PART-II

FUTURE MANAGEMENT DISCUSSED AND PRESCRIBED

CHAPTER-IX

Basis of Proposals

CHAPTER-IX

Basis of Proposals

9.1 General Objects of Management

9.1.1 The objects of management are as follows:-

1. To conserve, improve and extend protective vegetal cover of forests and thereby to ensure effective soil and water conservation, for maintaining its beneficial influences on the environment of the tract.
2. To maintain environmental stability and biodiversity conservation.
3. To manage the forests in accordance with the silvicultural requirement of the crop for achievement of a balanced, normal structure of forests & to create optimum growth condition for advance growth, by removing the overwood in a phased manner
4. To meet the bonafide requirement of local people residing in and around the forests, with respect to fodder, firewood, agricultural implements, constructional timber etc, to such an extent which is within the bearing capacity of these forests.
5. To obtain yield of resin on a sustainable basis, by regulating resin tapping in a manner that ensures sustainability of its future yield.
6. To conserve and develop the wildlife scientifically.
7. To manage and develop the forests in and around important hill station of the division from ecotourism point of view.
8. To improve the health and bearing capacity of the areas that are being grazed frequently and to prevent them from being over exploited.
9. To seek the involvement of local population in JFM, by making them the stakeholders in protection, management and sharing of the benefits from the forests.
10. To rehabilitate forests which are poorly stocked and close to human habitations.

9.2 Method of Treatment to be Adopted

9.2.1 In order to achieve the above discussed objects of management, the treatments proposed are as under :-

1. All the well stocked Deodar, Kail and Chir forests which are easily accessible shall be managed under the selection system removing different categories of trees which include the dead, dying, diseased, inferior & mature tress above exploitable diameter to create gaps for new regeneration to come up and also the trees of undesired species, coupe by coupe in a sequence to create optimum growth condition for advance growth and openings for natural regeneration. Natural regeneration shall be supplemented by artificial regeneration by seed sowing and plantation.
2. Fir forests of the division shall be kept under improvement by giving proper protection and creating congenial atmosphere for natural regeneration. Natural regeneration Fir shall be supplemented with artificial regeneration by planting nursery raised plants.

3. Forests which are close to habitations, poorly stocked and degraded due to biotic pressure shall be rehabilitated by raising indigenous/exotic species preferred by local inhabitants to meet their demands. Areas prone to erosion shall be stabilized by taking up suitable soil and moisture conservation works.
4. Village Forest Committees shall be constituted on the concept JFM for each village, for the protection and management of degraded forests on the basis of care and share.
5. In order to ensure a sustained yield of resin, areas which bear suitable crop should be kept for resin extraction without causing any adverse effect on the growth of the crop. Areas which are poorly stocked/overexploited should be given rest.
6. Non Timber Forest produce yielding species of the division shall be conserved, preserved and protected. Locals should be involved in the protection of medicinal plants.
7. Areas under wildlife shall be managed for their protection, preservation and improvement.
8. Forests around places of tourist attractions shall not only be persevered and developed from the ecotourism point of view but shall also be

protected against degradation and encroachments owing to the ever increasing tourist business.

9. Areas subject to heavy and un-regulated grazing shall be treated to increase their productivity and carrying capacity by introducing rotational closure to grazing and various pasture developmental operations.

9.3 Constitution of Working Circles: In order to achieve the above discussed objects of management, the following working circles are constituted:

2. Deodar-Kail Selection working circle.
3. Fir selection Working Circle.
4. Chir Selection Working Circle
5. Rehabilitation cum Reboisment Working Circle.
6. Eco-Tourism Working Circle.
7. Wildlife Working Circle.
8. Non-Timber Forest Produce Working Circle [NTFP] (Overlapping)
9. Fodder Development (Overlapping) Working Circle.
10. Forest Protection (Overlapping)Working Circle.
11. Plantation Working Circle (Overlapping).

9.3.1 **Deodar-Kail Selection Working Circle :-**All well stocked Deodar-Kail forests occupying easily accessible slopes and which are fit for working under the system of diffused regeneration are allotted to this working circle. These forests shall be worked under the selection system. This is most important working circle, as the crop managed under it is highly valuable from economic point of view. These forests are confined to Dudu and Panchari Ranges of the Udhampur Forest Division.

9.3.2 **Fir Selection Working Circle :-** The working circles shall include all the Fir forest areas. These forests consist of pure Fir, a mixture of Fir with a sprinkling of Spruce, Deodar and Kail. Fir occupies areas of the

division which are not well stocked and are badly degraded. The main reason being the biotic pressure in the form of grazing, browsing and failure of natural regeneration. These areas shall be protected against the biotic pressure and supplemented with artificial regeneration. To promote natural regeneration the thick raw humus layer shall be removed reasonably. These forests are confined to Dudu and Panchari Ranges.

9.3.3 **Chir Selection Working Circle :-** The better quality Chir forests of this division which are compact, well stocked, and easily accessible, are allotted to this working circle. The crop shall be treated under the selection system. Overwood needs to be removed in a sequence coupe by coupe to save the young crop from suppression.

9.3.4 **Rehablitation cum Reboisment Working Circle :-** This working circle includes all degraded forests of the Division. These areas are mostly near to habitations and bear the brunt of the damage caused by local population and their cattle. These areas continue to be burdened with excessive biotic pressure. Regeneration in these areas has either failed to come up due to excessive and uncontrolled grazing and lopping. Problems of soil erosion are also severe in these compartments. The reboisement and rehabilitation of degraded forest areas along with necessary soil moisture conservation measures, will be carried out along with afforestation work. The working circle has been constituted with the objective of creating multiple product zones so that these forests act as a buffer to the well stocked core forests. These forests will be managed to meet the fuel, fodder and Non timber forest produce (NTFP) requirement of the people. Village Forest committees shall be constituted in each village for the purpose of protection and management of these forests.

9.3.5 **Eco-Tourism Working Circle :-** This working circle shall cover areas in and around the forests having ecotourism potential e.g. famous hill resorts of Patnitop, Kud, Mantalai, Sudhmahadev, Panchari and Gangera hills.It includes the compartment no. 91,93,94,95 and 110a of Dudu range and compartment no. 15 of Panchari range. This circle

is being proposed to enhance wilderness protection and wildlife conservation, while providing livelihood to a large number of people living around natural ecosystem. Efforts will be made to identify various camping sites in these areas. Trekking routes, view points, cafeteria picnic pavilions & a few huts need to be constructed for the tourists.

The broad objectives of this working circle shall be to involve and motivate the local communities to work in collaboration with the Forest Department, to ensure ecologically sustainable tourism which is called eco-tourism.

9.3.6 **Wildlife Working Circle :-** The working circle includes the areas supporting the wild life of the division particularly Sudhmahadev Game reserve, which is already under the administrative control of wildlife (protection) Department and is being managed scientifically by them. Rakhs of Udhampur Range supporting the wild life, shall be managed for protection, preservation and improvement on scientific basis to avoid the man animal conflict.

9.3.7 **Non-Timber Forest Produce (NTFP) Working Circle (Overlapping)** :- This Working Circle shall overlap all other Working Circles of the Division. The Working Circle has been dealth under two sub topics i.e Resin Tapping and NTFP yielding species (other than resin).

9.3.8 **Fodder Development(Overlapping) Working Circle :-** This working circle shall cover areas that experience heavy grazing of permanent and nomadic live stock population. An attempt shall be made to address the menace of unscientific, uncontrolled and unregulated grazing and measures will be taken to sustain the local and nomadic live stock without affecting the forests. Most of the blanks in forests in the low lying areas of the division which are unproductive shall be made productive by introduction of nutritious grasses, legumes, fodder yielding plant species. As far as the alpine zone of the division is concerned pressure shall be reduced from the grass lands by introducing rotational grazing/stall feeding and also by introducing nutritious grasses and fodder species. To mitigate the hardships of

nomads halting places and shelter sheds will be provided where the graziers can spend a few nights before moving to the next station

9.3.9 **Forest Protection (Overlapping Working Circle) :-** This is an overlapping working circle and shall cover all the fire prone areas of the division. Efforts will be made to involve local people in the fire protection works by forming Forest Protection Committee's. The status of fire lines will be accessed based on which fire lines shall be maintained on all ridges and prominent spurs, especially in the Chir forests. Efforts would be made to burn down all the inflammable material such as fallen needles, wood, shrubs, grass etc before the commencement of the hot weather. Futher the issues like illicit felling & encroachments shall be covered in detail in this working circle and the various preventive and remedial measures shall be suggested.

9.3.10 **Plantation Working Circle (Overlapping):** The Plantation Working Circle (over lapping) has been constituted for the first time in Udhampur Forest Division keeping in view the degraded condition of forest areas which are situated near habitations. The main aim of creating this working circle is to pay special attention to the rehabilitation on these problematic areas keeping in view the bonafide requirement of the local people

9.3.11 **Species Wise Distribution of Area** The following table summarizes the species wise distribution of area in hectares under these Working Circles :-

TABLE -9.1

Range	W. circle	SPECIES WISE AREA IN HACTARES							Grand Total
		Deo.	Kail	Fir	Chir	Total	B/L	Blank	
Dudu	Deo-Kail	1024	2460	367	87	3938	701	405	5044
	Fir Selection	498	522	3150	0	4170	424	583	5177
	Chir Selection	0	15	0	1234	1249	104	80	1433
	Rehabilitation	331	382	1525	536	2774	1753	970	5497
	Eco-tourism	359	44	0	22	425	0	149	574
	Wildlife	773	635	2905	25	4338	4976	5196	14510

	TOTAL	**2985**	**4058**	**7947**	**1904**	**16894**	**7958**	**7383**	**32235**
Panchari	Deo-Kail	392	1832	72	73	2369	290	347	3006
	Fir Selection	4	62	537	0	603	0	233	836
	Chir Selection	23	40	0	1581	1644	406	215	2265
	Rehabilitation	61	475	684	4079	5299	831	1332	7462
	Eco-tourism	41	0	0	0	41	0	12	53
	TOTAL	**521**	**2409**	**1293**	**5733**	**9956**	**1527**	**2139**	**13622**
Udhampur	Deo-Kail	0	172	22	0	194	33	59	286
	Chir Selection	0	48	0	4253	4301	53	793	5147
	Rehabilitation	0	61	0	4575	4636	498	1602	6736
	Wildlife	0	0	0	31	31	711	85	827
	TOTAL	**0**	**281**	**22**	**8859**	**9162**	**1295**	**2539**	**12996**

9.5 Blocks And Compartments:

Recognized conventional signs have been used to delineate Sub Compartment, Compartment, Range and Divisional boundaries. A single coal tar ring on trees at breast height, inter-visible from two consecutive points denote Compartment and Sub Compartment boundary. A series of double coal tar ring at breast height of trees indicate Range boundary. Three coal tar rings on trees denote the Divisional boundary. The important ground features such as nalla, ridges, paths, etc. along with Compartment number followed by the abbreviation of the Range name have been carved and coal tar has been applied on the trunks of suitable trees.

9.6 Period Of The Plan: This Plan shall remain in force for a period of 10 years beginning from 2015-2016.

CHAPTER-X

Working Plan for Deodar-Kail Selection Working Circle

CHAPTER-X

Working Plan for Deodar-Kail Selection Working Circle

10.1 General constitution of working circle

10.1.1 All well stocked Deodar-Kail forests occupying easily accessible slopes and which are fit for working under the system of diffused regeneration are allotted to this working circle. This working circle covers the most valuable Deodar-Kail forests of the Division. These forests are confined to Dudu and Panchari Ranges. The Working Circle covers the same area of the corresponding Working Circle of the Plan under revision, however, in the present Plan a few compartments i.e. Co. 20, Co. 21, Co. 22 and Co. 53a of Dudu Range have been shifted to the Rehablitation cum Reboisment Working Circle. The detail of the Compartments allotted to the Deodar Kail Working Circle in the Plan under revision and the proposed plan are given in Table 10.1.

Table 10.1

Range	Plan under Revision		Proposed Plan	
	Comptt No.	Area in hectares	Comptt No.	Area in hectares
Dudu	3b,5,10,19,**20,21,22**,23,25a,27b,28a,28b,31b,35a,45a,49b,**53a,**54b,55a,56a,60a,60b,64,65a,65b,66,67b,68a,69b,70a,70b,71,72,73,75a,75b,76a,77a,80,83,85,86,87a,101a,110c.	9131	3b,5,10,19,23,25a,27b,28a,28b,31b,35a,45a,49b,54b,55a,56a,60a,60b,64,65a,65b,66,67b,68a,69b,70a,70b,71,72,73,75a,75b,76a,77a,80,83,85,86,87a,101a,110c.	8336
Panchari	4b,5b,8,22,23,24,25,29,31,32,33,38,40,48b,49,50a,53a,54a,58a,59a,60,61,65a,66b,67,68,69,70		4b,5b,8,22,23,24,25,29,31,32,33,38,40,48b,49,50a,53a,54a,58a,59a,60,61,65a,66b,67,68,69,70.	
Udhampur	37, 38b		37, 38b	

10.2 General character of vegetation

10.2.1 Deodar-Kail occur either in pure or in a mixed form occupying major portion of the Working Circle. Fir is found at the higher elevations. Similarly Chir is found mixed with the main crop in lower areas, at few places. Patches of broad leaved associates are found in moist depressions and nallas.In Panchari Range Kail constitutes bulk of the crop and in Dudu Range, Deodar occupies the right half of the valley beginning from Kud- Patnitop to Dudu.Kail occupies the major part of the left half of the valley. The crop of Deodar- Kail is predominantly middle aged. Natural regeneration of Deodar –Kail comes up profusely and establishes if protection against grazing is provided. The following table shows the Range wise area under different species in this Working Circle.

Table 10.2

	Commercial Area					**Un Commercial Area**		
Range	**Deo.**	**Kail**	**Fir**	**Chir**	**Total**	**B.L**	**Blank**	**Total**
Dudu	1024	2460	367	87	3938	701	405	5044
Panchari	392	1832	72	73	2369	290	347	3006
Udhampur	0	172	22	0	194	33	59	286
TOTAL	**1416**	**4464**	**461**	**160**	**6501**	**1024**	**811**	**8336**
	6501					**1835**		

10.3 Special Objectives of Management

- To create conducive conditions for advance growth and establishment of regeneration by removing over-wood in a phased manner.
- To remove silviculturally available mature and over mature trees.
- To obtain sustained yield of timber.
- To supplement natural regeneration of Deodar and Kail with artificial regeneration.

10.4 Silvicultural System Adopted

10.4.1 The Deodar-Kail forests under the proposed plan shall be treated under the Indian Selection System. Selection cum improvement feelings will be carried out among trees of exploitable size and above, and only improvement feelings will be carried out in rest of the crop.

10.5 Exploitable Size

10.5.1 The exploitable size for Deodar and Kail is fixed at 70 cm d.b.h. (ob) and for Fir and Spruce it is fixed at 80 cm d.b.h. (ob).

10.6 Rotation

10.6.1 Rotation is practically of no consequence in a Selection forest. Trees which are removed at each felling cycle are those which are deemed to have completed their period of maximum growth corresponding to exploitable diameter. So,in Selection system, felling are primarily regulated through exploitable diameter. The average age at which Deodar and Kail attain exploitable diameter of 70 cm is 150 years. This is also inconformity with the Government decision in which the exploitable diameter of Deodar and Kail has been fixed at 70 cm throughout the state of Jammu& Kashmir. Fir/Spruce attain exploitable diameter of 80 cm in 240 years in this tract.

10.7 Felling Cycle

10.7.1 A felling cycle of 30 years is adopted keeping in view the silvicultural requirements of Deodar and Kail along with distant seed year and biotic pressure.

10.8. Felling Series

10.8.1 There will be only one felling series for the working circle.

10.9 Analysis and Valuation of the Crop

10.9.1 Point sampling technique has been adopted for assessment of growing stock. The field data was collected from 87 sample points/Plots. Mean value of variables viz. number of stems, volume of conifers 30 cm d.b.h. (ob) per hectare have been computed species wise and diameter class wise. The results obtained on the basis of statistical analysis are summarized in Table 10.3.

10.9.2 The diameter class and species wise distribution of growing stock assessed in terms of total number of trees and volume of conifers 30 cm d.b.h. and above in the commercial area of the working circle (6736 hectares), on the basis of mean values per hectare are summarized in tables 10.4 to 10.9.

Table 10.3 **Results of Statistical analysis for Deodar-Kail Selection Working Circle**

Working Circle	Variable (per ha.)	Sample Points (n)	Mean (X)	Variance (S^2)	Standard Deviation (S)	Standard Error (S.E.)	Coefficient of variation (%)	Confidence limits (95%) (X + t x S.E.)		Confidence Interval (C.I.)	Lower limit as % of mean (%)
								Lower limit	Upper limit		
1	2	3	4	5	6	7	8	9	10	11	12
								t= 1.9889597			
Deodar-Kail Selection WC	No. of Stems	84	130.30	9884.33	99.42	10.85	76.30	108.72	151.88	43.15	83%
	Volume	84	161.52	6526.28	80.79	8.81	50..02	143.99	179.05	35.06	89%

Column 7 : S.E. = S/ square root (n)

Column 8 : C.O.V (%) = (S/X) x 100

Column 9 : Lower limit = X - 1.96 x S.E.

Column 10 : Upper Limit = X + 1.96 x SE

Column 11 : C.I. = Upper limit – Lower Limit

Table 10.4 **Statement showing species and diameter(cm) class wise tree count per hectare for Deodar Kail Selection Working Circle**

Tree count per hectare (Mean Value).

Spp.	10-20	20-30	30-40	40-50	50-60	60-70	70-80	80-90	90-100	100 <	Grand Total
Deo.	0.83	2.64	4.08	3.36	3.14	2.71	1.14	0.33	0.17	0.02	18.42
Kail	7.24	14.89	15.74	13.98	11.02	8.20	4.33	1.62	0.26	0.01	77.29
Fir	0.89	1.26	1.07	0.70	0.37	0.49	0.07	0.07	0.12	0.39	5.43
Chir	0.00	0.30	0.21	0.36	0.40	0.79	0.23	0.12	0.00	0.00	2.41
B.L.	4.44	13.61	4.86	2.10	1.29	0.43	0.00	0.00	0.00	0.00	26.73
Total	13.40	32.70	25.96	20.50	16.22	12.62	5.77	2.14	0.55	0.42	130.28

Table 10. 5 **Total tree count over the entire commercial area of Deodar-Kail Selection Working Circle** (Area = 6501 hectares)

Spp.	10-20	20-30	30-40	40-50	50-60	60-70	70-80	80-90	90-100	100 <	Grand Total
Deo.	5396	17163	26524	21843	20413	17618	7411	2145	1105	130	119748
Kail	47067	96800	102326	90884	71641	53308	28149	10532	1690	65	502462
Fir	5786	8191	6956	4551	2405	3185	455	455	780	2535	35300
Chir	0	1950	1365	2340	2600	5136	1495	780	0	0	15667
B.L.	28864	88479	31595	13652	8386	2795	0	0	0	0	173772
Total	87113.40	212583	168766	133271	105446	82043	37511	13912	3576	2730	846950

Table 10.6 Statement showing species and diameter(cm) class wise volume(m^3) of Conifers in Deodar Kail Selection Working Circle

Volume of conifers per hectare (Mean Value).

Spp.			30-40	40-50	50-60	60-70	70-80	80-90	90-100	100 <	Grand Total
Deo.			3.10	4.47	6.60	8.52	5.02	1.89	1.14	0.18	30.92
Kail			11.96	19.01	25.02	27.40	19.15	8.66	1.61	0.08	112.89
Fir			0.90	1.10	1.10	2.39	0.49	0.59	1.12	4.00	11.69
Chir			0.10	0.40	0.89	2.78	1.10	0.74	0.00	0.00	6.01
Total			16.06	24.98	33.61	41.09	25.76	11.88	3.87	4.26	161.51

Table 10.7 Total volume of conifers over the entire commercial area of Deodar-Kail Selection Working Circle (Area = 6501 hectares)

Spp.			30-40	40-50	50-60	60-70	70-80	80-90	90-100	100 <	Grand Total
Deo.			20153	29059	42907	55389	32635	12287	7411	1170	201011
Kail			77752	123584	162655	178127	124494	56299	10467	520	733898
Fir			5851	7151	7151	15537	3185	3836	7281	26004	75997
Chir			650	2600	5786	18073	7151	4811	0	0	39071
Total			104406	162395	218499	267126	167466	77232	25159	27694	1049977

Table 10.8 Distribution of stems and volume (m^3) in Deodar Kail Selection working circle computed at lower confidence interval.

Total tree count of commercial area (6501 ha) at lower interval for Deodar-Kail Selection Working Circle

Lower Limit 83%

Spp.	10-20	20-30	30-40	40-50	50-60	60-70	70-80	80-90	90-100	100 <	Grand Total
Deo.	10-20	20-30	30-40	40-50	50-60	60-70	70-80	80-90	90-100	100 <	Grand Total
Kail	4479	14245	22015	18130	16943	14623	6151	1781	917	108	99391
Fir	39066	80344	84930	75434	59462	44246	23364	8741	1403	54	417044
Chir	4802	6799	5774	3777	1996	2644	378	378	647	2104	29299
B.L.	0	1619	1133	1942	2158	4263	1241	647	0	0	13004
Total	23957	73437	26224	11331	6961	2320	0	0	0	0	144231

Table 10.9 Total volume of conifers over the entire commercial area (6501 ha) at lower interval for Deodar-Kail Selection Working Circle

Lower Limit 89%

Spp.			30-40	40-50	50-60	60-70	70-80	80-90	90-100	100 <	Grand Total
Deo.			17936	25863	38187	49296	29045	10935	6596	1041	178900
Kail			69199	109990	144763	158533	110800	50106	9315	463	653169
Fir			5207	6364	6364	13828	2835	3414	6480	23144	67637
Chir			579	2314	5149	16085	6364	4282	0	0	34773
Total			92921	144532	194464	237742	149045	68736	22391	24648	934479

10.10 Calculation of Yield

10.10.1 The yield will be calculated in terms of number of trees and volume, which in turn shall be controlled by area check by working out the size of the annual coupe. Modified Brandis diameter class method and Von Mantle's formula have been applied for calculation of the yield. The following presumptions have been made in this regard:

1. Only commercial area and its growing stock have been taken into account for the purpose of yield calculation.
2. The growing stock over commercial area of this working circle has been fixed in 10 cm diameter classes indicated by Symbols, I, II, III, IV, V & VI. Class I stands for trees above the exploitable diameter and the other successively below it, to the youngest.
3. The number of trees in all those classes being considered for the purposes of yield calculation have been reduced to the lower limit of confidence interval.
4. It takes 135, 115 and 221 years, on an average for trees of Deodar, Kail and Fir respectively to attain exploitable diameter of 70 cm d.b.h. in case of Deodar and Kail, and 80 cm d.b.h. in case of Fir.
5. It takes 25, 24 and 25 years respectively for an average Deodar, Kail and Fir tree to pass from approach class (60-70 cm d.b.h. in the case of Deodar and Kail, 70-80 cm d.b.h. in the case of Fir) to the exploitable class.
6. To account for possible mortality, rot etc., the yield finally arrived at shall be reduced by 50%.
7. The following survival coefficient percent based on the All India volume tables in respects of Deodar, Kail and Fir have been used in yield calculation.

