protection. No commercial felling to be done.Trees below exploitable size not to be marked under any circumstances.

Applications of prescription and results: Biotic Pressure visible on the health of forests. Land stabilization not much observed. Plantations not found to be sufficient.

6.6.10. Resin (Overlapping) Working Circle:

It included all Chir forests which could be tapped for resin without much difficulty was included in this working circle. Thus, the major portion of this working circle overlaps with Chir working circle and minor portions overlap with Protection and Rehabilitation working circle.

Method of Tapping: Rill Method (Light continuous tapping). French Cup and lip method discarded.

Blaze on a tree: One blaze for 106-180 cm girth at breast height and two blazes for above 180 cm girth at breast height.

Blaze Specifications:

Width	10 cm
Interspace	7.5 cm
Depth of rill	2.0 mm
Freshening	Weakly

Length	38.0 Annual

Yield prescribed: 3 Kg/Channel/Year.

Method of execution: Through Extraction Contractors.

Miscellaneous regulation:

One tapper for every 700 blazes
Inspection & passing of tins prescribed
Periodical Inspection to control resin tapping operations
Freshening of blaze to be stopped if the length is exceeded

Applications of prescription and results: Resin tapping did not give desired attention to the health of the tree. No estimation of yield could be done due to absence of data. Minor Forest Produce extraction was banned vide G.O. 290-FST of 2001, Dated: 14-07-2001. Resin tapping did not take place 2004-05 onwards. Majority of the trees which were subjected to resin tapping are yet to recover fully. The resin obtained in the past years can be given as:

Table 6.4: Table showing the Past Resin Extraction of Poonch Forest Division Details w.e.f. 1999-2000 to 2003-04:

S.No	Year	Number of Blazes	Extracted in Tins	Revenue realized (Rs)	Expenditure Incurred (Rs)
1	1999-00	98655	16405	5124043	2550268
2	2000-01	87934	16941	3445053	3200000
3	2001-02	79429	15570	5794296	2434999
4	2002-03	61843	11032	3143674	2550619
5	2003-04	61843	12332	4892426	1987993
6	2004-05	No extraction of resin has been done			

6.6.11. Past revenue and expenditure of Poonch forest division for 10 years

S.No.	Year	Expenditure	Revenue Realised	Surplus
1.	2005-06	35114700	4604381.12	-30510318.88
2.	2006-07	40548000	2532677.81	-38015322.19
3.	2007-08	61783000	2344823.45	-59438176.55
4.	2008-09	47273000	6374892.3	-40898107.7
5.	2009-10	70017000	10519606.25	-59497393.75
6.	2010-11	74737000	10399605	-64337395
7.	2011-12	102418900	7386494	-95032406

8.	2012-13	95840000	6556379	-89283621
9.	2013-14	95636500	9550521	-86085979
10.	2014-15	122208000	10712775	-111495225
		745576100	70982154.93	- 674593945.1

The revenue receipts and also the revenue surplus (Negative in all years) are erratic because of ban on green felling. Since then the revenue receipts have been decreasing, primarily because of erratic payment of royalty by the State Forest Corporation. There has been a steady rise in the actual expenditure, but the increment is definitely not in proportion to the rise in salaries, wages, inflation and cost of living. In real terms, therefore, the allotments have actually decreased over the years. The biggest casualty in this regard has been the forest conservancy related operations like fire protection, subsidiary silvicultural operations, buildings and paths, nurseries etc. Similarly the volume of work in terms of plantation and soil conservation activities has also declined. The shrinkage of funds for normal maintenance and developmental activities has started taking its toll on the forests of Poonch Forest Division and the effects will become more pronounced in the year to come.

Chapter-VII
Statistics of growth and yield volume table

7.1. Volume table:

7.1.1. Local volume tables have not been prepares for any species found in this Division. No sample plots are maintained by the Forest Research Division or the territorial Division. There has been a practice so far to prepare local volume tables by graphical and regression methods for academic interests only, as the local volume tables so prepared have never been adopted for actual yield calculations. Also due to Government policy regarding ban on commercial fellings in entire Poonch Forest Division no field work was carried out in this plan for preparation of local volume tables.

7.2. Growth studies:

7.2.1. No stump analysis were carried out in this Plan for finding out the growth rate. Also, the Chir forests lie close to habitations and therefore Chir stumps, wherever they are available, have been damaged by the locals in the extraction of torchwood and firewood. Moreover, as is revealed in the present assessment of the growing stock mature Chir trees are disproportionately low in number. As required for stump Analysis Chir stumps above 70 cm diameter could not be found in sufficient number. However, Age-diameter relationship for Chir determined by Sh.Vinod Ranjan in the previous revision was found to be:

Age Year	DBH – (O.B) (Cms) Chir
17	10
31	20
47	30
62	40
77	50
89	60
101	70

7.2.2. The growth depicted above was exceptionally high and was not taken as crop characteristic. The following reasons were assigned by Shri Vinod Ranjan for this behaviour:

(i) Chir is a light demanding species and the crop is very open. Therefore, the growth of a particular tree being free from light competition is faster than what it would have been in a congested stand.