Table 10.10

Diameter-Class d.b.h. (cm)	Survival percentage of species		
	Deodar	Kail	Fir
30-40	30%	45%	20%
40-50	60%	60%	40%
50-60	80%	80%	50%
60-70	90%	90%	60%
70-80	95%	95%	85%
80 & above	-	-	95%

10.10.2 Based on the assumption above, the number of total potentially available trees over the commercial area of this working circle, calculated at lower confidence limit of the mean value, after due deduction on account of mortality, is tabulated under Table10.11 as follows:

Table 10.11.1 Species and diameter-class wise potential availability of trees from the commercial area of Deodar-Kail Selection Working Circle

DEODAR

Class	VI	V	IV	III	II	I	Total
Diameter-class	below 30	30-40	40-50	50-60	60-70	above 70	
Total No. of trees assessed at mean value	22558	26524	21843	20413	17618	10792	119748
Total No. of trees assessed at lower limit of confidence interval	18724	22015	18130	16943	14623	8957	99392
Age of entry in the class		57	71	90	110	135	
Years in class transition period		14	19	20	25		
Survival Coefficient of the class		0.30	0.60	0.80	0.90	0.95	
No. of potentially available trees		6605	10878	13554	13161	8509	52707

KAIL

Class	VI	V	IV	III	II	I	Total
Diameter-class	below 30	30-40	40-50	50-60	60-70	above 70	
Total No. of trees assessed at mean value	143867	102326	90884	71641	53308	40436	502462
Total No. of trees assessed at lower limit of confidence interval	119410	84930	75434	59462	44246	33562	417044
Age of entry in the class		42	55	72	91	115	
Years in class transition period		13	17	19	24		
Survival Coefficient of the class		0.45	0.60	0.80	0.90	0.95	
No. of potentially available trees		38219	45260	47570	39821	31884	202754

FIR							
Class	VI	V	IV	III	II	I	Total
Diameter-class	30-40	40-50	50-60	60-70	70-80	above 80	
Total No. of trees assessed at mean value	6956	4551	2405	3185	455	3771	21323
Total No. of trees assessed at lower limit of confidence interval	5774	3777	1996	2644	378	3130	17699
Age of entry in the class	84	109	136	166	196	221	
Years in class transition period	25	27	30	30	25		
Survival Coefficient of the class	0.20	0.40	0.50	0.60	0.85	0.95	
No. of potentially available trees	1155	1511	998	1586	321	2974	8545
CHIR							
Class	VI	V	IV	III	II	I	Total
Diameter-class	below 30	30-40	40-50	50-60	60-70	above 70	
Total No. of trees assessed at mean value	1950	1365	2340	2600	5136	2275	15666
Total No. of trees assessed at lower limit of confidence interval	1619	1133	1942	2158	4263	1889	13004
Age of entry in the class		40	57	74	95	120	
Years in class transition period		17	17	21	25		
Survival Coefficient of the class		0.35	0.60	0.80	0.90	0.95	
No. of potentially available trees		397	1165	1726	3837	1795	8919

10.10.3 The stepwise calculation of yield in Deodar-Kail Selection Working Circle on the basis of modified Brandis Diameter Class Method is detailed in Table 10.12.

Table 10.12

		DEODAR	KAIL	FIR	CHIR
a)	Total number of trees in class I	8509	31884	2974	1795
b)	Total number of trees likely to pass on to class I in the first felling cycle from				
	Class II	13161	39821	321	3837
	Class III	13554*(5/20)	47570*(6/19)	1586*(5/30)	1726*(5/21)
	=	3389	15022	264.3333333	411
c)	Total recruitment in class I from class II and III during first felling cycle	16550	54843	585	4248
d)	Annual recruitment from class II and III during the first felling cycle (c / 30)	552	1828	20	142
e)	Stock required to be kept as reserve i.e. half of the total recruitment in 'c' above	8275	27422	293	2124
f)	Surplus stock of class I (a - e)	234	4462	2681	-329
g)	Total possibility of yield in first felling cycle if all surplus stock in 'f' above is removed in 2 cycles (c + f)	16667	57074	1926	3919
h)	Annual yield (g / 30)	556	1902	64	131

i)	Weighted average volume of trees above exploitable diameter as per Kullu Volume Tables in cubic metres	6.11	5.66	9.30	6.38
j)	Total annual volume yield (m^3)	3394	10768	597	833
k)	Deduct Sixty five percent from 'l' above to account for mortality	1188	3769	209	292
l)	Rounded off to lower multiple of hundred	1100	3700	200	200

TOTAL 5,200 m^3

Total Yield Prescribed Excluding Chir = = 5000 m^3

10.11 Calculation of Yield using Von Mantle's Formula

Species	**Yield = 2x(Growing Stock)/ Rotation**	**Rounding off to lower hundred**
Deodar	$\frac{2x178900}{150}$ = 2385m^3	2300 m^3
Kail	$\frac{2x653169}{150}$ = 8709m^3	8700m^3
Fir	$\frac{2x67637}{240}$ = 563m^3	500 m^3
Total	**11657m^3**	**11500 m^3**

After comparing the yield by both the methods the yield calculated by Brandis Diameter class method is less than the yield obtained by using Von Mantle's Method. From conservative point of view therefore the yield obtained by Brandis Diameter class Method is adopted and prescribed as under:

Deodar	=	1100m^3
Kail	=	3700 m^3
Fir	=	200m^3
Total	**=**	**5000 m^3**

****Note**** ***While approving the Draft Working Plan, the Working Plan Committee noticed that in Deodar-Kail Working Circle, the growing stock has decreased while the prescribed annual yield has increased with respect to the previous plans. It was explained during the discussion that the forests shall be worked according to the Selection System according to the revised Plan, while the previous Plans were following the Shelterwood System. The methodology to arrive at the annual yield was changed,which resulted in the decrease in the total yield compared to the previous Plans.***

10.12 Size of Annual Coupe

The size of annual coupe is calculated by formula

$$\text{Annual Coupe (ha)} = \frac{\text{Total commercial area of working circle}}{\text{Felling cycle}} = \frac{6501}{30} = 216.7$$

10.13 Allowable Cut per Hectare

10.13.1 Given the annual yield and the size of annual coupe, the allowable cut is computed by dividing Annual Yield of the Working Circle with the area of annual Coupe.

$$\text{Annual Cut(ha)} = \frac{\text{Annual Yield}}{\text{Area of Annual Coupe}} = \frac{5000}{216} = 23.14$$

10.13.2 The percentage of Annual Yield with respect to total growing stock (computed at lower confidence limit) is as follows:

$$\frac{\text{Annual Yield} \times 100}{\text{Growing Stock}} = \frac{5000 \times 100}{899706} = 0.55\%$$

10.14 Realization of Yield

10.14.1 All fit trees above 30 cm d.b.h. (ob) marked for whatever purpose will count towards yield. Since the Deodar, Kail and Fir are not present uniformly, so it may not be possible to realize species wise yield. Thus, yield prescribed should be regulated in totality. However, a deviation of $\pm$ 20% from the prescribed yield is permitted.

10.15 Method of Executing Felling

10.15.1 During the Plan period of 10 years, 1/3rd of the total commercial area of the Working Circle is to be worked out. In view of the ban on green felling, the sequence of felling has been left to the direction of the Divisional Forest Officer who shall exercise his judgment to select suitable coupes from all over the Working Circle, keeping in view the progress of regeneration. Removal of over-wood standing above the advance growth and regeneration, with a view to liberate it from shade and suppression will constitute the general guide lines in the execution of felling. In order to avoid the invasion of the area by weeds, which come up abundantly in the gaps, the canopy needs to be manipulated with utmost care. Selection forests require elaborate management and great skill on the part of the executive staff to handle the crop. Accordingly the following marking rules are laid down for guidance of the marking officer.

10.16 Suggestions for Marking Officer and Marking/Felling Rules

10.16.1 The marking officer, prior to conducting the marking, must acquaint himself thoroughly with the condition and composition of the crop in the

compartment and its boundaries by traversing over the area of the compartment, at least once.

- Marking should be done by the DCF in-charge of the Division or well trained and experienced ACF. Marking should never be conducted by anybody below the rank of a well trained and experienced Range Officer, in such case the DFO/ACF should check at least 25% of these markings.
- No marking, except the removal of dead, dying and diseased trees, shall be done in areas near and around cultivation and *behaks* with in a distance of 100 meters from their periphery.
- No marking except the removal of actually dead, dying and diseased trees, shall be done along nallah banks within a distance of at least 100 meters on either side.
- No healthy trees below the exploitable size shall be marked.
- No attempt shall be made to disturb the process of the succession by giving preference to one species over the others. The selection character of the crop shall be preferred over the area of this working circle and should be maintained by retaining some healthy trees of exploitable size which do not cause any suppression to the crop.
- No marking should be conducted in areas lacking regeneration. No marking should be done on steep and precipitous slopes.
- The over-mature trees should get preference over the relatively younger and healthier ones.
- Improvement and hygienic marking in all age-classes shall be done.
- Marking for improvement felling shall form an integral part of the major marking.
- All dead, dying, dry and diseased trees shall be marked together with malformed and unfit trees.
- All the trees of exploitable size (70 cm d.b.h. in case of Deodar and Kail and 80 cm d.b.h. in case of Fir) standing over adequate advance

growth should be removed.

- Advance growth includes all the trees and poles up to exploitable size. Selection markings of light to very light intensity shall be done in areas having inadequate but established regeneration.

- In dense groups of trees, of and above exploitable size, the spacing between the stems to be retained will vary from 5 to 8 meters depending upon the status and amount of regeneration present. Selection felling of moderate intensity shall be carried out in such groups.

- In the mixed crop, ecologically most suitable species to the locally should be favored.

- The intensity of felling, over a particular compartment, will largely depend upon the degree of biotic interference to which it is subjected, the amount and status of regeneration, topography, slope and aspect.

- Extreme care has to be exercised at the time of felling so *as* not to damage the crop below.

- Trees marked for felling should be lopped before execution of felling.

10.17 Supplementary Markings

10.17.1 After completion of fellings under major markings, supplementary markings should be conducted. All trees/poles that have been badly damaged during major fellings should be marked. Preferably, these markings should be conducted by the DFO himself. Judicious discretion of the marking officer is, therefore, needed to ensure that provision of supplementary marking is not misused, and only such trees as are considered definitely unfit for retention, or are not likely to survive in the near future, are marked.

10.18 Subsidiary Silvicultural Operation

10.18.1 Villagers should be allowed to take away felling refuse. Left over felling refuse should be control burnt in nallas or depressions.

10.19 Regeneration Measures

10.19.1 Almost all the locality factors except the biotic factors are favourable for regeneration of conifers. The forests located near human habitation experience adverse biotic interference which hamper the natural regeneration to a large extent. However, the areas where pressure from both human beings and their cattle is less, there is no problem of natural regeneration. Due to increase in population of domestic animals and excessive grazing, the extent of area requiring artificial regeneration is increasing by every passing year. An area of 224 hectares is proposed for reforestation and rehabilitation every year which is equal to the area of annual coupe.

10.20 Artificial Regeneration

10.20.1In areas where natural regeneration has failed to come up on its own, artificial measures shall be initiated. Patch sowing of Deodar-Kail should be carried out where favorable soil-moisture condition exists. In blanks close to habitations planting is to be carried out after fencing the area.

Cedrus deodara (Deodar): It occurs between 1800 meters to 2400 meters however it ascends to 3000 meters at places and descends to 1200 meters sometimes.

Seed: Seed is collected during October November

Seed weight: 7000-8000 seeds per kilogram.

Germination percent: 90 percent.

a. **Direct Sowing:** Sowings are done just before snowfall by broadcast method or along contour lines, in broken area or continuous patches. Patch sowing is also done in areas where no weed growth occurs in patches usually at a spacing of 2m x 2m. The seeds germinate in the following spring.

b. **Nursery Technique:** Seeds are sown in the nursery by broadcast method or in lines 10cm apart just before snowfall and covered with thorns. The germination starts in spring and seedlings are properly watered during summer. During monsoon, they are pricked out in beds of size 2m x1m.

c. **Planting Technique:** When the seedlings have attained an adequate size (30 cm approximately), they are transplanted in pits of size 45 cm x 45 cm x 45 cm at a spacing of 2 m x 2 m in the field. Planting operations are carried out just before or during the monsoon. The newly planted area is effectively protected against grazing.

Pinus wallichiana (Kail): It occurs between 2000 to 3000 meters height but sometimes it also occurs at an elevation ranging from 1000 to 4000 meters. It is a strong light demander but grows well on cool aspects.

Seed: The seeds ripen from September to November. Seeds can be stored after drying for 12 to 18 months.

Seed weight: about 16000 seeds per kilogram.

Germination Percentage: 90%

Nursery technique: Seeds are sown in the nursery beds by broadcast method or in lines 10cm apart just before snowfall and covered with thorns. The germination starts in spring and seedlings are properly watered during summer. During monsoon, they are pricked out in beds of size 2m x 1m.

Planting technique: When the seedlings have attained an adequate size (30 cm approximately), they are transplanted in pits of size 45 cm x 45 cm x 45 cm at a spacing of 2 m x 2 m in the field. Planting operations are carried out just before or during the monsoon. The newly planted area is effectively protected against grazing.

10.21 Control of Grazing

10.21.1 The effect of overgrazing is maximum in those forest areas which are situated near habitations. The unrestricted, uncontrolled and unregulated grazing has adversely effected the natural regeneration of the areas. It is prescribed that the areas which are subjected to heavy grazing should be closed for grazing in phased manners and taken-up for artificial regeneration.

CHAPTER-XI

Working Plan Fir Selection Working Circle

CHAPTER-XI

Working Plan for Fir Selection Working Circle

11.1 General Constitution of Working Circle

11.1.1 This working circle includes all the Fir forest areas comprising mostly of all those relatively well stocked Fir forests which are considered commercially exploitable. The Working Circle covers the same area of the corresponding Working Circle of the Plan under revision, however, in the present Plan a few compartments i.e. Co. 53b/D, Co. 57/D, Co. 59/D and Co. 84/D of Dudu Range have been shifted to the Rehablitation cum Reboisment Working Circle. The detail of the Compartments allotted to the Fir Selection Working Circle in the Plan under revision and the proposed plan are given in Table 11.1.

Table 11.1

Range	Plan under Revision		Proposed Plan	
	Comptt No.	Area in hectares	Comptt No.	Area in hectares
Dudu	13,16,17,18,25b,27a,29a, 30,31a,33,34,35b,38,39,40a,40b,42,43,44,45b,47a, 47b,48,49a,51,52,**53b**,54a ,55b,56b,**57,59**,62,63,81, **84.**	6743	13,16,17,18,25b,27a,29a, 30,31a,33,34,35b,38,39,40a,40b,42,43,44,45b,47a, 47b,48,49a,51,52,54a,55b ,56b,62,63,81.	6013
Panchari	1,5a,30,39,65b,66a		1,5a,30,39,65b,66a	

11.2 General Character of Vegetation

11.2.1 The crop consists predominantly of Fir with a sprinkling of Spruce. Deodar and Kail are found mixed together with Fir and Spruce. At places Kail is colonizing at the exposed hotter aspects. Broad leaved species like *Quercus semecarpifolia, Aesculus indica* etc. are found in moist places, near nallas, banks and sheltered slopes. Some patches of *Quercus semecarpifolia* occur on the top most portions of Fir forests. A small patch of *Buxas wallichiana* (Chikri) occurs in lower portion of Fir forests in Co. 5a/P.

11.2.2 There status of new regeneration of Fir forests is very poor. Most of the trees are mature to over mature. The statement showing Compartments allotted to this Working Circle is given in Annexure 1B. The following table shows the Range wise area under different species in this Working Circle.

Table 11.2

	Commercial Area					Un commercial		
Range	**Deo.**	**Kail**	**Fir**	**Chir**	**Total**	**B.L**	**Blank**	**Total**
Dudu	498	522	3150	0	4170	424	583	5177
Panchari	4	62	537	0	603	0	233	836
TOTAL	**502**	**584**	**3687**	**0**	**4773**	**424**	**816**	**6013**
	4773					**1240**		

11.3. Special objectives of Management

- To remove silviculturally available mature and over mature trees.
- To create congenial condition for the establishment of regeneration and conservation of soil and moisture.
- To obtain timber on a sustained basis.
- To supplement natural regeneration by plantation of nursery raised plants.

- To protect these forests for their aesthetic value.

11.4. Silvicultural System Adopted

11.4.1 The forests which are allotted to this working circle will be managed under the Indian Selection System as the system is found suitable for species with a share bearing character. Continuous shade helps in securing the regeneration. Selection cum improvement fellings will be carried out among the trees of exploitable size and above, and only improvement feelings will be carried out in rest of the crop. To create congenial condition for growth and establishment of advance growth, small openings will be created by removing over-wood. In areas where regeneration is absent, conservative removal and avoiding creation of big gaps in the canopy is suggested. Other species such as Spruce, Deodar and Kail falling within the compartments of this working circle will get the same treatment as Fir.

11.5. Exploitable Size

11.5.1 The exploitable size for Fir and Spruce is fixed at 80 cms dbh (ob). The exploitable size for Deodar and Kail is fixed at 70 cms dbh (ob). Keeping in view the overall deficiency of regeneration and higher proportion of mature to over-mature trees in Fir, the exploitable diameter has been raised from 70 cms (technically exploitable size) to 80 cms dbh (ob).

11.6 Rotation

11.6.1 Rotation is of little significance in a Selection system. Trees which are removed at each felling cycle are those which are deemed to have completed their period of maximum growth corresponding to exploitable diameter. However, for the academic purposes, the rotation of 240, 150 and 150 years has been adopted for Fir, Deodar & Kail respectively, corresponding to exploitable diameter of 80 cm dbh (ob) for Fir/Spruce and 70 cms dbh(ob) for Deodar and Kail.

11.7 Felling Cycle

11.7.1A felling cycle of 30 years is adopted which has been found to be convenient, based on the past experience.

11.8 Felling Series

11.8.1There will be only one Felling Series spread over the entire working circle. The territorial Divisional Forest Officer will decide the order of felling.

11.9 Analysis and Valuation of the Crop

11.9.1 The point sampling technique developed by Bitterlich has been adopted for assessment of growing stock. The field data was collected from 61 sample points. Mean value of variables viz., number of stems/Ha, volume of conifers/Ha [30 cm dbh (ob) above] have been computed species and diameter class wise. The results obtained on the basis of statistical analysis are summarized in Table 11.3

11.9.2 The diameter class and species wise distribution of growing stock assessed in terms of total number of trees and volume of conifers 30 cm d.b.h. and above in the commercial area of the working circle (4773 hectares), on the basis of mean values per hectare are summarized in tables 11.4 to 11.9.

Table 11.3 Results of Statistical analysis for Fir Selection Working Circle

Working Circle	Variable (per ha.)	Sample Points (n)	Mean (X)	Variance (S^2)	Standard Deviation (S)	Standard Error (S.E.)	Coefficient of variation (%)	Confidence limits (95%) (X ± t x S.E.)		Confidence Interval (C.I.)	Lower limit as % of mean (%)
								Lower limit	Upper limit		
1	2	3	4	5	6	7	8	9	10	11	12
								t= 2.0002978			
Fir Selection Working Circle	No. of Stems	61	116.07	5477.00	74.01	9.48	63.76	97.12	135.02	37.91	84%
	Volume	61	225.32	3853.10	62.07	7.95	27.55	209.42	241.22	31.80	93%

Column 7: S.E. = S/ square root (n)

Column 8: C.O.V (%) = (S/X) x 100

Column 9: Lower limit = X - 1.96 x S.E.

Column 10: Upper Limit = X + 1.96 x S.E.

Column 11: C.I. = Upper limit - Lower limit

Table 11.4(a) Statement showing species and diameter(cm) class wise tree count of Fir Selection Working Circle

Tree count per hectare (Mean Value).

Spp.	10-20	20-30	30-40	40-50	50-60	60-70	70-80	80-90	90-100	100 <	Grand Total
Deo.	2.70	1.16	3.79	1.92	2.23	2.28	1.49	0.38	0.13	0.03	16.11
Kail	1.77	5.44	3.92	5.16	4.85	1.23	1.21	0.66	0.20	0.08	24.52
Fir	2.34	12.25	14.39	14.62	8.67	6.02	3.36	2.10	1.73	1.56	67.04
Chir	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
B.L.	5.59	1.59	1.02	0.00	0.07	0.00	0.00	0.03	0.11	0.00	8.41
Total	12.40	20.44	23.12	21.70	15.82	9.53	6.06	3.17	2.17	1.67	116.08

Table 11.5 Total tree count over the entire commercial area of Fir Selection Working Circle (Area = 4773 hectares)

Spp.	10-20	20-30	30-40	40-50	50-60	60-70	70-80	80-90	90-100	100 <	Grand Total
Deo.	12887	5537	18090	9164	10644	10882	7112	1814	620	143	76893
Kail	8448	25965	18710	24629	23149	5871	5775	3150	955	382	117034
Fir	11169	58469	68683	69781	41382	28733	16037	10023	8257	7446	319982
Chir	0	0	0	0	0	0	0	0	0	0	0
B.L.	26681	7589	4868	0	334	0	0	143	525	0	40141
Total	59185.20	97560	110352	103574	75509	45487	28924	15130	10357	7971	554050

Table 11.6 Statement showing species and diameter(cm) class wise volume(m^3) of Conifers in Fir Selection Working Circle

Volume of conifers per hectare (Mean Value).

Spp.	10-20	20-30	30-40	40-50	50-60	60-70	70-80	80-90	90-100	100 <	Grand Total
Deo.			2.88	2.55	4.68	7.16	6.55	2.13	0.90	0.25	27.10
Kail			2.98	7.02	11.02	4.11	5.36	3.51	1.21	0.55	35.76
Fir			12.09	22.81	25.76	29.48	23.02	17.42	16.03	15.87	162.48
Chir			0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total			17.95	32.38	41.46	40.75	34.93	23.06	18.14	16.67	225.34

Table 11.7 Total volume of conifers over the entire commercial area of Fir Selection Working Circle (Area = 4773 hectares)

Spp.	10-20	20-30	30-40	40-50	50-60	60-70	70-80	80-90	90-100	100 <	Grand Total
Deo.			13746	12171	22338	34175	31263	10166	4296	1193	129348
Kail			14224	33506	52598	19617	25583	16753	5775	2625	170682
Fir			57706	108872	122952	140708	109874	83146	76511	75748	775517
Chir			0	0	0	0	0	0	0	0	0
Total			85675	154550	197889	194500	166721	110065	86582	79566	1075548

Table 11.8 Distribution of stems and volume (m^3) in Deodar Fir working circle computed at lower confidence interval.

Lower limit

Total tree count of commercial area (4773 ha) at lower interval for Fir Selection Working Circle

84%

Spp.	10-20	20-30	30-40	40-50	50-60	60-70	70-80	80-90	90-100	100 <	Grand Total
Deo.	10825	4651	15195	7698	8941	9141	5974	1524	521	120	64590
Kail	7096	21811	15717	20688	19445	4931	4851	2646	802	321	98309
Fir	9382	49114	57694	58616	34761	24136	13471	8420	6936	6255	268785
Chir	0	0	0	0	0	0	0	0	0	0	0
B.L.	22412	6375	4090	0	281	0	0	120	441	0	33718
Total	49715.57	81951	92695	87002	63427	38209	24296	12710	8700	6696	465402

Lower limit

Table 11.9 Total volume of conifers over the entire commercial area (4773 ha) at lower interval for Fir Selection Working Circle

93%

Spp.	10-20	20-30	30-40	40-50	50-60	60-70	70-80	80-90	90-100	100 <	Grand Total
Deo.			12784	11319	20774	31782	29075	9455	3995	1110	120294
Kail			13228	31161	48917	18244	23792	15581	5371	2441	158735
Fir			53666	101251	114346	130858	102183	77325	71155	70445	721231
Chir			0	0	0	0	0	0	0	0	0
Total			79678	143731	184036	180885	155050	102361	80521	73996	1000259

11.10 Calculation of Yield

11.10.1The yield will be calculated in terms of number of trees and volume, which in turn shall be controlled by area check by working out the size of the annual coupe. Modified Brandis diameter class method and Von Mantle's formula have been applied for calculation of the yield. The following presumptions have been made in this regard:

1. Only commercial area and its growing stock have been taken into account for the purpose of yield calculation.
2. The growing stock over commercial area of this working circle has been fixed in 10 cm diameter classes indicated by Symbols, I, II, III, IV, V & VI. Class I stands for trees above the exploitable diameter and the other successively below it, to the youngest.
3. The number of trees in all those classes being considered for the purposes of yield calculation have been reduced to the lower limit of confidence interval.
4. It takes 135, 115 and 221 years, on an average for trees of Deodar, Kail and Fir respectively to attain exploitable diameter of 70 cm d.b.h. in case of Deodar and Kail, and 80 cm d.b.h. in case of Fir.
5. It takes 25, 24 and 25 years respectively for an average Deodar, Kail and Fir tree to pass from approach class (60-70 cm d.b.h. in the case of Deodar and Kail, 70-80 cm d.b.h. in the case of Fir) to the exploitable class.
6. To account for possible mortality, rot etc., the yield finally arrived at shall be reduced by 50%.
7. The following survival coefficient percent based on the All India volume tables in respects of Deodar, Kail and Fir have been used in yield calculation.

Table 11.10

Diameter-Class d.b.h. (cm)	Survival percentage of species		
	Deodar	Kail	Fir
30-40	30%	45%	20%
40-50	60%	60%	40%
50-60	80%	80%	50%
60-70	90%	90%	60%
70-80	95%	95%	85%
80 & above	-	-	95%

11.10.2 Based on the assumption above, the number of total potentially available trees over the commercial area of this working circle, calculated at lower confidence limit of the mean value, after due deduction on account of mortality, is tabulated under table 11.11 as follows:

Table 11.11 Species and diameter-class wise potential availability of trees from the commercial area of Fir Selection Working Circle

DEODAR

Class	VI	V	IV	III	II	I	Total
Diameter-class	below 30	30-40	40-50	50-60	60-70	above 70	
Total No. of trees assessed at mean value	18424	18090	9164	10644	10882	9689	76893
Total No. of trees assessed at lower limit of confidence interval	15476	15195	7698	8941	9141	8139	64590
Age of entry in the class		57	71	90	110	135	
Years in class transition period		14	19	20	25		
Survival Coefficient of the class		0.30	0.60	0.80	0.90	0.95	
No. of potentially available trees		4559	4619	7153	8227	7732	32289

KAIL

Class	VI	V	IV	III	II	I	Total
Diameter-class	below 30	30-40	40-50	50-60	60-70	above 70	
Total No. of trees assessed at mean value	34413	18710	24629	23149	5871	10262	117034
Total No. of trees assessed at lower limit of confidence interval	28907	15717	20688	19445	4931	8620	98308
Age of entry in the class		42	55	72	91	115	
Years in class transition period		13	17	19	24		
Survival Coefficient of the class		0.45	0.60	0.80	0.90	0.95	
No. of potentially available trees		7073	12413	15556	4438	8189	47668

FIR

Class	VI	V	IV	III	II	I	Total
Diameter-class	30-40	40-50	50-60	60-70	70-80	above 80	
Total No. of trees assessed at mean value	68683	69781	41382	28733	16037	25726	250342
Total No. of trees assessed at lower limit of confidence interval	57694	58616	34761	24136	13471	21610	210288
Age of entry in the class	84	109	136	166	196	221	
Years in class transition period	25	27	30	30	25		
Survival Coefficient of the class	0.20	0.40	0.50	0.60	0.85	0.95	
No. of potentially available trees	11539	23446	17381	14482	11450	20530	98827

11.10.3 The stepwise calculation of yield in Fir Selection Working Circle on the basis of modified Brandis Diameter Class Method is detailed in Table 11.12.

Table 11.12

Yield Calculation for Fir Selection Working Circle using Brandis Diameter-Class Method

		DEODAR	KAIL	FIR
a)	Total number of trees in class I	7732	8189	20530
b)	Total number of trees likely to pass on to class I in the first felling cycle from			
	Class II	8227	4438	11450
	Class III	7153*(5/20)	15556*(6/19)	14482*(5/30)
	=	1788	4912	2414
c)	Total recruitment in class I from class II and III during first felling cycle	10015	9350	13864
d)	Annual recruitment from class II and III during the first felling cycle (c / 30)	334	312	462
e)	Stock required to be kept as reserve i.e. half of the total recruitment in 'c' above	5008	4675	6932
f)	Surplus stock of class I (a - e)	2724	3514	13598
g)	Total possibility of yield in first felling cycle if all surplus stock in f' above is removed in 2 cycles (c +f)	11377	11107	20663
h)	Annual yield (g / 30)	379	370	689

i)	Weighted average volume of trees above exploitable diameter as per Kullu Volume Tables in cubic metres	6.11	5.66	9.30
j)	Total annual volume yield (m^3)	2317	2096	6405
k)	Deduct fifty percent from 'l' above to account for mortality	1159	1048	3203
l)	Rounded off to lower multiple of hundred	1100	1000	3200
	TOTAL	**5300**	**m^3**	

11.12 The Yield Calculated By Von Mantle's Formula

$$\text{Annual Yield} = \frac{2 \times \text{Growing Stock}}{\text{Rotation}}$$

Table No.11.13

Species	**Yield = 2x(Growing Stock)/ Rotation**	**Rounding off to lower hundred**
Deodar	$\frac{2x120294}{150} = 1603m^3$	1600 m^3
Kail	$\frac{2x158735}{150} = 2116m^3$	2100m^3
Fir	$\frac{2x721231}{240} = 6010\ m^3$	6000m^3
Total	**9850 m^3**	**9700 m^3**

Its clear from the above figures that the yield calculated by Brandis Method is quiet conservative and therefore has been prescribed

11.13 Size of Annual Coupe

The size of annual coupe is calculated by formula

$$\text{Annual Coupe (ha)} = \frac{\text{Total commercial area of working circle}}{\text{Felling cycle}} = \frac{4773}{30} = 159$$

11.14 Allowable Annual Cut per Hectare

11.14.1 Given the annual yield and the size of annual coupe, the allowable cut is computed by dividing Annual Yield of the Working Circle with the area of annual Coupe.

$$\text{Annual Cut(ha)} = \frac{\text{Annual Yield}}{\text{Area of Annual Coupe}} = \frac{5300}{159} = 33.33 \text{ m}^3$$

11.14.2 The percentage of Annual Yield with respect to total growing stock (computed at lower confidence limit) is as follows:

$$\frac{\text{Annual Yield x 100}}{\text{Growing Stock}} = \frac{5300 \times 100}{1000259} = 0.52\%$$

11.15 Realization of Yield

11.15.1 All fit trees above 30 cm d.b.h. (ob) marked for whatever purpose will count towards yield. Since the Deodar, Kail and Fir are not present uniformly, so it may not be possible to realize species wise yield. Thus, yield prescribed should be regulated in totality. However, a deviation of $\pm$ 20% from the prescribed yield is permitted.

11.16 Method of Executing Felling

11.16.1 During the Plan period of 10 years, 1/3rd of the total commercial area of the Working Circle is to be worked out. In view of the ban on green felling, the sequence of felling has been left to the direction of the Divisional Forest Officer who shall exercise his judgment to select suitable coupes from all over the Working Circle, keeping in view the progress of regeneration. Removal of over-wood standing above the advance growth and regeneration, with a view to liberate it from shade and suppression will constitute the general guide lines in the execution of felling. In order to avoid the invasion of the area by weeds, which come up abundantly in the gaps, the canopy needs to be manipulated with utmost care. Selection forests require elaborate management and great skill on the part of the executive staff to handle the crop. Accordingly the following marking rules are laid down for guidance of the marking officer.

11.17 Suggestions for Marking Officer and Marking/Felling Rules

11.17.1The marking officer, prior to conducting the marking, must acquaint himself thoroughly with the condition and composition of the crop in the compartment and its boundaries by traversing over the area of the compartment, at least once.

- Marking should be done by the DCF in-charge of the Division or well trained and experienced ACF. Marking should never be conducted by anybody below the rank of a well trained and experienced Range Officer, in such case the DFO/ACF should check at least 25% of these markings.
- No marking, except the removal of dead, dying and diseased trees, shall be done in areas near and around cultivation and *behaks* with in a distance of 100 meters from their periphery.
- No marking except the removal of actually dead, dying and diseased trees, shall be done along nallah banks within a distance of at least 100 meters on either side.
- No healthy trees below the exploitable size shall be marked.

- No attempt shall be made to disturb the process of the succession by giving preference to one species over the others. The selection character of the crop shall be preferred over the area of this working circle and should be maintained by retaining some healthy trees of exploitable size which do not cause any suppression to the crop.
- No marking should be conducted in areas lacking regeneration. No marking should be done on steep and precipitous slopes.
- The over-mature trees should get preference over the relatively younger and healthier ones.
- Improvement and hygienic marking in all age-classes shall be done.
- Marking for improvement felling shall form an integral part of the major marking.
- All dead, dying, dry and diseased trees shall be marked together with malformed and unfit trees.
- All the trees of exploitable size (70 cm d.b.h. in case of Deodar and Kail and 80 cm d.b.h. in case of Fir) standing over adequate advance growth should be removed.
- Advance growth includes all the trees and poles up to exploitable size. Selection markings of light to very light intensity shall be done in areas having inadequate but established regeneration.
- In dense groups of trees, of and above exploitable size, the spacing between the stems to be retained will vary from 5 to 8 meters depending upon the status and amount of regeneration present. Selection felling of moderate intensity shall be carried out in such groups.
- In the mixed crop, ecologically most suitable species to the locally should be favored.
- The intensity of felling, over a particular compartment, will largely

depend upon the degree of biotic interference to which it is subjected, the amount and status of regeneration, topography, slope and aspect.

- Extreme care has to be exercised at the time of felling so *as* not to damage the crop below.
- Trees marked for felling should be lopped before execution of felling.

11.18 Supplementary Markings

11.18.1After completion of fellings under major markings, supplementary markings should be conducted. All trees/poles that have been badly damaged during major fellings should be marked. Preferably, these markings should be conducted by the DFO himself. Judicious discretion of the marking officer is, therefore, needed to ensure that provision of supplementary marking is not misused, and only such trees as are considered definitely unfit for retention, or are not likely to survive in the near future, are marked.

11.19 Subsidiary Silvicultural Operation

11.19.1Villagers should be allowed to take away felling refuse. Left over felling refuse should be control burnt in nallas or depressions.

11.20 Regeneration Measures

11.20.1Poor status of regeneration of Fir is a major problem putting a question mark on the very survival of these forests. No effort should be spared to obtain regeneration of Fir forests. Measures should be taken for encouraging natural and artificial regeneration of Fir. Almost all the locality factors except the biotic factors are favourable for regeneration of conifers. The forests located near human habitation experience adverse biotic interference which hamper the natural regeneration to a large extent. However, the areas where pressure from both human beings and their cattle is less, there is no problem of natural

regeneration. Due to increase in population of domestic animals and excessive grazing, the extent of area requiring artificial regeneration is increasing by every passing year. An area of 159 hectares is proposed for reforestation and rehabilitation every year which is equal to the area of annual coupe.

11.21 Artificial Regeneration (Nursery and Plantation Techniques)

***Abies pindrow (Fir*)**: It is a slow growing specie which requires cool and moist climate. It occurs at an altitude ranging from 2200 to 3300 meters but sometimes extends to 2000 to 3300 meters

Seed: Good seed year normally occur in 6-7 years. Seeds ripen in the month of October-November.

Seed weight: About 2500 seeds weigh one kilogram.

Germination Percent: It normally ranges from 40 to 65. The germination starts after 4-5 months and completes in about one and a half months.

Nursery Technique: Seeds are sown in nursery beds in November-December i.e. before snowfall and the germination starts in April. The seedlings remain in nursery for one and a half years.

Planting Technique: The planting out is usually done during the month of March / April when the snow starts melting. It is done in pits of size 45cm x 45cm x 45cm at a spacing of 2m x 2m and cleaning is to be done twice a year.

11.22 Control of Grazing

11.22.1 It is an admitted fact that unrestricted, uncontrolled and unregulated over-grazing in Fir forest is the main reason for the failure of the regeneration of Fir. These forests are grazed starting from the melting

of snow in spring till the snow falls in winter, by large herds of cattle of nomads as well as local inhabitants. Under prevailing circumstances it is difficult to control and restrict the grazing in these forests. It is therefore, suggested that efforts should be made so that nomads and local people are actively involved in the protection of these forests.

CHAPTER-XII

Working Plan for Chir

Selection Working Circle

CHAPTER-XII

Working Plan for Chir Selection Working Circle

12.1 General Constitution of the Working Circle

12.1.1 The better quality Chir forests of this division which are compact, well stocked, and easily accessible, are allotted to this working circle.These forests occupy the moderate slopes. Chir is the principal species in this working Circle. Small patches of Kail and Deodar are found on the upper reaches of some compartments allotted to this Working Circle. The Working Circle covers the same area of the corresponding Working Circle of the Plan under revision, however, in the present Plan a few compartments i.e. Co. 9/U, Co. 40/U, Co. 41/U , Co. 46/U, Co. 50/U, Co. 51/U and Co. 90/U of Udhampur Range have been shifted to the Rehablitation cum Reboisment Working Circle. The detail of the Compartments allotted to the Fir Selection Working Circle in the Plan under revision and the proposed plan are given in Table 12.1.

Table 12.1

Range	Plan under Revision		Proposed Plan	
	Comptt No.	Area in hectares	Comptt No.	Area in hectares
Dudu	74,78,87b,87c,96,97a,97b ,98,102a,102b,111b.	**9676**	74,78,87b,87c,96,97a,97b ,98,102a,102b,111b	**8845**
Panchari	12,13,14,16,17,18,19,20, 28,34,35,36,47		12,13,14,16,17,18,19,20, 28,34,35,36,47	
Udhampur	6,**9**,11,12b,16,17b,18,19a, 19b,35,36,38a,39,**40**,**41**,4 2a,42b,**46**,49,**50,51**,53c,5 4,55a,55b,56a,57a,60,61, 62,63,67,68,74a,75,76,77, 78,80,81,82,83,84b,85b,8 6a,86b,87a,87b,89,**90**,94, 95a,97.		6,11,12b,16,17b,18,19a,1 9b,35,36,38a,39,42a,42b, 49,53c,54,55a,55b,56a,57 a,60,61,62,63,67,68,74a,7 5,76,77,78,80,81,82,83,8 4b,85b,86a,86b,87a,87b,8 9,94,95a,97.	

12.2 General Character of Vegetation

12.2.1 Chir occurs between 500 to 1700m elevations. The crop is of low quality in areas where soil is shallow and rocky and the crop has been subjected to heavy tapping for a long period. Trees are malformed, crooked and branchy. On easy slopes crop tends to be healthy, more vigorous and better in quality. The bulk of the chir forests are young to middle aged . Chir is the principal species occurring in the entire Udhampur Range, though it is found well distributed in Dudu and Panchari Range as well. Chir forests are well developed between in the low lying areas of the entire Division.Bulk of the crop is middle aged. There is a marked deficiency of over mature trees and in many compartments the crop is young. The number of trees in the lower diameter class has increased significantly. There is a remarkable difference in term of vigor of the Chir crop between the crop growing on deep soils and steep slopes. The trees have been affected badly due to frequent forest fires and heavy resin tapping.

12.2.2 The condition of the regeneration is not satisfactory. Whatever little regeneration exists, it is in the form of advance growth. Fresh regeneration is confined to closed areas. Though there is no problem of regeneration to come up but it is not able to get established due to heavy biotic pressure. Further the failure of regeneration to establish itself is attributed to heavy incidence of grazing as well.

12.2.3 Chir is It is often found associated with many broad leaved species. The proportion of broad leaved species increases both along lower and upper limits of Chir. The chief associates on the lower limits are *Dodonaea viscosa* (Santha), *Carissa opaca* (Carna), *Mallotus philippensis* (Kamila), *Woodfordia fruticosa* (Lhawi), *Euphorbia royleana* (Thohar), *Emblica officinalis* (Aunia), *Acacia modesta* (phulli), *Cassia fistula*

(Amaltas), *Adhatoda vasica* (Branker), *Myrsine africana*, *Berberis lycium* (Kameloo), *Zizyphus jujuba* (Ber), *Rubus ellipticus* and occasional *Pyrus pashia* (Batang). On the upper limits pure Chir crop gradually gives way to admixture of *Lyonia ovalifolia*, *Rhododendron arboreum* and *Quercus leucotrichophora* which in turn gives way to pure Oak forests which are interspersed by few or stray patches of kail and odd fir trees. The bulk of the crop is middle aged and mature trees are very few

12.2.4 The statement showing Compartments allotted to this Working Circle is given in Annexure 1C. The following table shows the Range wise area under different species in this Working Circle.

Table 12.2

(Area In Ha.)

	Commercial					Uncommercial		
Range	**Deo.**	**Kail**	**Fir**	**Chir**	**Total**	**B.L**	**Blank**	**Total**
Dudu	0	15	0	1234	1249	104	80	**1433**
Panchari	23	40	0	1581	1644	406	215	**2265**
Udhampur	0	48	0	4253	4301	53	793	**5147**
TOTAL	**23**	**103**	**0**	**7068**	**7194**	**563**	**1088**	**8845**
	7194					**1651**		

12.3. Special objectives of Management

i. To remove mature and over-mature trees interfering with the establishment of advance growth.

ii. To promote natural regeneration of Chir.

iii. To supplement natural regeneration with artificial restocking by Patch Sowing and planting of poly bagged nursery raised plants of Chir in blanks.

iv. To obtain yield of timber and resin on sustained basis.

12.4 SIlvilcultural system adopted

12.4.1 During the past the Chir forests were managed under Indian Shelter wood compartment system. The major objective was to convert the Chir forest to a regular crop. Keeping in view the primary objective of resin extraction, no fellings were done and in reality no conversion to a uniform crop has taken place.Chir being a strong light demander requires opening for inducing natural regeneration. The status of natural regeneration in Chir forest is not so promising. The forest fires along with the wind storms have caused excessive damage to the standing Chir crop. So, keeping in view the irregularity of the crop and the extent of damage caused to the Chir crop it is not feasible to continue with the Indian Shelter wood Compartment System, so in this Plan period the crop will be managed under the Indian Selection System.

12.5 Exploitable Size

12.5.1 The exploitable size for Chir has been fixed 70 cm. d.b.h. (ob)

12.6 Rotation

12.6.1 A technical rotation of 120 years is fixed for Chir corresponding to an exploitable diameter of 70 cm dbh (ob).

12.7 Felling Cycle

12.7.1 A felling cycle of 30 years is adopted which has been found to be convenient based on past experience

12.8 Felling Series

12.8.1 There will be only one felling series in the working circle

12.9. Regeneration Period

12.9.1 Keeping in view the periodic outbreak of forest fire and heavy incidence of grazing, a safe regeneration period of 30 years is adopted. In actual practice, however, the regeneration period is of no consequence because the system allows felling of only mature and over mature trees to create better growth condition for advance growth.

12.10 Analysis and Valuation of the Crop

12.10.1 The point sampling technique developed by Bitterlich has been adopted for assessment of growing stock. The field data was collected from 88 sample points. Mean value of variables viz., number of stems/Ha, volume of conifers/Ha [30 cm dbh (ob) above] have been computed species and diameter class wise. The results obtained on the basis of statistical analysis are summarized in Table 12.3

12.10.2 The diameter class and species wise distribution of growing stock assessed in terms of total number of trees and volume of conifers 30 cm d.b.h. and above in the commercial area of the working circle (7194 hectares), on the basis of mean values per hectare are summarized in tables 12.4 to 12.9.