(ii) The Chir stump has invariably been scooped for firewood. The effects of buttress like root growth was appreciable.

It was because of the above reasons that Shri Vinod Ranjan did not use the Age-Diameter relationship determined by him as they did not represent the general behaviour of the crops.

Table 7.1: Age Diameter relationship for Chir by others:

Site	Reference	Dbh(OB)	10	20	30	40	50	60	70
All India	FRI Yield Table	Age (Years)	20	32	46	62	80	98	160
Reasi	Working Plan	Age (Years)	16	31	46	62	79	100	125

A comparison of the tables of para 7.2.1. and para 7.2.2. Shows that the growth rate upto the diameter growth of 50 cm is quite similar. However, thereafter the growth rate in the three cases are not comparable. The All India Chir figures shows sharp tapering after 60 cm dbh whereas Poonch Chir and Reasi Chir curves do not taper off even upto 70 cm dbh. According to Shri Vinod Ranjan this issue required further study and research.The Kullu volume table (the local volume table of Himachal Pardesh State forest department for the Kullu region) is presently used in this State.

7.2.3 In the previous Working Plan Shri Vinod Ranjan mentioned the Age-Diameter Relationship for Fir from various sources which is given below:

Table 7.2: Table showing Age-Diameter relationship for 30 Fir Stumps which were analyzed during previous Working Plan revision exercise.

Site	Reference	Dbh (OB),cm	10	20	30	40	50	60	70	80
Poonch	Fieldwork	Age(Years)	34	54	74	95	116	135	155	177
Reasi	Khan's W.P.	Age(Years)	26	57	84	114	139	163	187	212
Kishtwar	Narsinghia's W.P.	Age(Years)	33	61	87	113	137	161	185	208
Pir Panjal	Tickoo's W.P.	Age(Years)	46	69	90	112	136	163	194	231
Langate	Kawosa's W.P.	Age(Years)	23	42	57	78	106	150	-	-
Chakrata	F.R.I. Publications	Age(Years)	-	66	89	111	132	154	177	204
Kulu	F.R.I. Publications	Age(Years)	-	-	74	93	114	138	160	190
Tons	F.R.I. Publications	Age(Years)	-	54	75	95	116	135	-	-

7.2.4. It was evident from the above table that the rate of growth of Fir is higher in Poonch in comparison to Kashmir valley and Chenab valley. Its growth rate was very close to that of Tons Fir. However, data for Tons Fir was not available beyond 60 cm dbh. Upto 60 cm diameter Kulu Fir compares with Poonch Fir but there after the former lagged behind. Fir in Chakrata grew even slower than Kulu although it is faster than that in Kashmir and Chenab valley. In Selection system, vigorously growing dominant trees have a higher proportion. As the climatic condition of Poonch was quite different than that of Kashmir, Chenab valley or other place Shri Vinod Ranjan relied on using the growth data obtained from Poonch in this Working Plan. However, the present working plan exercise will rely on the Kullu volume table (the local volume table of Himachal Pardesh State forest department for the Kullu region) as it is presently used in this State.

Dia Class (cm)	Deodar (m^3)	Kail (m^3)	Fir (m^3)	Chir (m^3)
20-30				
30-40	0.76	0.78	0.84	0.48
40-50	1.33	1.35	1.50	1.13
50-60	2.10	2.27	2.97	2.21
60-70	3.14	3.34	4.90	3.54
70-80	4.30	4.42	6.85	4.87
80-90	5.60	5.35	8.30	6.20
90-100	5.85	6.14	9.40	6.95
100 & over	7.56	6.74	10.19	7.48

7.3. Quality class:

7.3.1. Fir found in this area is generally of quality class I. It fells down to quality class II only when outside its altitudinal zone or on exposed Southern Aspects.

7.3.2. Chir found in this area is generally of quality class II. Quality class III is met where the soil is very shallow and in the higher zone where Chir occurs mixed with Quercus Incana.

7.4. Methodology adopted for the assessment of the growing stock:

7.4.1. The stratified random sampling with the Bitter lick technique known as Point sampling or Plot sampling or probability proportional to size P.P.S., coupled with remote sensing and GIS tools has been continued to assess and prepare the inventory of the growing stock. The entire divisional area is stratified and the random points were generated in the GIS software. The random points served as the centre of the 0.1 ha. Sample plots.The sampling unit is a random point around which the crop measurement and description has been noted in accordance with standard forms. This method has been using by the Working Plan Officers in this State for the past few decades and is found quite suitable to this division. This method is suitable to assess the growing stock on hill slopes and where the crop exhibits tremendous variability with respect to their composition.The stratification (i.e. method of Division of heterogeneous population into more or less internally homogenous sub-poluations called strata) of the Forests is stratified into different strata by lumping together alike compartments having as much homogeneity as possible among them.