Table 12.3 **Results of Statistical analysis for Chir Selection Working Circle**

Working Circle	Variable (per ha.)	Sample Points (n)	Mean (X)	Variance (S^2)	Standard Deviation (S)	Standard Error (S.E.)	Coefficient of variation (%)	Confidence limits (95%) (X ± t x S.E.)		Confidence Interval (C.I.)	Lower limit as % of mean (%)
								Lower limit	Upper limit		
1	2	3	4	5	6	7	8	9	10	11	12
								t= 1.98760824			
Chir Selection Circle WC	No. of Stems	88	195.52	49994.02	223.59	23.84	114.36	148.15	242.89	94.75	76%
	Volume	88	95.07	5526.21	74.34	7.92	78.19	79.32	110.82	31.50	83%

Column7: S.E. = S/ square root (n)

Column8: C.O.V (%) = (S/X) x 100

Column9: Lower limit = X - 1.96 x S.E.

Upper Limit = X + 1.96 x

Column10: S.E.

C.I. = Upper limit - Lower

Column11: limit

Table 12.4 Statement showing species and diameter(cm) class wise tree count of Chir Selection Working Circle

Tree count per hectare (Mean Value).

Spp.	10-20	20-30	30-40	40-50	50-60	60-70	70-80	80-90	90-100	100 <	Grand Total
Deo.	0.00	0.00	0.58	0.49	0.25	0.15	0.02	0.02	0.00	0.00	1.51
Kail	0.00	4.18	1.45	0.66	0.19	0.07	0.00	0.00	0.00	0.00	6.55
Fir	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Chir	54.80	49.51	23.45	13.38	11.72	5.28	2.49	0.82	0.22	0.06	161.73
B.L.	10.68	5.11	3.91	3.10	1.68	1.14	0.11	0.00	0.00	0.00	25.73
Total	65.48	58.80	29.39	17.63	13.84	6.64	2.62	0.84	0.22	0.06	195.52

Table 12.5 Total tree count over the entire commercial area of Chir Selection Working Circle (Area = 7194 hectares)

Spp.	10-20	20-30	30-40	40-50	50-60	60-70	70-80	80-90	90-100	100 <	Grand Total
Deo.	0	0	4173	3525	1799	1079	144	144	0	0	10863
Kail	0	30071	10431	4748	1367	504	0	0	0	0	47121
Fir	0	0	0	0	0	0	0	0	0	0	0
Chir	394231	356175	168699	96256	84314	37984	17913	5899	1583	432	1163486
B.L.	76832	36761	28129	22301	12086	8201	791	0	0	0	185102
Total	471063.12	423007	211432	126830	99565	47768	18848	6043	1583	432	1406571

Table 12.6 Statement showing species and diameter(cm) class wise volume(m^3) of Conifers in Chir Selection Working Circle

Volume of conifers per hectare (Mean Value).

Spp.	10-20	20-30	30-40	40-50	50-60	60-70	70-80	80-90	90-100	100 <	Grand Total
Deo.	-	-	0.44	0.65	0.53	0.46	0.10	0.13	0.00	0.00	2.31
Kail	-	-	1.11	0.90	0.44	0.23	0.00	0.00	0.00	0.00	2.68
Fir	-	-	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Chir	-	-	11.26	15.11	25.89	18.71	12.12	5.07	1.51	0.43	90.10
Total	-	-	12.81	16.66	26.86	19.40	12.22	5.20	1.51	0.43	95.09

Table 12.7Total volume of conifers over the entire commercial area of Chir Selection Working Circle (Area = 7194 hectares)

Spp.	10-20	20-30	30-40	40-50	50-60	60-70	70-80	80-90	90-100	100 <	Grand Total
Deo.	-	-	3165	4676	3813	3309	719	935	0	0	16618
Kail	-	-	7985	6475	3165	1655	0	0	0	0	19280
Fir	-	-	0	0	0	0	0	0	0	0	0
Chir	-	-	81004	108701	186253	134600	87191	36474	10863	3093	648179
Total	-	-	92155	119852	193231	139564	87911	37409	10863	3093	684077

Table 12.8 Distribution of stems and volume (m^3) in Chir working circle computed at lower confidence interval.

Lower limit

Total tree count of commercial area (7194ha) at lower interval for Chir Selection Working Circle 76%

Spp.	10-20	20-30	30-40	40-50	50-60	60-70	70-80	80-90	90-100	100 <	Grand Total
Deo.	0	0	3171	2679	1367	820	109	109	0	0	8256
Kail	0	22854	7928	3609	1039	383	0	0	0	0	35812
Fir	0	0	0	0	0	0	0	0	0	0	0
Chir	299616	270693	128211	73154	64078	28868	13614	4483	1203	328	884249
B.L.	58392	27939	21378	16949	9185	6233	601	0	0	0	140677
Total	358007.97	321485	160688	96391	75669	36304	14325	4593	1203	328	1068994

Lower limit

Table 12.9 Total volume of conifers over the entire commercial area (7194 ha) at lower interval for Chir Selection Working Circle 83%

Spp.	10-20	20-30	30-40	40-50	50-60	60-70	70-80	80-90	90-100	100 <	Grand Total
Deo.	-	-	2627	3881	3165	2747	597	776	0	0	13793
Kail	-	-	6628	5374	2627	1373	0	0	0	0	16002
Fir	-	-	0	0	0	0	0	0	0	0	0
Chir	-	-	67234	90222	154590	111718	72369	30273	9016	2568	537989
Total	-	-	76489	99477	160382	115838	72966	31049	9016	2568	567784

12.11 Calculation of Yield

12.11.1 The yield will be calculated in terms of number of trees and volume, which in turn shall be controlled by area check by working out the size of the annual coupe. Modified Brandis diameter class method and Von Mantle's formula have been applied for calculation of the yield. The following presumptions have been made in this regard:

i. Only commercial area and its growing stocks have been taken into account for the purpose of yield calculation.

ii. The growing stock over commercial area of this working circle has been fixed within 10 cm diameter classes indicated by Symbols, I, II, III, IV, V & VI. Class I stands for trees above the exploitable diameter and the other successively below it, to the youngest.

iii. The number of trees of all those classes being considered for the purposes of yield calculation have been reduced to the lower limit of confidence interval.

iv. It takes about 25 years for an average tree of Chir to pass from approach class (60-70 cm d.b.h.) to exploitable classes.

v. To account for mortality due to natural causes, the yield finally arrived at shall be reduced by 50%.

vi. The following survival coefficient percent based on the All India volume tables in respects of Chir has been used in yield calculation.

Table12.10

Diameter-Class d.b.h. (cm)	Survival percentage of species
	Chir
30-40	35%
40-50	60%
50-60	80%
60-70	90%
70-80	95%

12.11.2 Based on the assumption above, the number of total potentially available trees over the commercial area of this working circle, calculated at lower confidence limit of the mean value, after due deduction on account of mortality, is tabulated under Table12.11.

Table 12.11 Species and diameter-class wise potential availability of trees from the commercial area of Chir WC

CHIR

Class	VI	V	IV	III	II	I	Total
Diameter-class	below 30	30-40	40-50	50-60	60-70	above 70	
Total No. of trees assessed at mean value	750406	168699	96256	84314	37984	25826	1163485
Total No. of trees assessed at lower limit of confidence interval	570309	128211	73154	64078	28868	19628	884248
Age of entry in the class		40	57	74	95	120	
Years in class transition period		17	17	21	25		
Survival Coefficient of the class		0.35	0.60	0.80	0.90	0.95	
No. of potentially available trees		44874	43892	51262	25981	18647	184656
KAIL							
Class	VI	V	IV	III	II	I	Total
Diameter-class	below 30	30-40	40-50	50-60	60-70	above 70	
Total No. of trees assessed at	30071	10431	4748	1367	504	0	47121
mean value							
Total No. of trees assessed at	22854	7928	3609	1039	383	0	35813
lower limit of confidence interval							
Age of entry in the class		42	55	72	91	115	
Years in class transition period		13	17	19	24		
Survival Coefficient of the class		0.45	0.60	0.80	0.90	0.95	

No. of potentially available trees	3568	2165	831	345	0	6909

DEODAR

Class	VI	V	IV	III	II	I	Total
Diameter-class	below 30	30-40	40-50	50-60	60-70	above 70	
Total No. of trees assessed at	0	4173	3525	1799	1079	288	10864
mean value							
Total No. of trees assessed at	0	3171	2679	1367	820	219	8256
lower limit of confidence interval							
Age of entry in the class		57	71	90	110	135	
Years in class transition period		14	19	20	25		
Survival Coefficient of the class		0.30	0.60	0.80	0.90	0.95	
No. of potentially available trees		951	1607	1094	738	208	4598

Table12.12: Yield Calculation for Chir Working Circle using Brandis Diameter-Class Method.

		DEODAR	KAIL	CHIR
a)	Total number of trees in class I	208	0	18647
b)	Total number of trees likely to pass on to class I in the first felling cycle from			
	Class II	738	345	25981
	Class III	1094*(5/20)	831*(6/19)	51262*(5/21)
	=	274	262	12205
c)	Total recruitment in class I from class II and III during first felling cycle	1012	607	38186
d)	Annual recruitment from class II and III during the first felling cycle (c / 30)	34	20	1273
e)	Stock required to be kept as reserve i.e. half of the total recruitment in 'c' above	506	304	19093
f)	Surplus stock of class I (a - e)	-298	-304	-446
g)	Total possibility of yield in first felling cycle if all surplus stock in 'f' above is removed (c + f)	714	304	37740
h)	Annual yield (g / 30)	24	10	1258
i)	Weighted average volume of trees above exploitable diameter as per Kullu Volume Tables in cubic metres	6.11	5.66	6.38
j)	Total annual volume yield (m^3)	145	57	8026
k	Deduct fifty percent from 'l' above to	73	29	4013

) account for mortality

l)	Rounded off to lower multiple of hundred	0	0	4000
	TOTAL	4,000	m^3	

Note: Since, in the case of Deodar and Kail, the surplus stock under 'f' above is negetive, the defecit shall be liquidated in the first felling cycle itself, and hence the yield under 'j' is identical to yield under 'h'.

12.12The Yield Calculated By Von Mantle's Formula

$$\text{Annual Yield} = \frac{2 \times \text{Growing Stock}}{\text{Rotation}}$$

Table No.12.13

Species	**Yield = 2x(Growing Stock)/ Rotation**	**Rounding off to lower hundred**
Deodar	$\frac{2x13793}{150} = 183m^3$	100 m^3
Kail	$\frac{2x16002}{150} = 213m^3$	200m^3
Chir	$\frac{2x537989}{120} = 8966\ m^3$	8900m^3
Total	**9362 m^3**	**9200 m^3**

Its clear from the above figures that the yield calculated by Brandis Method is quiet conservative and therefore has been prescribed

12.13 Size of Annual Coupe

The size of annual coupe is calculated by formula

$$\text{Annual Coupe (ha)} = \frac{\text{Total commercial area of working circle}}{\text{Felling cycle}} = \frac{7194}{30} = 239$$

12.14 Allowable Annual Cut per Hectare

12.14.1 Given the annual yield and the size of annual coupe, the allowable cut is computed by dividing Annual Yield of the Working Circle with the area of annual Coupe.

$$\text{Annual Cut(ha)} = \frac{\text{Annual Yield}}{\text{Area of Annual Coupe}} = \frac{4000}{239} = 16.73 \text{ m}^3$$

12.14.2 The percentage of Annual Yield with respect to total growing stock (computed at lower confidence limit) is as follows:

$$\frac{\text{Annual Yield x 100}}{\text{Growing Stock}} = \frac{4000 \times 100}{567784} = 0.70\%$$

12.15. Realization of Yield

12.15.1 All fit trees above 30 cm d.b.h. (ob) marked for whatever purpose will count towards yield. Since the Deodar, Kail and Fir are not present uniformly, so it may not be possible to realize species wise yield. Thus, yield prescribed should be regulated in totality. However, a deviation of $\pm$ 20% from the prescribed yield is permitted.

12.16. Method of Executing Felling

12.16.1 In this working circle the felling cycle has been fixed for 30 years and period of this plan is 10 years. So, only one third of the total commercial area shall be available for working.

12.17Suggestions for Marking Officer and Marking/Felling Rules

12.17.1The marking officer, prior to conducting the marking, must acquaint himself thoroughly with the condition and composition of the crop in the compartment and its boundaries by traversing over the area of the compartment, at least once.

- Marking should be done by the DCF in-charge of the Division or well trained and experienced ACF. Marking should never be conducted by anybody below the rank of a well trained and experienced Range Officer, in such case the DFO/ACF should check at least 25% of these markings.
- No marking, except the removal of dead, dying and diseased trees, shall be done in areas near and around cultivation and *behaks* with in a distance of 100 meters from their periphery.
- No marking except the removal of actually dead, dying and diseased trees, shall be done along nallah banks within a distance of at least 100 meters on either side.
- No healthy trees below the exploitable size shall be marked.
- No attempt shall be made to disturb the process of the succession by giving preference to one species over the others. The selection character of the crop shall be preferred over the area of this working circle and should be maintained by retaining some healthy trees of exploitable size which do not cause any suppression to the crop.

- No marking should be conducted in areas lacking regeneration. No marking should be done on steep and precipitous slopes.

- The over-mature trees should get preference over the relatively younger and healthier ones.

- Improvement and hygienic marking in all age-classes shall be done.

- Marking for improvement felling shall form an integral part of the major marking.

- All dead, dying, dry and diseased trees shall be marked together with malformed and unfit trees.
- Advance growth includes all the trees and poles up to exploitable size. Selection markings of light to very light intensity shall be done in areas having inadequate but established regeneration.
- In dense groups of trees, of and above exploitable size, the spacing between the stems to be retained will vary from 5 to 8 meters depending upon the status and amount of regeneration present. Selection felling of moderate intensity shall be carried out in such groups.
- In the mixed crop, ecologically most suitable species to the locally should be favored.
- The intensity of felling, over a particular compartment, will largely depend upon the degree of biotic interference to which it is subjected, the amount and status of regeneration, topography, slope and aspect.
- Extreme care has to be exercised at the time of felling so *as* not to damage the crop below.
- Trees marked for felling should be lopped before execution of felling.

12.18 Supplementary Markings

12.18.1 After completion of fellings under major markings, supplementary markings should be conducted. All trees/poles that have been badly damaged during major fellings should be marked. Preferably, these markings should be conducted by the DFO himself. Judicious discretion of the marking officer is, therefore, needed to ensure that provision of supplementary marking is not misused, and only such trees as are considered definitely unfit for retention, or are not likely to survive in the near future, are marked.

12.19 Subsidiary Silvicultural Operations

12.19.1The subsidiary silvicultural operations are most important and an integral part of management of Chir pine forests. The subsidiary silvicultural operations include:

a. **Disposal of Debris:** Chir pine forests are situated on lower elevations and since the human population density is more, mostly the felling refuse is taken off by local inhabitants for their domestic use as fuel wood. However, in some pockets where the habitations are far away, the felling debris should be off at safer places during the safe period of year.

b. **Protection against Fire:** The Chir forests are prone to forest fires though Chir is a fire hardly specie but the young regeneration is affected badly due to forest fires. There are various factors responsible for forest fires such as, hot and dry weather combustible pine needle, oozing out resin and human beings. The forest fire has harmful effects on forest soil, flora as well as fauna of the forests. Though measures adopted are insufficient for preventing forest fires however, following measures are recommended for control of forests fires.

- Fire Lines.
- Control Burning

i. **Fire Lines:** Usually 10 meters wide temporary fire lines are created annually before the onset of summer by cutting bushes grass etc. It is recommended that the traditional paths such as bridle path/ foot paths constructed by department or other paths used by villagers be developed as permanent fire lines by cutting bushes and grasses 2 mt on either side of the paths and periodically removal of pine needle etc. from the path during the peak fire season. This can be done by engaging local labour.

ii. **Control Burning:**

1. It should generally be done during the period starting from December to February (earlier on hotter aspects).

2. The worked out areas should not be control burned until they are thoroughly cleared of slash / debris and felling refuse.
3. Areas, where the felling have been conducted and where the regeneration has already established, should be control burnt at an interval of every two years.
4. The operations of control burning should be started from the top portion of an area, and extended downwards along the slope. Control burning proceeding upwards along the slope is injurious to the crop.
5. In the forests under resin tapping an area up to 1.5 meter radius around each tree under taping is cleared of chips and other inflammable material before control burning.

12.20. Artificial Regeneration (Nursery and Plantation Technique)

12.20.1 In areas where regeneration has failed to come up on its own, artificial measures shall be initiated. Patch sowing of Chir should be carried out where favorable soil-moisture condition exists. In blanks close to habitations planting is to be carried out after fencing the area. An area of 156 hectares is proposed for reforestation and rehabilitation annually which is equal to area of annual coupe.

Nursery and Plantation Technique of *Pinus roxburghii* (Chir):

Occurrence: The Chir grows at an altitude ranging from 500 meters to 2300 meters height. It is light demander species. It is a frost and drought hardy, and fire resistant species.

Seed collection: During March and April.

Seed weight: Approximately 10,000 seeds per kg. Seed can be stored in sealed tins upto 4 years

Germination percentage: more than 70%.

Nursery Technique*:* Dibbling or broad cast sowing of seed is done in shaded nursery beds during March and April. The nursery soil is mixed

with soil collected around large pine trees in the adjoining forests. The nursery is properly watered during summer and seedlings are pricked out during June and July.

Planting Technique: The naked rooted seedlings, when they attain a height of 10-15 cm are transplanted with or without ball of earth at 2m x2m spacing in pits of size 45cm x 45cm x 45cm during monsoon. Young seedlings are damaged by porcupines.

12.21 Control of Grazing

12.21.1 The unrestricted, uncontrolled, unregulated and heavy grazing is responsible for failure of natural regeneration of Chir. Large herds of nomadic as well as local livestock graze in these forests round the year resulting in trampling of young seedlings. The areas which are prone to heavy grazing are prescribed to be effectively closed and artificial regeneration measures such as planting patch sowing of Chir etc. need to be taken up so that the forest can be regenerated.

CHAPTER-XIII

Working Plan for Rehabilitation Cum Reboisement Working Circle

CHAPTER-XIII

Working Plan for Rehablitation Cum Reboisement Working Circle

13.1 General constitution of the Working Circle

13.1.1 This working circle includes all degraded forests of the Division. These areas are mostly near to habitations and bear the brunt of the damage caused by local population and their cattle. These areas continue to be burdened with excessive biotic pressure. A few compartments from the other working Circles of the previous plan have been included in this Working Circle. The compartments shifted to this Working Circle are 9 U , 40 U, 41 U, 46 U, 50 U, 51 U, 90 U, 20 D, 21 D, 22 D, 53 D, 57 D, 59 D and 84 D. The detail of the Compartments allotted to this Working Circle are given in Annexure-1D

13.2 General Character of Vegetation

13.2.1 This Working Circle not only falls in the Chir Pine zone but also includes some areas which fall in the Deodar-Kail and Fir zone. Also the crop is usually scattered, under stocked with a density less than 0.4. The regeneration status is very poor and in some compartments it is almost absent. The maltreatment of the crop in past by way of excessive grazing, browsing, lopping, encroachment etc. have degraded the condition of these forests. The crop is malformed and stunted. Due to repeated lopping and browsing, the saplings have acquired a bushy form. The regeneration has either failed to come up or failed to establish due to excessive and uncontrolled lopping and grazing. The problem of soil erosion is severe in several compartments.

13.2.2 The following table shows the Range wise area under different species in this Working Circle.

Table 13.1

(Area In Ha.)

Range	**Deo.**	**Kail**	**Fir**	**Chir**	**Total**	**B.L**	**Blank**	**Total**
Dudu	331	382	1525	536	2774	1753	970	5497
Panchari	61	475	684	4079	5299	831	1332	7462
Udhampur	0	61	0	4575	4636	498	1602	6736
TOTAL	**392**	**918**	**2209**	**9190**	**12709**	**3082**	**3904**	**19695**

13.3 Object of the Management

1. To rehabilitate and improve the existing forest crop which has been degraded over the years by adopting strict forest protection and improvement measures.
2. To create a multiple product zone so that these forests act as buffer to the well stocked core forests.
3. To ensure Soil and Water Conservation by adopting soil and moisture conservation technique.
4. To involve local inhabitants in protection afforestation as well as and development of these forests.
5. To meet the fuel, fodder and NTFP requirement of the people.

13.4 Analysis and Valuation of the Crop

13.4.1 The point sampling technique developed by Bitterlich has been adopted for assessment of growing stock. For the purpose of analysis of crop the Working Circle was divided into three Sub stratums i.e. Chir substratum, Deodar-Kail-Fir sub stratum and Broad leaved sub stratum. In Chir sub stratum field data was collected from 91 sample points/Plots.For DKF and broad leaved sub stratum the field date was collected from 40 and 30 sample points/Plots respectively. Mean value of variables viz., number of stems/Ha, volume of conifers/Ha [30 cm dbh (ob) above] have been computed species and diameter class wise. The results obtained on the basis of statistical analysis are summarized in Table 13.2 to 13.4.

13.4.2 The diameter class and species wise distribution of growing stock assessed in terms of total number of trees and volume of conifers 30 cm d.b.h. and above in the commercial area of the working circle (i.e.9147 ha. In Chir sub stratum and 3681 Ha. In DKF substratum), on the basis of mean values per hectare are summarized in tables 13.5 to 13.9.