7.4.2. As the forest of this Division are heterogeneous in nature so the stratification was done to make more or less homogeneous units, the following strata and sub-strata are identified :

1. Chir Working Circle
2. Fir Working Circle
3. Protection Working Circle
4. Rehabilitation Working Circle.
5. Oak Working Circle
6. Eco Tourism (Overlapping) Working Circle
7. Wildlife Management (Overlapping) Working Circle.
8. Forest Protection (Overlapping) Working Circle.
9. Joint Forest Management (Overlapping) Working Circle.
10. Non-timber forest produce (Overlapping) Working Circle
11. Grazing (Overlapping) Working Circle

7.4.3. Method of working circle wise assessment of growing stock: The method of working circle wise assessment of growing stock is presented as follows.For estimation of growing stock, stratified random sampling technique was adopted coupled with remote sensing and GIS tools. The entire divisional area is stratified and the random points were generated in the GIS software. The random points served as the centre of the 0.1 ha. Sample plots. The number of sample points required to be surveyed and measured in each of the above strata to achieve the desired accuracy of 20 percent at 95 percent confidence level was computed on the basis of a preliminary survey.

7.4.4. Allocation of compartments to various working circle: The compartment allocation during the previous working plan was consulted. The compartment wise marking carried out during the period of 1978 to 2012 was studied carefully. The working plan officers visited more than 50% of the compartments and observations regarding availability of growing stocks, distribution of various dia classes in the compartment and the regeneration established in the areas where felling operations carried out, were made. As per the observation and the inferences the compartments were allocated into various working circles.

7.4.5. **Laying out of compartments in the field:** The compartments were laid down in the field by making coal tar rings of 10 cm width in the centre of 30 cm dry wide ring on the trunk of suitable trees. Compartment number and the boundary features have been carved and painted with coal tar at breast height on suitable tree trunks at the base middle and top of the compartment and in important locations.

7.4.6. **Creation of GIS platform for working plan exercise:** Using open source softwares, scanned maps, satellite imageries such as LISS III (supplied by ISRO, Hydrabad) LANDSAT 7 (supplied by USGS) and Google Earth, the GIS plate form for Poonch forest Division was created. Using DEM produced from Cartostat I and the rectified working plan maps the compartment boundaries of Haveli, Mendhar and Surankote ranges were digitised.

7.4.7. Stratification of forest area: Using open source satellite imageries the commercial forest areas of the compartments were identified digitised and map was prepared. The map of commercial forest area of the various working circles was sent to the field for verification. After verification, the map was used for sampling exercise. A pilot survey was conducted in the working circles to ascertain the numbers of sample plots to be laid down in the commercial forest area for estimation of growing stock. Based on the pilot survey the number of sample plots was decided using statistical analysis. The GIS software was used to locate the centre of the sample plots in the commercial forest area of the working circle, randomly. The location of the plot centres were transferred to GPS (Global Positioning System). Using the GPS the field survey parties located the centre of the plot in the field and laid down 0.1 ha sample plots and collected the required data.

7.4.8. Laying out of 0.1 Ha sample plot in the field: The random points were reached in the field by use of GPS. The random point will be the centre of the plot. In plain areas, from the centre of plot 22.36 m was measured in four directions, i.e. north, south, east and west using compass, and pegs were fixed on ground. The inter distances between the pegs were measured and adjusted to 31.62m so that it encloses an area of 0.1 Ha. If the terrain is sloppy, angle of slope was measured using hypsometer. Based on the degree of slope, slope correction factor was used and the length of the plot was adjusted so that 0.1 ha of horizontal area was delineated for sampling. Once the plot of 0.1 Ha horizontal areas was delineated on the field, all the trees/ poles having diameter, more than 10 cm is enumerated and tabulated, dia-class wise and species wise, in the form, for estimation of growing stock. Resin Channel Survey and Regeneration Survey were also carried out by adopting prescribed methodology.The sample plot enumeration data were compiled working circle wise and the

parameters such as dia class wise, species wise distribution of stems and corresponding volume in the working circle and basal area of the crop were calculated.

7.4.9. Survival coefficient: The growth and statistics of the previous working plans of the West circle were consulted. The Yield tables of common Indian timber species (Himalayan region) Volume –I complied in the Directorate of Forest education and published by Forest research Institute & colleges Dehra Dun in 1967 was also consulted. The growth statistics of conifer species of Kullu region, published by Troop was also studied carefully. The data on the relationship between age and dia class of major conifers, presented by Troop was found to be more appropriate for this region and compared with the field observations. It was found that both are similar and it was used in the present study.

7.4.10. All the data were analysed in Microsoft Excel computer package.