Table 13.2 **Results of Statistical analysis for Rehablitation Cum Reboisement Working Circle (Chir Stratum)**

Working Circle	Variable (per ha.)	Sample Points (n)	Mean (X)	Variance (S^2)	Standard Deviation (S)	Standard Error (S.E.)	Coefficient of variation (%)	Confidence limits (95%) (X ± t x S.E.)		Confidence Interval (C.I.)	Lower limit as % of mean (%)
								Lower limit	Upper limit		
1	2	3	4	5	6	7	8	9	10	11	12
								t = 1.9866745			
Reboisement Circle - Chir	No. of Stems	91	130.75	17839.00	133.56	14.00	102.15	102.93	158.57	55.63	79%
	Volume	91	92.11	5235.40	72.36	7.58	78.55	77.04	107.18	30.14	84%

Table 13.3 **Results of Statistical analysis for Rehablitation Cum Reboisment Working Circle- (DKF Stratum)**

Working Circle	Variable (per ha.)	Sample Points (n)	Mean (X)	Variance (S^2)	Standard Deviation (S)	Standard Error (S.E.)	Coefficient of variation (%)	Confidence limits (95%) (X ± t x S.E.)		Confidence Interval (C.I.)	Lower limit as % of mean (%)
								Lower limit	Upper limit		
1	2	3	4	5	6	7	8	9	10	11	12
								t = 2.0226909			
Reboisment Circle DKF	No. of Stems	40	116.63	12774.00	113.02	17.87	96.91	80.48	152.78	72.29	69%
	Volume	40	152.62	5742.30	75.78	11.98	49.65	128.39	176.85	48.47	84%

Table 13.4 **Results of Statistical analysis for Rehablitation Cum Reboisment Working Circle (Broad leaved Stratum)**

Working Circle	Variable (per ha.)	Sample Points (n)	Mean (X)	Variance (S^2)	Standard Deviation (S)	Standard Error (S.E.)	Coefficient of variation (%)	Confidence limits (95%) (X ± t x S.E.)		Confidence Interval (C.I.)	Lower limit as % of mean (%)
								Lower limit	Upper limit		
1	2	3	4	5	6	7	8	9	10	11	12
								t = 2.03451529			
Reboisment Circle- BL	No. of Stems	34	166.00	6613.00	81.32	13.95	48.99	137.63	194.37	56.75	83%
	Volume (Conifers only)	34	109.10	8403.40	91.67	15.72	84.02	77.11	141.09	63.97	71%

Table 13.5(a)

Statement showing species and diameter(cm) class wise tree count of Reboisement Working Circle- Chir Stratum

Tree count per hectare (Mean Value).

Spp.	10-20	20-30	30-40	40-50	50-60	60-70	70-80	80-90	90-100	100 <	Grand Total
Deo.	0.81	0.98	1.13	0.76	0.41	0.19	0.05	0.00	0.00	0.00	4.33
Kail	1.58	3.74	1.84	1.10	0.57	0.03	0.00	0.04	0.00	0.00	8.90
Fir	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Chir	12.58	21.56	21.51	14.45	12.20	4.51	1.70	0.77	0.14	0.05	89.47
B.L.	16.52	6.67	1.92	1.44	1.38	0.11	0.00	0.00	0.00	0.00	28.04
Total	31.49	32.95	26.40	17.75	14.56	4.84	1.75	0.81	0.14	0.05	130.74

Total tree count over the entire commercial area of Reboisement Working Circle-Chir Stratum (Area = 9190 hectares)

Spp.	10-20	20-30	30-40	40-50	50-60	60-70	70-80	80-90	90-100	100 <	Grand Total
Deo.	7444	9006	10385	6984	3768	1746	460	0	0	0	39793
Kail	14520	34371	16910	10109	5238	276	0	368	0	0	81791
Fir	0	0	0	0	0	0	0	0	0	0	0
Chir	115610	198136	197677	132796	112118	41447	15623	7076	1287	460	822229
B.L.	151819	61297	17645	13234	12682	1011	0	0	0	0	257688
Total	289393.10	302811	242616	163123	133806	44480	16083	7444	1287	460	1201501

Table 13.5 (b) Statement showing species and diameter(cm) class wise volume(m^3) of Conifers in Reboisement Working Circle-Chir Stratum

Volume of conifers per hectare (Mean Value).

Spp.	10-20	20-30	30-40	40-50	50-60	60-70	70-80	80-90	90-100	100 <	Grand Total
Deo.	-	-	0.86	1.01	0.85	0.59	0.24	0.00	0.00	0.00	3.55
Kail	-	-	1.39	1.49	1.30	0.11	0.24	0.00	0.00	0.00	4.53
Fir	-	-	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Chir	-	-	10.32	16.33	26.96	15.95	8.30	4.77	1.00	0.41	84.04
Total	-	-	12.57	18.83	29.11	16.65	8.78	4.77	1.00	0.41	92.12

Total volume of conifers over the entire commercial area of Reboisement Working Circle-Chir Stratum (Area = 9190 hectares)

Spp.	10-20	20-30	30-40	40-50	50-60	60-70	70-80	80-90	90-100	100 <	Grand Total
Deo.	-	-	7903	9282	7812	5422	2206	0	0	0	32625
Kail	-	-	12774	13693	11947	1011	2206	0	0	0	41631
Fir	-	-	0	0	0	0	0	0	0	0	0
Chir	-	-	94841	150073	247762	146581	76277	43836	9190	3768	772328
Total	-	-	115518	173048	267521	153014	80688	43836	9190	3768	846583

Table 13.5 (c)Distribution of stems and volume (m^3) in Reboisement working circle-Chir Stratum computed at lower confidence interval.

Lower limit

Total tree count of commercial area (9190 ha) at lower interval for Reboisement Working Circle-Chir Stratum 79%

Spp.	10-20	20-30	30-40	40-50	50-60	60-70	70-80	80-90	90-100	100 <	Grand Total
Deo.	5881	7115	8204	5518	2977	1379	363	0	0	0	31436
Kail	11471	27153	13359	7986	4138	218	0	290	0	0	64615
Fir	0	0	0	0	0	0	0	0	0	0	0
Chir	91332	156528	156165	104908	88573	32743	12342	5590	1016	363	649561
B.L.	119937	48425	13939	10455	10019	799	0	0	0	0	203573
Total	228620.55	239220	191667	128867	105707	35139	12705	5881	1016	363	949185

Lower Limit

Total volume of conifers over the entire commercial area (9190 ha) at lower interval for Reboisement Working Circle- Chir-Stratum 84%

Spp.	10-20	20-30	30-40	40-50	50-60	60-70	70-80	80-90	90-100	100 <	Grand Total
Deo.	-	-	6639	7797	6562	4555	1853	0	0	0	27405
Kail	-	-	10730	11502	10035	849	1853	0	0	0	34970
Fir	-	-	0	0	0	0	0	0	0	0	0
Chir	-	-	79666	126061	208120	123128	64073	36822	7720	3165	648755
Total	-	-	97035	145360	224718	128531	67778	36822	7720	3165	711130

Table 13.6(a)Statement showing species and diameter(cm) class wise tree count of Reboisement Working Circle- DKF Stratum

Tree count per hectare (Mean Value).

Spp.	10-20	20-30	30-40	40-50	50-60	60-70	70-80	80-90	90-100	100 <	Grand Total
Deo.	0.00	0.50	1.43	2.43	2.80	1.98	0.50	0.20	0.05	0.03	9.92
Kail	0.00	13.90	6.33	5.13	3.70	2.18	1.73	0.35	0.08	0.00	33.40
Fir	2.05	10.40	8.08	6.75	8.13	4.40	2.83	1.05	0.20	0.15	44.04
Chir	0.00	0.00	0.00	0.00	0.23	0.00	0.00	0.00	0.00	0.00	0.23
B.L.	13.25	6.73	5.30	1.20	1.38	0.25	0.00	0.50	0.25	0.25	29.11
Total	15.30	31.53	21.14	15.51	16.24	8.81	5.06	2.10	0.58	0.43	116.70

Total tree count over the entire commercial area of Reboisement Working Circle- DKF Stratum (Area = 3519 hectares)

Spp.	10-20	20-30	30-40	40-50	50-60	60-70	70-80	80-90	90-100	100 <	Grand Total
Deo.	0	1760	5032	8551	9853	6968	1760	704	176	106	34908
Kail	0	48914	22275	18052	13020	7671	6088	1232	282	0	117535
Fir	7214	36598	28434	23753	28609	15484	9959	3695	704	528	154977
Chir	0	0	0	0	809	0	0	0	0	0	809
B.L.	46627	23683	18651	4223	4856	880	0	1760	880	880	102438
Total	53840.70	110954	74392	54580	57149	31002	17806	7390	2041	1513	410667

Table 13.6(b) Statement showing species and diameter(cm) class wise volume(m^3) of Conifers in Reboisement Working Circle- DKF Stratum

Volume of conifers per hectare (Mean Value).

Spp.	10-20	20-30	30-40	40-50	50-60	60-70	70-80	80-90	90-100	100 <	Grand Total
Deo.	-	-	1.08	3.23	5.88	6.20	2.20	1.13	0.34	0.19	20.25
Kail	-	-	4.81	6.97	8.40	7.26	7.62	1.87	0.46	0.00	37.39
Fir	-	-	6.78	10.53	24.13	21.56	19.35	8.72	1.88	1.53	94.48
Chir	-	-	0.00	0.00	0.50	0.00	0.00	0.00	0.00	0.00	0.50
Total	-	-	12.67	20.73	38.91	35.02	29.17	11.72	2.68	1.72	152.62

Total volume of conifers over the entire commercial area of Reboisement Working Circle- DKF Stratum

(Area = 3519 hectares)

Spp.	10-20	20-30	30-40	40-50	50-60	60-70	70-80	80-90	90-100	100 <	Grand Total
Deo.	-	-	3801	11366	20692	21818	7742	3976	1196	669	71260
Kail	-	-	16926	24527	29560	25548	26815	6581	1619	0	131575
Fir	-	-	23859	37055	84913	75870	68093	30686	6616	5384	332475
Chir	-	-	0	0	1760	0	0	0	0	0	1760
Total	-	-	44586	72949	136924	123235	102649	41243	9431	6053	537070

Table 13.6(c) Distribution of stems and volume (m^3) in Reboisement Working Circle- DKF Stratum computed at lower confidence interval.

Lower limit

Total tree count of commercial area (3519 ha) at lower interval for Ecological Conservation Working Circle 69%

Spp.	10-20	20-30	30-40	40-50	50-60	60-70	70-80	80-90	90-100	100 <	Grand Total
Deo.	0	1214	3472	5900	6799	4808	1214	486	121	73	24087
Kail	0	33751	15370	12456	8984	5293	4201	850	194	0	81099
Fir	4978	25252	19619	16390	19741	10684	6872	2550	486	364	106934
Chir	0	0	0	0	558	0	0	0	0	0	558
B.L.	32172	16341	12869	2914	3351	607	0	1214	607	607	70682
Total	37150.08	76558	51330	37660	39433	21392	12286	5099	1408	1044	283360

Total volume of conifers over the entire commercial area (3519 ha) at lower interval for Reboisement Working Circle- DKF Stratum Lower Limit 84%

Spp.	10-20	20-30	30-40	40-50	50-60	60-70	70-80	80-90	90-100	100 <	Grand Total
Deo.	-	-	3192	9548	17381	18327	6503	3340	1005	562	59858
Kail	-	-	14218	20603	24830	21460	22524	5528	1360	0	110523
Fir	-	-	20041	31126	71327	63730	57198	25776	5557	4523	279279
Chir	-	-	0	0	1478	0	0	0	0	0	1478
Total	-	-	37452	61277	115016	103518	86225	34644	7922	5084	451139

Table 13.7(a)

Statement showing species and diameter(cm) class wise tree count of Reboisement Working Circle- Broad Leaved Stratum

Tree count per hectare (Mean Value).

Spp.	10-20	20-30	30-40	40-50	50-60	60-70	70-80	80-90	90-100	100 <	Grand Total
Deo.	1.68	1.00	0.82	2.15	0.65	0.38	0.00	0.00	0.00	0.00	6.68
Kail	4.56	5.59	7.76	12.47	3.35	4.44	1.47	0.41	0.00	0.00	40.05
Fir	0.00	0.00	0.41	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.41
Chir	2.41	4.85	10.26	10.82	5.65	3.47	0.79	0.47	0.00	0.00	38.72
B.L.	33.53	28.32	10.71	4.44	1.47	1.21	0.15	0.00	0.29	0.00	80.12
Total	42.18	39.76	29.96	29.88	11.12	9.50	2.41	0.88	0.29	0.00	165.98

Total tree count over the entire area of Reboisement Working Circle- BLStratum

Area = 3082 hectares

Spp.	10-20	20-30	30-40	40-50	50-60	60-70	70-80	80-90	90-100	100 <	Grand Total
Deo.	5178	3082	2527	6626	2003	1171	0	0	0	0	20588
Kail	14054	17228	23916	38433	10325	13684	4531	1264	0	0	123434
Fir	0	0	1264	0	0	0	0	0	0	0	1264
Chir	7428	14948	31621	33347	17413	10695	2435	1449	0	0	119335
B.L.	103339	116055	43890	18195	6024	4959	615	0	1188	0	294265
Total	129998.76	151313	103218	96601	35765	30508	7580	2712	1188	0	558886

Table 13.7(b) Statement showing species and diameter(cm) class wise volume(m^3) of Conifers in Reboisement Working Circle- BL Stratum

Volume of conifers per hectare (Mean Value).

Spp.	10-20	20-30	30-40	40-50	50-60	60-70	70-80	80-90	90-100	100 <	Grand Total
Deo.	-	-	0.63	2.86	1.36	1.20	0.00	0.00	0.00	0.00	6.05
Kail	-	-	5.90	16.96	7.61	14.83	6.50	2.20	0.00	0.00	54.00
Fir	-	-	0.35	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.35
Chir	-	-	4.93	12.23	12.48	12.29	3.87	2.92	0.00	0.00	48.72
Total	-	-	11.81	32.05	21.45	28.32	10.37	5.12	0.00	0.00	109.12

Total volume of conifers over the entire commercial area of Reboisement Working Circle- BL Stratum (Area = 3082 hectares)

Spp.	10-20	20-30	30-40	40-50	50-60	60-70	70-80	80-90	90-100	100 <	Grand Total
Deo.	-	-	1942	8815	4192	3698	0	0	0	0	18646
Kail	-	-	18184	52271	23454	45706	20033	6780	0	0	166428
Fir	-	-	1079	0	0	0	0	0	0	0	1079
Chir	-	-	15194	37693	38463	37878	11927	8999	0	0	150155
Total	-	-	36398	98778	66109	87282	31960	15780	0	0	336308

Table 13.7(c) Distribution of stems and volume (m^3) in Broad Leafed working circle computed at lower confidence interval.

Total tree count of commercial and broad leaf area at lower interval for Broad Leafed Working Circle

Lower limit 83%

Spp.	10-20	20-30	30-40	40-50	50-60	60-70	70-80	80-90	90-100	100 <	Grand Total
Deo.	4298	2558	2098	5500	1663	972	0	0	0	0	17088
Kail	11665	14300	19851	31899	8570	11358	3760	1049	0	0	102450
Fir	0	0	1049	0	0	0	0	0	0	0	1049
Chir	6165	12407	26246	27678	14453	8876	2021	1202	0	0	99048
B.L.	85772	96326	36428	15102	5000	4116	510	0	986	0	244240
Total	107898.97	125590	85671	80179	29685	25322	6291	2251	986	0	463875

Total volume of conifers over the entire commercial area (3082 ha) at lower interval for Broad Leafed Working Circle

Lower Limit 71%

Spp.	10-20	20-30	30-40	40-50	50-60	60-70	70-80	80-90	90-100	100 <	Grand Total
Deo.	-	-	1379	6258	2976	2626	0	0	0	0	13239
Kail	-	-	12910	37112	16652	32451	14223	4814	0	0	118164
Fir	-	-	766	0	0	0	0	0	0	0	766
Chir	-	-	10788	26762	27309	26893	8468	6390	0	0	106610
Total	-	-	25843	70132	46937	61970	22692	11204	0	0	238779

13.5 Method of Treatment Prescribed

13.5.1 The forests within the area of this working circle have been degraded to such extent that its natural rehabilitation is very difficult (as all the locality factors of these forests are unfavorable for natural regeneration), so in order to bring these forests back to their old glory, the following measures are prescribed.

1. Establishment of closures in consultation with the local inhabitants.
2. Planting of fast growing, small timber and fodder yielding, trees species which will boost the socio-economic condition of local inhabitants.
3. Planting and Patch sowing of principal species after 2-3 years i.e. Deodar / Kail / Fir / Chir.
4. Planting of grass slips/ patch sowing of grass seed having good fodder value, high milk yielding capacity and a good soil binding quality.
5. Soil and moisture conservation works such as construction of water harvesting structures, Dry Rubble Stone Masonry (DRSM) check / retaining walls and mesh wire crates.
6. A time bound treatment of this working circle is required to be adopted otherwise further degradation will take place and a stage will come when the entire tract shall become barren which will be followed by slips and landslides.
7. Highly degraded sites may be planted with water hardly and drought resistant species.

13.5.2 For specific treatment degraded forest areas have been classified as follows:

1. Area bearing Chir crop of low density or Chir mixed with Broad Leaved species.

2. Area bearing oak crop of low crop density or potential Oak forest with mixture of broad leaved species.
3. Area bearing Scrub and which are devoid of any tree cover.
4. Areas bearing Fir crop of low density.

1. Area bearing Chir crop

These areas are basically potential Chir areas which have become degraded or which are under various stages of degradation. The main factors responsible for their present conditions are the forest fires, failure of natural regeneration excessive biotic interference leading to damage through illicit felling/lopping for timber, firewood and grazing/browsing by the cattle. The treatment proposed is closure of areas followed by artificial regeneration coupled with necessary soil and water conservation measures. Artificial regeneration activity should involve both patches sowing and planting of nursery raised plants. Different plantation models can be adopted depending on the terrain, slope aspect moisture availability and condition of soil. Trench planting should be preference as compared to it planting on hilly slopes. Water harvestings devices should be provided in various plantation models areas where there is deficiency of water.

2. Area bearing Oak crop

These are basically the potential Oak areas which have been heavily exploited in the past for fuel and fodder by the villagers. The areas which are close to habitation are the worst hit and bear a pruned heavily lopped and stunted crop. They occupy moist and shady areas i.e. (along nallas) as compared to Chir which prefers more open area. As such they are vital for water conservation and for maintaining a regular flow of water in streams and springs in the track. These area can be improved by protecting them and by resorting to artificial regeneration through

sowing and planting further, since the ban oak is good coppicer shoots should be singled out and allow to grow in to a healthy and vigorous Oak crop. Suitable soil and water conservation measures and Minor Engineering Works should be coupled with the planting activity. Areas bearing low density crop of Broad Leaved species other than Oak. This area occurs towards the lower limits of the zone of distribution of Chir. These areas have been over exploited in the past for firewood and to meet the requirements of local concessionists for their agricultural implements etc. there is need to improve the crop composition of these forests by increasing the percentage of more valuable broad leaved species like Khair, Baheda, Reed, Jamun and sapindus and also the fast growing species like Bamboo, Poplars, Sissoo etc. These species should be raised increasingly in the nurseries and planted in such forest areas.

3. Areas bearing scrub forests

These are the most difficult areas needing treatment on a priority basis. Silvi-pastoral model shall be applied in these areas. Good quality grasses shall be raised. As these areas are prone to severe soil erosion, intensive soil and moisture conservation technique shall be adopted. 30cm deep continuous / staggered V shaped ditch cum bunds shall be made along the contour at 5 cm spacing. In the ditch trees species shall be planted and sowing of seeds of shrub species shall be carried out on bunds at a space of 50 cm. Grass seeds shall be sown in between in continuous contour furrows one meter apart. Grass species like Napier, Dinanath, Sataria, Stylosenthies hamata etc. shall be planted. The forest area falling in this category should be developed as a fodder bank with the special objective of meeting the requirement of nomadic grazers' as well.

4. Area bearing degraded forests of Fir

The crop of Fir forests is constituted mainly of trees of mature and over mature age classes and there is a marked absence of trees of younger age classes and regeneration. Factors responsible for failure of natural

regeneration of Fir and the method of treatment to overcome it are summarized as under:

1. Pasture lands capping fir forests attract a large number of migratory nomads, as well as local livestock during summer months. Fir forest adjoining these pastures also fall victim to heavy grazing. To reduce grazing within acceptable limit it is essential to introduce rotational grazing and introduction of stall feeding.
2. Excessive growth of herbs and shrubs is also responsible for inadequate regeneration of Fir. The shrub growth should be cut in order to allow regeneration to establish.
3. Failure of regeneration of Fir is also attributed to un-decomposed acidic humus, it should be raked before seeding and sowing. Planting of broad leaved species like poplars reduces the acidity of soil and makes the soil conditions favorable for establishment of Fir seedlings.
4. Infrequent good seed years are also partly responsible for failure of regeneration. The problem can be overcome by establishing seed orchards.
5. Removal of debris and collection and disposal of slash should be carried out in felled areas to help regeneration to come up. The follow up of culture operation in felled over areas have been neglected altogether in past.

In the absence of proper cultural operations, regeneration of Fir has been inadequate. In areas where regeneration of Fir has failed to come up naturally, it should be restocked by artificial methods. Spruce should be preferred to Fir on exposed sites plantation of Popular along with Fir will also help in improving the soil conditions.

13.6 Artificial Regeneration of Fir

13.6.1 The Fir forests are facing a serious problem of regeneration and have failed to attract the attention needed despite occupying a substantial

portion of the total area of the Division. No efforts have been have been made to promote the natural or artificial regeneration of Fir. No Fir nursery exists in the Division at present. The Nursery technique of Fir, as practiced in Himachal Pradesh id being described as under:-

- The nursery should be located in the natural zone of this species. Southern aspect, exposed ridges, steep slopes, natural blanks and badly drained pockets should be avoided while selecting the nursery site. The soil should be deep, fertile, well drained and loamy.
- The nursery site should be terraced. Care should be taken, while terracing, so that the top soil is spread over the whole nursery bed uniformly. The nursery beds should be alternated by drainage channels to ensure proper drainage. Nursery beds of size 2m × 1m are prepared on the terraces. The beds should be ready by October. Humus collected from nearby Fir forests should be added to enrich the soil.
- Seed should be collected from healthy middle aged trees. Cones are collected in the month of October. The cones should be dried in sun and after they have opened, the seed is separated by winnowing. 60-70 cones give about 1 kg of seeds.
- The sowing is done in lines about 8 cms apart. About 4 ounces of seed is sown per bed. Dense sowing should be avoided. Seeds sown deeper than 1.5 cm fail to germinate. Seed sowing should be done in November/ December. Germination takes place in the month of April.
- Weeding should be regularly done during the growth period i.e April to July. Tall weeds should be removed before the start of winter season because such weeds may cover and kill the seedlings when the ground is covered with snow.
- Pricking the seedlings ensures fibrous root development. Plants with fibrous root stand transplantation better than the plants with long tap root.. Pricking of seedlings at the age of about 1 and a half years from the date of sowing has been adopted as a standard practice. Pricking during July is found to give best results. At the time of pricking seedlings with shoot-root ratio less than 1:1:5 should be rejected.
- Seedlings which have strong leader should be given preference over the seedlings which have a cluster of buds at the growing tip and poor

leader. Four and a half year old plants of average height not less than 15 cms should be selected for planting.

- Planting in the month of July is found to give the best results.
- Pit digging should be started in April after the snow melts. Bushes wherever occurring in thickets should be cut and burnt along with the felling debris.
- Plantation of seedlings at a spacing of 3m × 3m in pits of size 45 cm × 45 cm × 45 cm is recommended. Spade planting should be tried on experimental basis.
- Weeding should be done in June and October each year. One weeding in first year, two weedings each during second and third years and one weeding during each of fourth and fifth years are necessary.
- On an average 20% and 10% of plants are required to be replaced during beating up operation in first and second year.

13.7. Afforestation Measures

13.7.1 If the degraded forests are to be rehabilitated-reboised within a period of 30 years it implies that out of a total area of 19695 Hactares, an area of 656 Ha. is to be treated. However keeping in view the present level of funding a modest target of 500 Ha/annum is recommended to be taken up for reforestation.

13.7.2 Planning process should involve all agencies associated with rural development and local communities. All sister organizations like MFP Project, Social Forestry Project, Agrostology wing and Directorate of Soil Conservation should be involved in the rehabilitation of degraded forests and they should work in tandem, in the selected micro-water sheds to improve the ecology of the tract and Socio-economic conditions of the people. The nursery and plantation techniques have been discussed in Plantation Working Circle.

CHAPTER-XIV

Working Plan for Eco-Tourism

Working Circle

CHAPTER-XIV

Working Plan for Eco-Tourism Working Circle

14.1 General constitution And Character of Vegetation

14.1.1 This working Circle includes the areas located around famous hill resorts of Patnitop, Kud, Mantalai and Panchari. It includes the compartment no. 91,93,94,95 and 110a of Dudu range and compartment no. 15 of Panchari Range. The working circle is identical in constitution to the corresponding working circle of the Plan under revision, except that the name has been changed from Aesthetic working Circle to Eco-Tourism Working Circle. The Forests consist mainly of Deodar and Kail and since these forests are close to the habitation, the condition of regeneration is not satisfactory. The forests are subject to excessive and uncontrolled grazing pressure of local as well as migratory live stock. The detail of area of the Compartments allotted to this Working Circle are given in Annexure-1E

14.1.2 The following table shows the Range wise area under different species in this Working Circle.

Table 14.1

(Area In Ha.)

	Commercial					Un commercial		
Range	**Deo.**	**Kail**	**Fir**	**Chir**	**Total**	**B.L**	**Blank**	**Total**
Dudu	359	44	0	22	425	0	149	**574**
Panchari	41	0	0	0	41	0	12	**53**
TOTAL	**400**	**44**	**0**	**22**	**466**	**0**	**161**	**627**
	466					**161**		

14.2 Hill Stations Of The Division

14.2.1**Patnitop-Kud: -** Patnitop is a famous hill resort of Jammu province situated on NH-1A, 112 Kms away from Jammu. Situated on a plateau in Shiwalik belt of the Himalayas, Patnitop sits at an altitude of 2024 m (6,640 ft) .The River Chenab flows in close proximity to this location. The town of Kud and Batote are nearby. Kud is a very small town where sweets shops are very famous all over. The aesthetic beauty of Patnitop and the adjoining places attract a large number of tourists. To cater to the demands of the tourists the department of Tourism has constructed many huts. In addition to this, a few private hotels have come up in and around these forests. To exploit the tourism potential of the area the J&K Government constituted the Patnitop Development Authority (PDA) in the year 1990.Many eco-restoration works in the area have been done in collaboration with the PDA.

14.2.2**Mantalai** :-The place is famous for Aparna Ashram which is situated on Chenana-Lti road, 29 kms from Chenani. The Ashram was constructed by Late Sh. Dhirendra Bramchari, the founder president of Aparna Ashram after encroaching upon a bog chunk of forest land in Co. 100a/ Dudu. After his death, the J&K Government has taken over the Ashram and entrusted the management responsibility to Vaishno Devi Shrine Board. On the way to Mantalai from Chenani, Gori Kund and Sudh Mahadev are important religious tourist places. The tourism potential of these places largely remained untapped.

14.2.3**Panchari** :-Panchari town is situated 39 kms away from Udhampur, in the center of Painthal catchment. The town provides a panoramic view of the entire valley. The Co. 15/P which is located near Panchari town is blessed with a beautiful patch of Deodar, adding to the natural beauty of the town.

14.2.4In addition to the above mentioned hill stations, there are many other places such as Nathatop, Sonkpal and Ajjal in Panchari Range and Kandatop (Co. 19 D) and Seoj in Dudu Range which have immense tourism potential but due to lack of adequate infrastructure and publicity, the tourism potential of these places, have remained untapped.

14.3 Objects of Management

a. To protect and develop these forests for aesthetic purpose i.e. To preserve and enhance the sylvan splendor of the Hill resorts from tourist attraction point of view

b. To develop infrastructure for the tourists and devotees and to involve and motivate the local communities to work in collaboration with the Forest department, so as to ensure an ecologically sustainable tourism.

c. To enhance wilderness protection and wildlife conservation, while providing livelihood to a large number of people living around natural ecosystem.

14.4 Evaluation of Growing Stock

14.4.1 Point sampling technique has been adopted for assessment of growing stock. The field data was collected from 7 sample points. Mean value of variables viz. number of stems, volume of conifers 30 cm d.b.h. (ob) per hectare have been computed species wise and diameter class wise. The results obtained on the basis of statistical analysis are summarized in Table 14.2.

14.4.2 The diameter class and species wise distribution of growing stock assessed in terms of total number of trees and volume of conifers 30 cm d.b.h. and above in the commercial area of the working circle (466 hectares), on the basis of mean values per hectare are summarized in tables 14.3 to 14.8.

Table 14.2. Results of Statistical analysis for Eco- Tourism Working Circle

Working Circle	Variable (per ha.)	Sample Points (n)	Mean (X)	Variance (S^2)	Standard Deviation (S)	Standard Error (S.E.)	Coefficient of variation (%)	Confidence limits (95%) (X ± t x S.E.)		Confidence Interval (C.I.)	Lower limit as % of mean (%)
								Lower limit	Upper limit		
1	2	3	4	5	6	7	8	9	10	11	12
								t = 2.44691185			
Eco-Tourism Working	No. of Stems	7	172.00	6605.33	81.27	30.72	47.25	96.83	247.17	150.33	56%
	Volume	7	160.44	2841.34	53.30	20.15	33.22	111.14	209.74	98.60	69%

Table 14.3 Statement showing species and diameter(cm) class wise tree count of Eco-Tourism Working Circle

Tree count per hectare (Mean Value).

Spp.	10-20	20-30	30-40	40-50	50-60	60-70	70-80	80-90	90-100	100 <	Grand Total
Deo.	17.29	14.00	23.57	32.71	13.14	6.57	2.00	0.57	0.86	0.57	111.28
Kail	45.71	4.57	1.43	2.29	1.29	3.43	1.29	0.29	0.14	0.29	60.73
Fir	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Chir	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
B.L.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	**63.00**	**18.57**	**25.00**	**35.00**	**14.43**	**10.00**	**3.29**	**0.86**	**1.00**	**0.86**	**172.01**

Table 14.4 Total tree count over the entire commercial area of Ecological Tourism Working Circle (Area = 466 hectares)

Spp.	10-20	20-30	30-40	40-50	50-60	60-70	70-80	80-90	90-100	100 <	Grand Total
Deo.	8057	6524	10984	15243	6123	3062	932	266	401	266	51856
Kail	21301	2130	666	1067	601	1598	601	135	65	135	28300
Fir	0.00	0	0	0	0	0	0	0	0	0	0
Chir	0.00	0	0	0	0	0	0	0	0	0	0
B.L.	0.00	0	0	0	0	0	0	0	0	0	0
Total	**29358**	**8654**	**11650**	**16310**	**6724**	**4660**	**1533**	**401**	**466**	**401**	**80157**

Table 14.5 Statement showing species and diameter(cm) class wise volume(m^3) of Conifers in Eco-Tourism Working Circle

Volume of conifers per hectare (Mean Value).

Spp.	10-20	20-30	30-40	40-50	50-60	60-70	70-80	80-90	90-100	100 <	Grand Total
Deo.	-	-	17.91	43.51	27.60	20.63	8.78	3.23	5.87	4.32	131.85
Kail	-	-	1.09	3.11	2.92	11.45	5.68	1.53	0.88	1.93	28.59
Fir	-	-	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Chir	-	-	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	**-**	**-**	**19.00**	**46.62**	**30.52**	**32.08**	**14.46**	**4.76**	**6.75**	**6.25**	**160.44**

Table 14.6Total volume of conifers over the entire commercial area of Eco-Tourism Working Circle (Area = 466 hectares)

Spp.	10-20	20-30	30-40	40-50	50-60	60-70	70-80	80-90	90-100	100 <	Grand Total
Deo.	-	-	8346	20276	12862	9614	4091	1505	2735	2013	61442
Kail	-	-	508	1449	1361	5336	2647	713	410	899	13323
Fir	-	-	0	0	0	0	0	0	0	0	0
Chir	-	-	0	0	0	0	0	0	0	0	0
Total	**-**	**-**	**8854**	**21725**	**14222**	**14949**	**6738**	**2218**	**3146**	**2913**	**74765**

Table 14.7 Distribution of stems and volume (m ^{3}) in Eco-Tourism working circle computed at lower confidence interval.

Lower limit

Total tree count of commercial area (466 ha) at lower interval for Eco- Tourism Working Circle 56%

Spp.	10-20	20-30	30-40	40-50	50-60	60-70	70-80	80-90	90-100	100 <	Grand Total
Deo.	4512	3653	6151	8536	3429	1715	522	149	224	149	29040
Kail	11928	1193	373	598	337	895	337	76	37	76	15848
Fir	-	0	0	0	0	0	0	0	0	0	0
Chir	-	0	0	0	0	0	0	0	0	0	0
B.L.	-	0	0	0	0	0	0	0	0	0	0
Total	**16440**	**4846**	**6524**	**9134**	**3766**	**2610**	**859**	**224**	**261**	**224**	**44888**

Lower limit

Table 14.8 Total volume of conifers over the entire commercial area (466 ha) at lower interval for Eco-Tourism Working Circle 69%

Spp.	10-20	20-30	30-40	40-50	50-60	60-70	70-80	80-90	90-100	100 <	Grand Total
Deo.	-	-	5759	13990	8875	6633	2823	1039	1887	1389	42395
Kail	-	-	350	1000	939	3682	1826	492	283	621	9193
Fir	-	-	0	0	0	0	0	0	0	0	0
Chir	-	-	0	0	0	0	0	0	0	0	0
Total	**-**	**-**	**6109**	**14990**	**9813**	**10315**	**4649**	**1531**	**2170**	**2010**	**51588**

14.5 Method Of Treatment

14.5.1 The following measures need to be taken in order to preserve the health , scenic beauty and natural attributes of the eco-tourism sites of the Division:-

- Artificial regeneration of Deodar and Kail in the compartments of this Working Circle should be taken up wherever required.
- Seed sowing and plantation of Deodar and Kail should be taken up in those closures where there is a deficiency of trees. Medicinal plants and grasses of temperate region should be planted in addition to tree species to enrich the ground.
- Fresh demarcation should be carried out in all the compartments of this Working Circle and the areas should be closed with chain linked fending in order to protect these areas from encroachment.
- The staff strength needs to be increased and several huts should be constructed in compartments to ensure the presence of staff.
- Local communities should be motivated to be a part of the Eco-Tourism activities.
- In order to promote tourism a network of trekking routes criss -crossing the compartments should be constructed. In addition to this, view points, cafeteria picnic pavilions & a few huts need to be constructed for the tourists as well.
- Look out points and observation towers should be constructed at suitable places for providing a commanding view of the landscape.
- Plantation of ornamental species like Chinar, Cupressus, Rhododendron, Willow, Lagerstroemia etc should be taken up along the trekking routes, inspection paths and roads. Wooden benches should be provided at certain places for relaxation.
- Somewhere along the Patnitop- Sanasar road a high altitude zoological park should be developed. In addition to enhancing the tourist attraction of the place, I will serve the purpose of breeding a breeding centre for temperate zone wild animals. Surplus animals from this centre will be used for restocking the depleted fauna of Sudh Mahadev Game Reserve.

- The tourism department should be advised to take corrective measures for the safe disposal of waste materials from the huts adjoining these forests.
- Since the forests of Patnitop lie on the migratory route of Bakerwals, these forests are subjected to excessive grazing pressure, resulting into failure of regeneration. Since the issue is very delicate , it requires tactful handling. Construction of halting places, silage go downs and fodder banks are some of the options which should be explored by the territorial DFO.
- Social Forestry Division should be encouraged to raise fodder trees on Government and private waste lands around Patnitop.
- No efforts have been made to exploiat the tourism potential of Mantalai and Panchari. Adequate tourism infrastructure including roads should be constructed and due publicity be given to tap the tourism potential of these places
- Nailing of hanging of advertisement boards should be strictly prohibited
- A medicinal herbal garden should be established in Patnitop and Panchari

- Efforts should be made to carry out the marking of all such trees which are dry/fallen, leaning and diseased. The presence of these malformed or diseased trees poses a threat to the aesthetic beauty of these areas.

- The trees should be removed in a phased manner with due consideration to be given to the local concessionists so as to meet their bona fide requirements.

- The extraction of the above mentioned trees should be carried out by the experienced staff. Proper care should be taken so that the new regeneration on the forests floor is least affected. The blanks left should be artificially regenerated as early as possible to retain the aesthetic beauty of these areas.

CHAPTER-XV

Working Plan for Wildlife

Working Circle

CHAPTER-XV

Working Plan for Wildlife Working Circle

15.1 General constitution Of Working Circle

15.1.1 This Working Circle is identical in constitution to the corresponding Working Circle of the Plan under revision. This working Circle includes Sudh-Mahadev Game Reserve which is already under the control of Wildlife (Protection) Department and Rakhs of Udhampur Range. Prescriptions are also being made for the management of wildlife outside the Game Reserve and Rakhs to serve the Nation Forest Policy's mandate of maintaining the Biological diversity. The primary objective of constitution of this Working Circle is to protect, preserve and improve the habitat for the conservation of wildlife. The Wildlife (Protection) Act 1972 defines wildlife as ''the native uncultivated flora and fauna''. Keeping in view the above definition of wildlife, prescriptions have been made for preservation and conservation of native flora also.

15.2 Special Objectives Of Management

- To conserve, preserve and improve upon the habitats for conservation of wildlife.
- To reduce man-animal conflict by preventing the habitat destruction of wild animals.
- To minimize the human activities in core habitat areas of important wildlife species by creating massive awareness among general public.
- To protect the wildlife from poaching and smuggling.
- To maintain biological diversity in managed forests by suitably changing forestry operations which have a potential of changing habitats in a variety of ways

The Working Circle shall be discussed under three sub-topics viz Sudh-Mahadev Game Reserve, Rakhs and Wildlife in managed forests

15.3 Sudh-Mahadev Game Reserve

15.3.1 Sudh-Mahadev Game Reserve was constituted in 1991 by transferring Compartments 1a, 1b, 2, 3a, 3b, 3c, 3d, 4, 5, 6, 7, 8, 9, 11, 12, 14, 15, 36a, 36b, 41a, 41b, 99, 101, 100b, 105, 106, 107, 108, 109, 112, 113 & 114 of Dudu Range and Compartments 25b,upper portion of compartments 26, 28, 29, 30, 31, 36, 37, 39, 41, 42, 43a, 43b, 44 and 45 of Marmat Range and placing them under the administrative control of Wildlife Protection Department.At present the compartment 1 to 6 are managed by the territorial Division.

Ares Statement Of Sud Mahadev Conservation Reserve (In Ha.)

		Commercial Area				Un – Commercial Area		Total
Range	**Comptt. No.**	**Deo**	**Kail**	**Fir**	**Chir**	**B.L**	**Blank**	
Dudu	1a	0	35	193	0	185	135	548
	1b	0	0	0	0	28	16	44
	2	35	0	94	0	120	118	367
	3a	0	31	0	0	16	9	56
	3b	109	43	0	0	0	58	210
	3c	0	0	0	0	197	40	237
	3d	0	0	0	0	84	61	145
	4	49	0	20	0	0	14	83
	5	66	17	0	0	8	13	104
	6	0	62	0	0	98	28	188
	7	82	0	0	0	0	16	98
	8a	35	0	8	0	0	5	48
	8b	10	0	29	0	0	6	45
	9	70	0	126	0	27	249	472
	11	15	11	74	0	36	5	141
	12	12	23	127	0	24	9	195
	14	19	17	97	0	60	25	218
	15	0	0	264	0	649	96	1009

	36a	0	0	214	0	166	409	789
	36b	0	7	25	0	0	4	36
	37	0	0	262	0	193	1021	1476
	41a	0	0	0	0	1031	429	1460
	41b	0	138	662	0	902	1348	3050
	99	106	0	0	0	29	52	187
	100a	71	12	0	0	23	18	124
	100b	73	0	0	0	6	0	79
	103a	10	0	0	0	0	161	171
	103b	0	13	17	0	51	85	166
	105a	0	36	24	0	118	16	194
	105b	0	0	0	0	194	322	516
	106	0	0	193	0	187	58	438
	107	0	0	45	0	56	107	208
	108	0	11	85	0	56	19	171
	109a	0	39	105	0	115	27	286
	109b	11	0	11	0	110	17	149
	109c	0	0	0	25	0	3	28
	112	0	83	23	0	0	58	164
	113	0	0	123	0	0	87	210
	114	0	57	84	0	207	52	400
TOTAL		**773**	**635**	**2905**	**25**	**4976**	**5196**	**14510**

****** ***Note*** ***Vide letter No. PCCF/Coord/Wildlife/Dudu/145-47 Dated 03-02-2014 there is proposal submitted by the Conservator of Forests,Wildlife, Jammu region to exclude compartment 1b/Dudu to 6/Dudu from the conservation reserve. Thus a total of 1434 Hectares will be denotified/handed over to the Forest Department. In place of the aove mentioned compartments the compartment No's 34 , 35b,38,39,40a,40b,42,43,45b and 46/Dudu of Udhampur Forest Division will be included in the Sud Mahadev Conservation Reserve. The total area of these compartments is 3211 Ha.**********

15.3.2 **Flora: -** Fir is the main coniferous species with small patches of Deodar and Kail. Broad leaved species are Banj, Moru, Kharsoo, *Toona ciliata, Aesculus indica, Prunus padus, Juglans regia, Fraxinus floribunda, Alnus nitida, Machilus spp, Betula spp., Rhododendron spp., Viburnum*

nervosum, Parrotia jacquemontiana, Sarcococca saligna, Cotoneaster macrophylla etc.

15.3.3**Fauna: -** Black bear, Goral, Thar, Common langur and Musk dear are the important species of the reserve.

15.3.4**Avi-Fauna**: - This includes Kajeel pheasant, Snow pigeon, Chakure, Monal pheasant, tragopons, Bush quails etc.

15.3.5The detail of the Compartments along with their area allotted to this Working Circle are given in Annexure-1F

15.3.6 **Present Condition Of The Wildlife**:-Sudh-Mahadev , Latti and Dudu villages are situated inside the Game Reserve .The villagers along with their huge live stocks are causing a great damage to the wildlife habitat. Since the Game Reserve includes best pastures (Behaks) of the Division, it attracts large number of local as well as migratory graziers during summer months. Since most of the people possess fire arms, hunting of wild animals is quiet common. This indiscriminate and ruthless killing has brought the species like Brown bear and Musk dear on the verge of extinction. The population of wildlife is declining by every passing year which has resulted in extinction of many species and some species here reached at the stage of extinction. The factors responsible for the decline of the wild life are as under:-

1. The population explosion of both human beings and their cattle.
2. The encroachment upon forest land.
3. The developmental activities such as construction of roads etc.
4. Uncontrolled hunting of wild life.

The above mentioned factors are responsible for diminishing the habitat of wildlife and have increased interference by both human beings and their cattle even in the far-flung areas. This has adversely affected the population of wildlife.

15.3.7**Method Of Treatment**:-The following measures are suggested for the management of wildlife of the Game Reserve:-

- In order to manage and maintain wildlife on scientific lines, it is essential to assess the population distribution, habits and habitat of various species of wildlife found in the tract. For this purpose, census of the wildlife census should be carried out in the area using latest scientific techniques.
- A general awareness of Wildlife Protection Act, 1978 and rules needs to be ensured among the common masses through much wider communication and extension services and provisions of J&K Wildlife Protection at 1978 should be strictly implemented in forest areas.
- The Reserve should be divided into core and multiple use zone (Buffer). The Eco developmental activities should be carried out in multiple use zone only.
- A wildlife Protection committee should be constituted.
- Periodic vaccination of cattle of neighboring areas is a must to avoid spreading of epidemics in wildlife.

15.4 Rakhs

15.4.1In Udhampur Range of this Division a total of a total of 8 Rakhs are present covering an area of 827 Hactares.These include Rakh Jaganoo, Dharamthal,Nehranal, Lansi, Kotli, Sansooh, Tandeh and Rakh Thanoa.The comparative statement of the area under these Rakhs is given in below:

Range	Name	Deo	Kail	Fir	Chir	B.L	Blank	Total
Udhampur	Jaghanoo	0	0	0	0	58	0	58
	Dhramthal	0	0	0	0	30	0	30
	Nehranal	0	0	0	31	104	12	147
	Lansi	0	0	0	0	11	0	11
	Kotli	0	0	0	0	85	15	100
	Sansooh	0	0	0	0	87	0	87

	Tandeh	0	0	0	0	34	5	39
	Thanoa	0	0	0	0	302	53	355
TOTAL		**0**	**0**	**0**	**31**	**711**	**85**	**827**

15.4.2 **Flora: -** The species met with are *Acacia modesta, Acacia catechu, Cassia fistula, Dalbergia sissoo, Syzgium cumini, Emblica officinalis, Pistacia integerrima, Bute monosperma, Lannea coromandelica, Olea cuspidate, Terminalia bellerica, Terminalia chebula, Zizyphus mauritiana* etc. The undergrowth includes *Flacourtia indica, Carissa spinarum, Dodonea viscose, Woodfordia fruticosa, Adhatoda vasica, Berberis lyceum, Punica granatum, Bauhinia vahii, Clemantis gouriana etc.*

15.4.3 **Fauna: -** In the past these Rakhs used to abound in a variety of Wildlife like Black bear, Pijjar, Barking deer, Porcupines, Jackals, Jungle fowl, Peafowl, Partridges and Monkeys etc. These Rakhs were hunting reserves of erstwhile kings.

15.4.4 **Present Condition Of The Wildlife**:-Due to reckless destruction of habitat and poaching, wild animals have almost vanished from these Rakhs. These Rakhs are being subjected to excessive biotic pressure for collection of fuel-wood, fodder, grasses and small timber because of their close proximity to habitations. Above all, these Rakhs are leased out to nomadic graziers every year for grazing purpose on their return from highland pastures during autumn.

15.4.5 **Method Of Treatment**:-The following measures are suggested for the management of these Rakhs:-

- Keeping in view the various socio-political considerations, it is not possible to completely close these areas in one instance. For migratory tribes, alternative grazing sites should be developed. Some of the compartments allotted to Rehabilitation Cum Reboisment Working Circle can be developed as green fodder farms to mitigate the hardships of migratory Bakerwals who will be affected if the Rakhs are completely closed.

- Wild animals should be introduced in these Rakhs after closing them with deer proof fence. To start with, Tandah Rakh which is situated in the heart of Udhampur town should be closed and wild animals should be introduced. The Rakh should be developed as a Nature Park. A network of bridal paths and a strategically located watch towers should be constructed to facilitate wildlife viewing, with an objective to develop it into an important attraction for the people of Udhampur Town and the tourists coming from outside. The Park will serve the purpose of a breeding center as well. Surplus animals from this park should be introduced in other Rakhs in a phased manner.
- For effective protection Guard huts should be constructed within these Rakhs.
- No fellings of whatsoever nature should be permitted in these Rakhs.
- Effective steps should be taken to stop poaching of Wild animals. Provisions of J&K Wildlife Protection Act should be strictly enforced.
- For the development of wildlife habitat, water points should be developed where ever required.
- Plantation of local broad leaved species should be taken up in the blanks
- Effective measures should be taken to control forest fires

15.5 Wildlife In Managed Areas

1. According to the National Forest Policy (1988) and Jammu and Kashmir State Forest Policy (2010) the mandate of forest planners and managers is to maintain biological diversity. Forestry operations have the potential of changing forest conditions and therefore, habitats in a variety of ways. The changes impact the plant and animal species, their communities and populations in different ways. To serve the new forest policy mandate, there is a need to change the traditional forestry out look.
2. The approach to managed forests looks at issues relating to micro and macro habitats. These include standing trees includes snags, dens, tall and large crowded big old trees, trees with flaking and splitting bark, trees that bear fruits, flowers, seeds or bark or roots of

which are of special significance to wildlife. The down wood category includes fallen trees on the ground or those partially submerged in stream water, large hollow logs rooting on the forest floor, large aggregation of sloughed bark from large old trees.

3. Current research and management experience suggests retention of ten snags of large size per hectare in a randomly distributed pattern. Like-wise retention of five large hollows logs randomly distribute on forest floor is recommended. Trees fallen partially in the streams should be treated as a separate category and they should be retained in their position as far as possible. Big sized old trees with large spreading crowns ought to be retained. Tree species which tend to have the splitting and flaking bark should be retained randomly throughout the forests. Regeneration and recruitment needs of fodder leaf, fruit, seed, flower bearing tree species should be safeguard.
4. Caves, dens and over hangs which usually occur along the drainage are used by different species, mainly carnivores viz leopard and bear as shelter and breeding site and secure place for raising the young. It is therefore, necessary to conduct proper survey to establish coupe boundaries in manner that activities within the coupe and those that relate to its operation have little possibility of distributing such key sites.
5. No marking of whatsoever nature should be carried out to a width of at least 100 meter on either side of all stream channels of consequence, keeping in view their biological ecological and watershed values. All such stream channels usually carry a local name.
6. All treeless openings or sites should not be treated as blanks. They need to be managed for their associated structural and biological attributes, ecological functions and physical integrity. While taking up any development activity in alpine pastures, it should always be kept in mind that they support a variety of medicinal plant also, along with the grasses.

7. As far as possible, plantations of exotics should be avoided in the interest of native wild plants. If it is unavoidable, exotics can be planted in suitable admixture with native species. Effort should be made to maintain/restore natural species composition of forests.

CHAPTER-XVI

Working Plan for Non Timber Forest Produce (Overlapping)

Working Circle

CHAPTER-XVI

Working Pan for Non Timber Forest Produce (Overlapping) Working Circle

16.1 General Constitution of Working Circle

16.1.1 The Working Circle is identical in constitution to the corresponding Working Circle of the Plan under revision. This Working Circle will overlap all other Working Circles of the Division. For the purpose of discussion the Working Circle shall be dealt under two sub topics viz Resin Tapping & other Non Timber Forest Produce yielding species.

16.2 Resin Tapping

16.2.1 **Special Objectives Of Management**:-

- To obtain yield of resin on a sustained basis keeping in view the availability of space on trees for making new blazes.
- To provide rest from resin extraction to the poorly stocked Chir crop with unsatisfactory regeneration.

16.2.2 **History Of Resin Tapping**:-

- Extraction of resin from forests of Udhampur and Ramnagar Ranges started prior to 1914-15 to meet the scanty demand of resin for medicinal and other purposes. The technique to obtain resin was to give a deep cut into the trunk of tree after fixing a pot at its bottom to serve as a receptacle for collection of resin.
- Mr. W .H. Lovegrove the Conservator of Forests J&K started resin tapping on scientific lines in 1914. At first Chir trees were tapped for 5 years followed by rest for 10 years. Whole of the Chir bearing area used to be divided in three parts. Later on during 1921 L . Mulk Raj Gandotra, Dy. Conservator of Forests, under this scheme, provided 5 years tapping followed by five years rest to the crop. Under this scheme each resin block was divided into two sub blocks so that the work may proceed on in each block every year by taking up each part alternatively after a period of five years. The length of the channels was fixed at 20'' in the

first year and 16'' in the subsequent year with 48 freshenings during the season. But it was felt that to obtain sustained supply of resin, such dimensions of the blaze was too big and it was thought safer to tap more lightly. Accordingly, in 1924 the system of intermittent tapping was changed to light continuous tapping.

- In 1914-15 when resin tapping was started, production of resin was only 110 quintals. Concerted effort was made to bring more areas under resin tapping and during the period of 1955 to 1975, number of blazes under tapping fluctuated between 7 to 9 lacs and annual production of resin was between 1700-1900 M. Tones. During the year 1975-76, there was a big leap when number of blazes under tapping was increased upto 16.65 lacs and resin yield was 6848 M. Tones. Maximum damage to the Chir crop was caused during this period. Since then, it is on decline with 990 M. Tones in 1995-96.
- In Sh. S. P. Sharma's Plan , number of blazes was fixed at 7,75,000 (excluding Ramnagar Range). But it was apprehended that there will be a decline in number of tappable trees in the years to come because number of trees in 10-30 cms dia class was lesser than those of 30-40 cms dia class and trees in 10-20 cms dia class were even lesser than that of 20-30 cms dia class. Also, because of total disregard for tapping norms and enormous wastage of tappable space. Remaining tapping life of Chir trees was estimated as under (for cup and lip method of tapping):-

  - i. Trees of 35 to 40 cms dia - 9 to 16 years.
  - ii. Trees of 40 to 50 cms dia – 14 to 20 years.
  - iii. Trees of 50 to 60 cms dia – 20 to 26 years.
  - iv.Trees of 60 to 70 cms dia – 7 to 10 years (with double blaze).
  - v. Trees of 70 to 80 cms dia – 10 to 15 years (with double blaze).

- In Sh. Sarvesh Rai's Plan, number of blazes was fixed at 12, 44,515 in Chir Regular Working Circle. Keeping in view the poor stocking and unsatisfactory regeneration of Chir crop of compartments allotted to Rehabilitation Cum Reboisment Working Circle, it was proposed that the forests of this Working Circle shall be given complete resin from resin extraction during the period of the Working Plan. So the resin tapping was only allowed in compartments allotted to Chir Regular Working

Circle. It was suggested to divide the entire Chir Regular Working Circle in two almost equal blocks i.e. Block I and Block II, giving due regard to the distribution of work in different parts of the Division. One BBlock was to be tapped during first five years and the other block during the next five years.

16.2.3 **French Cup and Lip Method**: - Resin extraction was done by traditional ''French Cup and Lip'' method till 1987-88. Salient features of this method of tapping are summarized below:-

- Minimum diameter of Chir for resin tapping was 35 cms dbh(ob) for single blaze and 50 cms dbh(ob) for double blaze. Later on, in 1985, tappable diameter was raised to 40 cms dbh(ob) for single blaze and 70 cms for double blaze.
- Width of the channel used to be 10 cms and depth 2.5 cms. Length of the channel was 48 cms in the first year and 38 cms in subsequent years, at the end of tapping season. The intervening space between two successive blazes was fixed at 13 cms at the base and 10 cms at the height of 2 meters. Freshening was done twice a week with a sharp edged freshener. Total freshening in a month was fixed at 4.7 cms starting of the new channel. Starting of the new channel was permitted only after the working of the old channel for 4 to 5 seasons or where the height of the channel had exceeded 180 cms.

16.2.4 **Rill Method: -** In 1988-89 ''French Cup and Lip'' method was replaced by modern Rill method. Rill method is found to be better as it does not damage the bole of the trees. Width of the blaze in Rill method is 20 cms. Average width of the Rill is 6-7 mm and depth 2 mm. Inter space between two consecutive rills is 5 mm. Freshening is done once a week. On an average 26 rills are made in one tappable season of as many weeks. Therefore, in a resin channel, height of 34 cms is attained in one season. A channel can be tapped for four or five years. Inter space between two channels is 7.5 cms.

16.2.5 Extraction of resin is done departmentally through ''Wage mate''. Wage mate has to sign an agreement with the department in this regard.

Resin Channel Survey Exercise

16.2.6 For assessment of future tapable life of the crop, resin channel survey exercise was undertaken on all sample points falling in Chir areas. A total of 110 sample points were surveyed in both Chir and Reboisment Working Circle. On each tallied tree of 40 cms and above dbh(ob), data were collected as under:-

1. No. of blazes (by Cup and Lip Method and /or Rill Method) in a channel.
2. Dimension of the channel
3. Available space for making new blazes.

16.2.7 The following assumptions have been made while assessing the future potential for tapping:

1. The tree count has been calculated at the lower confidence limit.

2. The surface area from 15 cm above the ground level to a height of 2.00 metre on up-hill side has been considered as the total tapping space in a tree.

3. No irregularities in respect 0f dimensions of the blazes shall at all be permitted to reoccur. Tapping in the future shall be carried out strictly in accordance with the prescribed norms.

4. No new blazes shall be put on any tree unless there is availability of prescribed inter space between two consecutive blazes.

5. Trees below 40 cm diameter shall not be placed under tapping.

6. Irrespective of the size of tree above: 40 cm d.b.h, (ob)only one blaze shall be placed on a tree in a year.

7. Trees shall be tapped under Rill Method of continuous resin tapping.

16.2.8 The length and height of channel above the ground level in respect of 2^{nd}, 3^{rd}, 4^{th} and 5^{th} years will be as follows:

Years	Height of channel in cms	Height of channel above ground level	Height of topmost point of channel from the ground by the end of year.
1st	10 + 38 = 48	15 + 3 = 18cms	66cm
2nd	48 + 38 = 86		104cm
3rd	86 + 38 = 124		142cm
4th	124 + 38 = 162		180cm
5th	162 + 38 = 200		218cm (If found described)

16.2.9The data collected from the field were analyzed to ascertain availability of space for future tapping and it was observed that:

- Most of the surface area has already been utilized by Cup and Lip Method of tapping in the past. There is hardly any space for making new blazes and the gap of 7.5 cms between adjoining channels which is required for ensuring ascent and descent of sap , as well as for the survival and recovery of health of tapped trees has not been maintained.

- The technique of resin taping has not been properly implemented in the field due to unskilled labour engaged for resin extraction faulty, country made tools and carelessness of supervisory staff of the department.it appears that the technique of tapping has not been properly understood either by the field staff or the tappers.

- The disregard to the laid down norms of resin tapping has resulted into enormous watage of tappable space.The blazes made in the past by Cup and Lip Method have caused excessive damage to the crop. The deep channels have badly affected the mechanical strength of trees resulting into snapping of trees due to wind.
- The occurrence of forest has also reduced the tappable life of trees.

Future Tappable Life Of Trees

16.2.10 The statement showing distribution of trees and availability of space for number of new blazes in different diameter classes is given in the table below. The Total available space in Chir Working Circle works out to be 3,51,315 blazes. Keeping in view poor stocking and unsatisfactory regeneration in Chir crop compartments allotted to Rehailitation Cum Reboisment Working Circle, the forests of this Working Circle shall continue to be given rest from resin extraction. Resin tapping shall be allowed only in compartments allotted to Chir Working Circle.

Result of Resin Channnel Survey Exercise

Chir Working Circle

Table 16.1

Diameter class	Total number of trees (at LCI)	Available space for making new blazes	Total availability of Space for No. of blazes
40-50	73154	0.69	50476
50-60	64078	0.9	57670
60-70	28868	1.63	47054
70-80	13614	0.72	9802
80 & ab	6014	30.98	186313
Total	**446822**		**351315**

Total number of blazes = 351315

Number of blazes per annum = 35131.5

Rounding off to lower multiple of hundred =35100

The expected yield of resin from 35100 blazes at the rate of 3.25 kg per blaze works out 114075 kg per annum.

Rehabilitation Cum Reboisment Working Circle

Table 16.2

Diameter class	Total number of trees (at LCI)	Available space for making new blazes	Total number of blazes
40-50	125471	0.147	18444
50-60	207147	0.2	41429
60-70	122552	0.46	56373
70-80	63773	0.1	6337
80 & ab	47483	-	-
Total	**566426**		**122583**

Note: The resin extraction figures of the previous years is given in Chaper-III, Page 54

16.2.11 Miscellaneous Regulations

Miscellaneous regulations in respect of resin tapping are as under:

1. All arrangements necessary for resin extraction should be made by 31st December every year.
2. The pre-setting and setting of the crop must be completed by the end of February.
3. There should be at least one tapper for every 500 blazes.
4. The work of tapping must begin in the month of March every year.
5. All the officials and labourers engaged in resin tapping operations should be imparted proper training in order to minimize the damage due to abnormal tapping.
6. Before scaling, the resin filled tins should be inspected by an official of the Forest Department.

7. Sample checking of resin filled tins of each lot/coupe should be done to determine adulteration! admixture.
8. All the tins should be inspected, passed, numbered, stamped and duly signed by an authorized official of the Forest Division, before these are included in the resin coupe/lot.
9. The first channel will be near the ground on the southern face of the tree. New blaze will be permitted only on trees which have either no blaze or the old blaze has been tapped for 5 seasons or where the height of the blaze has exceeded 180 cm.
10. The intervening space between two successive blazes will be 10 cm at the base and 10 cm at the height of two meters.

16.3 Non Timber Forest Produce (Other Than Resin) Of The Tract

16.3.1 **Special Objectives Of Management**:-

- Conservation and protection of NTFP yielding plant species of the tract.
- Cultivation of certain NTFP yielding plant species, which have ready market, in degraded forest areas.

Management of NTFP'S

16.3.2 Reliable information about past and present status of most of the NTFP's of the tract, particularly, herbs and shrubs is not available.Very sketchy information about NTFP's is presently available which cannot form the basis for the formulation of a comprehensive management strategy. It is saddening to note that the department, in its long history, has not bothered to maintain any record of its enormous NTFP wealth. Even, past Working Plans are also silent about the status of NTFP's of the tract. There is no clear eveidence to indicate whether continued and unregulated extraction of NTFP's has adversely affected their population or not. However, it can be said without doubt that general degradation of forests must have adversely affected habitats of most of the herbs

and shrubs. As per the general field surveys the availability of certain plants has reduced drastically over the course of time.

16.3.3 Despite the lifting of ban in the year 2013 ,on extraction of Minor Forest Produce from demarcated forests of the State of all those species not included in Schedule-VI of the Jammu and Kashmir Wildlife (Protection) Act 1978 (amended till date), the following suggestions/recommendations are made on the basis of available information:

1. **<u>Complete Ban On Extraction / Felling Of Certain Plant Species:-</u>** The following plant species of the tract fall in the category of Endangered/Vulnerable species (Source : Medicinal Plants of Kashmir and Ladakh-Temperate and Cold Himalayas by M . K. Koul.

   - *Saussurea lappa* ---- E
   - *Podophyllum emodi* ---- E
   - *Dioscorea deltoidea* ---- E
   - *Aconitum heterophyllum* ---- V
   - *Picrohiza kurroa* ---- V/E
   - *Taxus baccata* ---- E
   - *Veleriana wallichii* ---- V

   (E = Endangered , V= Vulnerable , T = Threatened)

   The management/ extraction and commercial uses of the first five species mentioned above fall under the purview of Kuth Act.

   It is recommended that extraction/falling of all plants species, mentioned above, from forests of this division shall be banned.

2. **<u>Training of Forester's and Guards In Collection, Processing & Storage of NTFP's</u>** :-

   Training of Foresters and Forest Guards should be expanded to provide greater emphasis to NTFP's and their production, utilization and marketing. Training of field staff is necessary and a pre-requisite for introducing NTFP bias in forest management. Where local knowledge is inadequate, practical training should be provided to local growers,

collectors and processors of NTFP to ensure sustainable and efficient use of the resources and to increase local income level.

3. **Cultivation of NTFP's**:-

- With increasing extraction of NTFP's and their use, consideration should be given to ex-situ cultivation to relieve pressure on wild resources.
- Forest legislation (particularly Kuth Act) should be reviewed in light of NTFP needs, especially on the need of commercial cultivation of NTFP's.
- The department should explore the possibility of allowing the farmers to grow suitable NTFP's as inter-crop in agro-forestry. Cultivation of certain NTFP's outside forests has great prospects.
- Herbal gardens should be developed, at least one in each Forest Range, to begin with, to augment resources of plants for various purposes and thus reduce pressure on wild resources.
- Creating assured and profitable market can encourage cultivation of NTFP's. The department should work out some arrangement with industries using NTFP's as raw material to purchase a certain minimum quantity of NTFP'S at a minimum fixed price, every year.
- In RDF (Rehablitation of Degraded Forests) and Village Wood-lots, there is possibility of intercropping of lower level canopies along with tree canopies. Already fenced closures can also be taken up for planting of NTFP species. In inter-spaces grasses, herbs and shrubs can be co-crops. For such under/inter-cropping wider tree spacing should be adopted.
- For propagation of herbs and shrub species, tissue culture technology is likely to be useful. Regional Research Laboratory, Jammu has done some work in this field.

4. **Extraction of NTFP's :**-

The present practice of awarding royalty contract for extraction and transportation of NTFP's from forests to the person(s) making the

highest bid is flawed as it gives unhindered access to the contractor in entire forests of the division. In lieu of a paltry sum, the contactor is allowed to extract as much as possible without any regard to the sustainability of the species extracted. Though the department imposes some restrictions but their effectiveness is doubtful. The department appears to be only concerned with collection of royalty and issuance of F-25 for transport of NTFP's.

The contractors collect NTFP's through middleman. In this arrangement contractors and middleman enjoy lion's share while primary collectors/producers get a very low return for their efforts. Right now, there are no prescribed norms for equitable sharing of benefits between various groups. Because of low wages NTFP collection and processing attracts individuals with low opportunity cost, primarily women, children and elderly.

In view of the above, it is suggested that the department should play an active role in regulating extraction and sale of NTFP's. It is recommended that the present system of royalty contract should be done away with and a new system of extraction, which involves local people, should be adopted. The objective of introducing a new system of extraction is to involve local people in management, protection and extraction of NTFP's, to ensure sustainable management and also to provide fair return for their efforts. The proposed system of extraction id briefly described hereunder:-

Village (Forest Management) Committees should be constituted on the pattern of Village (Rehabilitation of Degraded Forests) Committees. Where Village (Rehabilitation of Degraded Forests) Committees have already been constituted, they will serve the purpose of Village (Forest Management) Committees also and there is no need to constitute new committees. The main functions of Village (Forest Management/Rehabilitation of Degraded Forests) Committees inter-alia should be to associate with the department in management, protection and harvesting of NTFP's from forests. Village (Forest Management/Rehablitation of Degraded Forests) Committees should be assigned the task of extraction of NTFP's from forests under supervision

of the department. The department may share 50% of the proceeds from harvest of NTFP's in kind or the sale of proceeds of the produce among members in lieu of the labour provided by the committee in extraction. The committee in consultation with all the members will determine how to share 50% of the proceeds from each harvest in kind on the sale proceeds of the produce among members.

5. **<u>Information /Research Needs</u>** :-

- Presently comprehensive information about NTFP's of the tract with regard to their status, availability, distribution and their uses is sorely lacking.
- Information about degree and extent of local use of NTFP's is also not available.
- Information about present market price of most of the NTFP's is not available.
- There is no reliable information about present and future market demand for NTFP's.
- Indigenous knowledge about NTFP's need to be documented.
- Nursery and plantation techniques of most of the NTFP species need to be standardized.
- Appropriate technologies for NTFP harvest, processing and use should be standardized.

Sustainable extraction level of NTFP's cannot be determined in absence of reliable data. Therefore it is recommended that requisite information /technology should be collected/developed through special projects.

Important NTFP Yielding Species Of The Division

Table 16.3

Common Name	Botanical Name	Distribution
Khair	*Acacia catechu*	Found mixed with other Broadleaved associates
Kakar Singhi	*Pistacia integerrima*	Rakhs, Co. 63 P & 53P
Yew	*Taxus baccata*	42D, 43 D,3 P, 6 P, 29 P 68 P, 69 P, 70 P
Anardana	*Punica granatum*	44 U, 45 U, 46 U, 58b U, 60 U, 61 U, 62 U, 73 U, 82 U, 83 U, 87b D, 87c D, 87d D, 89 D, 12 P, 13 P, 17 P, 19 P, 20 P, 26 P, 34 P, 55 P, 56 P.
Bafashfa	*Viola Species*	Found throughout the Division except in the lower areas of Ghuddar Sangial, Bali Trichi and Hartharyan Blocks of Udhampur Range
Mushkibala	*Valeriana wallichi*	Found in higher reaches of Dudu & Panchari Ranges
Kaur	*Picrorhiza kurroa*	38 D, 40a D, 40b D, 46 D, 47 ab D, 50 D, 67 P, 68 P.
Patis	*Aconitum heterophyllum*	Found at higher reaches of Dudu Range especially in Co.35ab D, 38 D, 40ab/D, 45ab/D, 47ab/D
Gucchi	*Morchella aseculenta*	Found throughout the division excluding Bali Trichi and Guddar Sangial Blocks of Udhampur Range
Barian bach	*Acorus calamus*	On private lands up to an altitude of 2000 meters. Mostly found in moist and marshy localities, Edges of ponds, slow flowing waterways.
Brahmi booti	*Centella asiatica*	Fond in Dudu up to an altitude of 6000 ft

CHAPTER-XVII

Working Plan for Fodder Development (Overlapping)

Working Circle

CHAPTER-XVII

Working Plan for Fodder Development (Overlapping) Working Circle

17.1 General constitution Of Working Circle And Character of Vegetation

17.1.1 This Working Circle overlaps with areas allotted to Chir Working Circle, Deodar – Kail Working Circle, Fir Selection Working Circle and Rehabilitation Cum Reboisment Working Circle.

17.2 Special Objectives of Management

17.1.1 The major objectives are :-

- To address the menace of unscientific, uncontrolled and unregulated grazing.
- To improve upon the general health and carrying capacity of pastures by introducing suitable pasture management techniques like rotational grazing and stall feeding.
- To make the unproductive blanks productive by introduction of nutritious grasses, fodder yielding plant species etc.
- To mitigate hardships of nomads during their seasonal migration by developing the migratory routes, providing proper halting places, and shelter-sheds along the routes.

17.3 Grass Types

17.3.1 The following grass types are found in the Division :-

- Themeda – Arundinella type
- Temperate – Alpine grass cover

Themeda – Arundinella type of grass cover is found in the altitudinal range of 1000-2100 mtrs with best growth towards the upper reaches. This

grassland type occurs in relatively cooler conditions. Some of the tracts receive snowfall during winter months. The prominent grasses are:-

- *Heteropogon controtus*
- *Cynodon dactylon*
- *Themeda anthrea* (forms the main grass cover)
- *Setaria* spp.
- Eragrostics

Temperate Grass Cover : This type of grass cover is found in moist temperate zone at very high altitude. These grasslands form the Alpine pasture and hence form the grazing grounds for migratory cattle during summer months. Extreme cold conditions prevail throughout the year. Bulk of the precipitation is in the form of snow which may lie on ground for several months at a stretch. The prominent grass are:-

- *Phalaris tuberose*
- *Polypogan fugax*
- *Poa pratensis*
- *Chrysopogon spp*
- Legumes like *Trifolium repens*

17.3.2 Most of the blanks in forests of the Division are covered with grasses. Blanks devoid of any kind of vegetation such as rock out crops are rarely encountered. Therefore, all the blanks shown in area statement of different Working Circles are basically grassy blanks. List of alpine pastures is given in the Annexures.

17.3.3 Cattle rearing is a traditional activity enmeshed with socio-economic structure and fabric of the population of the State. Geo-climatic conditions are very conducive for rearing of goat and sheep. Geo-climatic conditions necessitate use of wool and animal protein. Therefore, goat and sheep rearing has remained a main occupation of the communities like Bakerwals and Gaddis of the region. For Gujjars, rearing of Buffaloes is the main occupation.

17.4 Analysis of Grazing Problem

17.4.1 Population of livestock has gone up manifold in the past. Comparison of the census figures of with 1992 figures indicate a huge increase in sheep and goat population. The Division has a staggering livestock population of 16.168 Lacs. The total population of livestock has unrestricted entry in our forests except closures. There are 5600 Hectares of pastures in the Division. It is estimated that against that grazing pattern exceeds the carrying capacity. Per cattle unit fodder requirement is 45 quintals/annum. Therefore the total fodder requirement of the Division works out to 72720,000 quintals /annum.

17.4.2 Unscientific, uncontrolled, unregulated and excessive grazing beyong the carrying capacity of these pastures has resulted into overuse of these pastures with consequent reduction in their productive capacity. Emergence of gullies is indicative of functional disorder. Significant portion of pastures is occupied by unpalatable, noxious weeds. Irreparable damage is likely to be caused if corrective measures are not taken in time.

17.5 Method of Treatment

17.5.1 Multi- pronged strategy is to be adopted to tackle the problem of degradation of pastures and the improvement of bio-mass production. The development of fodder resources and rehabilitation of grazing lands on forests and in forest fringe areas is of paramount importance in view of the total dependence of a large number of people on this resource for their livelihood needs. The development of fodder resources will be achieved through allocation of clear and mutually exclusive but closely inter-linked roles and responsibilities to the various line departments, viz. the Department of Animal Husbandry , in collaboration with research institutes , will be responsible for development of better livestock breeds ; and fodder storage , feed development etc. The Department of Agriculture , in collaboration with agricultural universities and research institutes, will be responsible for developing, promoting and extending nutritious and high yielding varieties of fodder

species for cultivation on agricultural lands. The department of Forests in collaboration with Panchayat Raj Institutions, JFM Committees will be responsible for rehabilitating the degraded grazing lands through promotion of fodder species –grasses, legumes and trees and creating fodder banks in the forest fringe villages. Such an approach will allow the various line departments to concentrate on their defined roles, especially in view of the anticipated changes in the livestock growth patterns. Furthermore the following measures are suggested for tackling this problem:-

- **Adjustment Of Grazing Needs In Relation To The Carrying Capacity** :
  For achieving this objective, inferior cattle is to be castrated with the help of Animal Husbandry Department and sufficient and good quality fodder is to be provided to the superior livestock. In particular, population of goat needs to be controlled. Because of their browsing habit, they cause a devastating effect on vegetation. The goat owner, therefore, should be educated on the advisability of reducing the number of goats. To obtain maximum production from particular grassland, it is of paramount importance to secure a balance between number of animals and fodder resources.
- **Grazing During Correct Season/Introduction of Rotational Grazing** :
  Grazing during the correct season is very important for obtaining maximum production from grassland. Large number of cattle throng the alpine pastures immediately after the snow melts. During this period, rapid growth of plants temporarily depletes the food reserve and therefore grazing should be deferred till the plants are able to restore these food supplies. Since it may not be possible to implement in field, rotational grazing should be introduced. The pasture to be grazed should be divided into a number of units, each of which should be opened for grazing in turn.
- **Soil and Water Conservation** :
  Pastures of the Division are suffering from severe soil erosion in the form of rill, sheet and gully erosion. All tracts that are extremely steep or severely eroded should not be grazed and must be put under permanent vegetative cover. Suitable mechanical and engineering structures should

be erected to prevent the formation of gullies. The run off should be directed from gully head before control measures are initiated. Soil loss as a result of freezing and the wind should be minimized by a mulch of braches, straws and leaves.

Contour furrows in continuous strip or a series of staggered strips should be made to improve the moisture regime. Studies conducted elsewhere indicate that furrows 12 cms deep and 2-2.5 cms apart gives best results.

- **Application of Fertilizer** :

  Soil testing should be carried out before deciding what nutrients are sprayed on pasture land and I what quantity. Application of fertilizer subatantially increases the yield and nutritive value of the fodder. Application of nitrogenous and phosphatic fertilizers during monsoon helps in increasing the seed production significantly.

- **Weed Control**:

  Removal of weeds by hand is the most effective mechanical measure so as to control the growth of weeds. Selective weedicides can also be used to destroy them.

- **Development of Water Facility**:

  Existing springs and ponds should be suitably developed for use of grazing animals. Small check dams should be constructed along minor water courses to help conserve the soil and water and impound water to create reservoir for use of grazing animals.

- **Community Fodder Bank/Stall Feeding**:

  The concept of stall feeding should be popularized. Community fodder banks should be established at various places.

17.6 Development of Nomadic Routes

17.6.1 Movement of nomadic graziers from winter pastures to high land summer pastures with the start of spring is an age old practice. Trans-human pastoralism may be in the form of nomadic and semi-nomadic life styles of Gujjar, Bakerwals, Gaddis or movement of herdsmen with village cattle.

Pastoral Communities of The Division

17.6.2 Following Pastoral communities are found in the Division :

1. **Gujjars**: - Gujjars are semi-settled farmers.Gujjars who rear buffaloes are called ''Dudhi Gujjars''. Although majority of Gujjars are settled in permanent holdings on lower reaches of hills in winter but they do undertake seasonal migration to alpine pastures of Ladha dhar, Sibgarh and Seoj in summer.

2. **Bakerwals**: - The economy of Bakerwals is totally dependent on rearing of goat and sheep. They live permanently in tents. By far, the longest migrations are undertaken by Bakerwals which takes place between two ecological extremes of highest gorounds near Himalayan glaciers in summer and scrub forests in Shivalik in winter.

3. **Gaddies**: - They are partly settled farmers. They possess large flock of sheep and goat. They move to Seoj pastures during summers.

Routes adopted by nomads passing through Udhampur Forest Division

17.6.3 Following routes are adopted by nomads:-

- Jammu – Udhampur – Banihal – Drass
- Kathua – Udhampur – Kishtwar – Marwah and Wadwan route

17.6.4The graziers from areas of Surinsar, Mansar and nearby parts of Jammu cross Ladha dhar to reach Ramban and thereafter move towards Doda, Kishtwar and onward pastures to Marwah. Some of them move along National Highway from Udhampur up to Patnitop. One branch of nomads enter Udhampur Division from Hartarihan side and after entering Panchari Range from Kainthgali, move along the Kainthgali-Lander road. Later on they reach Ramban after crossing Sankpal. Nomads who enter the Division from Ram Nagar reach Bhaderwah passing through Kotli, Jug and Seoj. Another sub-route adopted by them

passes through Kotli, Chenani (along powerhouse road), Gorikund and Marmat.

17.7 Measures To Mitigate Hardships of Nomads

17.7.1 During their seasonal migration, the nomadic graziers face numerous problems such as inclement weather conditions, lack of proper halting places along the route, lack of fodder and water along the migratory route, lack of proper path for movement of their families and livestock etc. Cases of friction with local villages because of largely conflicting demands have become all too frequent. The stretch of the routes which passes through roads, especially National Highway, poses serious problems to the nomadic families and their livestock .There is no proper place along the roads where they can spend a few nights before moving to the next halting place. There is lack of water and food along the route as well. To mitigate the hardships of nomads the following measures are suggested:-

- **Providing Halting Places** :- Halting places where graziers can spend a few nights before moving to the next station are to be provided at Samroli, Dharamthal, Kud and Mansar. An area of 2-3 Hectares shall be closed at the halting places. The halting place will be connected with bridal paths. The facility of drinking water and fodder shall be provided at the halting places. For providing drinking water for the family of nomads, as well as, their livestock, water ponds shall be constructed with permanent lining material. Some areas, preferably in the vicinity of these halting places shall be developed with a specific objective of producing fodder. Compartment 72/Udhampur, Compartment 90and 93 /Dudu are best suited for this purpose. An area of 200 Ha. can be taken up in the beginning. The fodder from these places will be dried up as hay, bailed and made available to nomadic graziers against cash payment at the halting places.

- **<u>Shelter Sheds</u>**:- To provide protection to the families of nomads and their livestock against unfavorable weather conditions such as incessant rains, cloud bursts, hail storms etc. shelter sheds shall be constructed at all the important *behaks*. The entire structure will be constructed of cement and concrete.

CHAPTER-XVIII

Forest Protection Working Circle (Overlapping)

CHAPTER-XVIII

Working Plan for Forest Protection Working Circle (Overlapping)

18.1 General constitution Of Working Circle And Character of Vegetation

18.1.1 This Working Circle has been introduced for the first time as mandated by the Working Plan Code . This shall be an overlapping Working Circle focusing on the areas which experience the outbreak of forest fires along with others issues like encroachments, illicit felling, illegal transport of forest produce, Uncontrolled grazing, pest and disease control.

18.2 Special Objectives of Management

18.2.1 The major objectives are:-

- To protect the forests against damage by fire.
- The protect the forests from encroachments.
- To prevent the illicit damage of trees
- The prevent the smuggling illicit transportation of forest produce
- To protect the forests against the damage caused by pests and deseases.

18.3 Protection Against Damage by Fire

18.3.1 Forest fires are common during summer months, especially in the Chir forests and cause considerable damage to the young regeneration. Even light fires in Chir areas destroy the recruits completely. Extraction of resin during summer months further aggravates the problem. Fire penetrates deep inside the living tissue through the wound made on the tree's pole for extraction of resin. This causes dehydration and end result is the death of the trees. In the forests subjected to annual fire, the soil becomes dry and its fertility declines. The intensity of soil erosion also increases in these forest types as the leaf litter and humus is

burnt annually leaving the soil with a bare surface. The Oak forests adjoining Chir areas also affected by fire. Almost all the fires are caused by human beings. At many places people set fire in order to get a good grass in the following season and also to extend their encroachment over the forest land. Forest fires in the Division, especially in Chir forests are very common during the summer months. Perusal of the fire damage records provided by the Divisional Forest office indicates that fire incidences were reported, at least once, from all Chir bearing compartments during the period of 2000-01 to 2012-13. Therefore, it can be said that all Chir bearing compartments are vulnerable to forest fires. However, it is not possible to undertake fire protection measures in all Chir bearing areas keeping in view infrastructural, budgetary and other resource constraints. It is therefore suggested that the department should concentrate its resources in some selected compartments where from frequent fire incidences have been reported in the past. . Because of all these reasons prevention and control of forest fire assumes great importance in Ramnagar Forest Division and there is an urgent need to take effective steps to counter the menace of forest fires, with the aim of:

a) Protecting forests from damaging fires by taking up all preventive measures like administrative, technical, social, legal etc.

b) Preparing adequately and taking appropriate action for controlling, suppressing and extinguishing forest fires, in order to minimize the loss caused by them;

c) Educating local people about fire damage and eliciting their cooperation in preventing, controlling and extinguishing fires.

Preventive Measures

18.3.2 **Education, Publicity And Involvement of The Local People**: As the majority of forest fires are caused by man's negligence or his deliberate action it is necessary to educate the people through the press and radio, posters, films, lectures, demonstrations and personal contact. The way to prevent deliberate fire is to deny the benefits of grazing in such areas.

The provisions of section 7 of J&K Forest Act should be invoked to close burnt areas on demarcated forests for exercise of all rights and concessions so that it can act as a deterrent to the villagers. Efforts should be made to involve local people in fire protection works by forming Forest Protection Committees and giving them reward for their cooperation and assistance in organising preventive measures. Before the beginning of fire season arrangement should be made to put up notices in all conspicuous places, in every village, in vicinity of forests and also on roads passing through or leading to forests, that kindling and carrying of fire in forests is prohibited. The staff should hold regular meetings with local villagers in their areas to create awareness.

18.3.3 **Early Prediction of Dangerous Days :** Record of temperature, wind speed and humidity should be kept and analyzed to predict dangerous burning days. A temperature above 37°c is considered to be critical, above which the possibility of outbreak of fire increases.

18.3.4 **Burning of Fallen Needles and Inflammable Material:** The most economical and the surest way to prevent fire is to burn the inflammable material such as fallen needles, wood, shrubs, grass etc. before the onset of the hot weather. This operation should be repeated twice before the commencement of hot weather. In Chir areas, control burning should be carried out every year in February before the start of resin tapping operation. If it is not possible to carry out control burning in the entire fire sensitive areas, a belt of sufficient width should be control burned around important natural regeneration areas and other hazardous areas such as road sides, camp sites or recreational sites.

18.3.5 **Control Burning:** The Chir forms a thick bark at an early age, by virtue of which it can resist the effects of slow fire and this property is of great advantage and development of control burning. The burning should be thoroughly planned and organized and should be carried out under the supervision of competent officials.

All the forests must be isolated by clearing a strip of 1metre width of all inflammable material, leaves, bushes etc. to act as fire barrier during

the fire season. Grazing by cattle, should be permitted, in order to reduce inflammable material in the forests. It is most essential, that forests, allotted to Chir Working Circle are adequately protected against fire. The control burning is the most important operation and should never be neglected, The triennial programme for control burning is the most important operation and should never be neglected. The forest areas have been prescribed in full, however it is laid done that all the forest areas planted should not be controlled burnt, until the plants attain a height of 1.5 Meter, The detailed instructions on control burning are given under:

- The control burning should always be done during winters in January-February.
- Burning should progress from uphill to downhill in calm weather and special care should be taken, to keep the line of fire as straight as possible and under control.
- The fire should start along the ridge, a cleared path or especially cleared lines.
- Chir needles and other inflammable material should be fully raked to ensure through burning.
- In forests under resin tapping, it must be ensured that all chips, fallen resin, needles, etc. are cleared about 1.5 m away from the base of the trees by the resin labourers.
- Cleanings and early thinning in young regeneration areas must be completed before the control burning.
- Burning shall be done always under strict supervision and control of the executive staff and shall never be left to the engaged labour.
- The existing fire lines should be properly maintained and kept clear. The roads, bridle and inspection paths etc. must be kept clear of all inflammable material, so as to act as fire lines.
- Sufficient number of trained fire watchers should be employed during the fire season to help the field staff and provided with necessary

equipment's. No felling operations, even to the right holders, should be allowed during the fire season. It is, however, to be noted that areas under regeneration should not be control burnt, until the regeneration reaches a height of about 2.5 m. In such areas, however, the grass cutting/needle collection by right holders is encouraged.

The control burning will also form a part of control forms and deviation reflected therein should be explained very clearly giving valid reasons. In order to protect the forests, against fire risk, burning, and to maintain the sanitation of the forests, the following guidelines/steps are laid down:

- The inflammable/fire hazard material from the forests should be collected and disposed off during the winters.
- The job should be got done preferably, through the regular forest workers of concerned ranges.
- Collection of humus and other inflammable material should begun by raking from top of the forest and working downhill.
- Stacking in moderate heaps in open places or suitable Nallahs.
- Burning the heaps downhill so that the smoke does not interfere with men working below and reduces the risk of fire.
- Burning the heaps in rotation to reduce the heat.
- Burning operation should be carried out under the supervision of forest guard concerned.
- Steps should be taken to make it mandatory for right holders and Forest Corporation, to collect the felling refuse after felling trees into heaps or its removal from the forest should be specified.

18.3.6 **Fire Lines:** The existing fire lines be properly maintained and kept clear of all bushes, needles etc. to avoid any chance of fire, This Division has a very good network of State Roads, link roads, bridle/inspection paths passing along or through the majority of

forests. Hence, it is proposed that all such roads/paths and fire lines should be cleared off all inflammable material especially during the fire season, besides creation of temporary / permanent fire lines. On all the ridges and prominent spurs in Chir areas a 15 m wide fire line should be maintained

18.3.7 **Ristriction On Tarring Of Roads :** During fire season, tarring of roads in forest areas should be banned, as P.W.D staff/labour burns fire underneath drums of bitumen leading to wild fires.

Remedial Measures

18.3.8 Rapid detection is essential for quick suppression of fire. Vigil should be round the clock and for this at least three fire watchers are required to work in shifts of eight hours to man look out places on high ridges. The lookout observer should be equipped with binoculars, maps and record books. The occurrence of fire should be communicated to the headquarters quickly. . He should also inform the Sarpanch of the local Panchayat immediately, as well. In case of alarming situations, immediate help of various organizations like FPF, Army Cantonment Head Quarters, Fire Brigade, N.C.C., N.S.S. situated near the vicinity of each range can be availed. A Vehicle fitted with wireless set should be maintained at control/station to rush fire fighting crew to the spot. Tools required for firefighting like sickles, axes, spades and iron rakes should be arranged in sufficient numbers. It is suggested to have one fire fighting station at each Range headquarter. Each station should be equipped with fire extinguishers, axes; iron rakes sickles and a gang of laborers for the purpose of extinguishing fire. To mobilize local man power provision of section 48 of J&K Forest Act should be invoked. The labour force should be organized in sections of suitable strength each under the order of one man and given definite task. A couple of men should be kept in waiting to take messages and instructions to the various sections. In case the fire goes beyond control, it is necessary to localize it by counter firing. Counter firing should only be done under order of a senior officer in charge of operations and attempted from a defined line such as road or ridge or fire line. A line is formed along the

ridge by clearing the forest floor and cutting bushes and from this fire is started, so as to consume the fuel in advance of the oncoming fire. Wind direction and gradient should always be kept in mind, while counter firing. Roads/Paths are useful, provided, enough manpower is present. After the fire has been brought under control, the shouldering stumps should be extinguished by putting the dug earth on them and strict vigilance be kept till all dangers of fire spreading are taken care of. Arrangement for the transport of food; water and adequate firefighting tools are essential. The rolls of right holders, who helped to fight the fire, should be kept in record, so that the rights of defaulting right holders can be suspended.

Fire Report

18.3.9 After the fire is extinguished completely the burnt area should be surveyed and a map of the burnt area should be prepared on a scale of 1:50,000 and area computed. The cause of the fire should be investigated and damage assessed in detail. Then the fire report along with the map of the burnt area should be submitted to the Divisional Forest Officer, mentioning name of Block and Compartment in which the fire incidence took place. It should also include the correct area damaged by fire, cause of fire and the efforts made to trace the offender, if any.

Legal Provision

18.3.10 J&K Forest Act has two types of provisions viz :-

- For those who set fire to or kindle or carry fire in a demarcated forest area, and
- For those who are bound to assist in extinguishing fire but do not discharge their duty

The provision of section 6a & b of J&K Forest Act should be invoked to deal with the first category of offenders and section 49 for the second category of offenders. Section 50 of J&K Forest Act empowers the

Deputy Commissioner to take summary action in fire cases. At the time of fire in a forest, the attendance of Zamindars who assemble to put it out should be marked on the spot and a certificate of attendance to be given to those present.(Section 8 of Jammu Notice). A list of absentees should be prepared then and there.

18.4 Protection Of Forest Land From Encroachment

18.4.1 Encroachment of forest lands is the single biggest cause of destruction of forests and is formidable problem in the State. It is a common tendency of the people living either on the outer boundary of demarcated forests to displace or altogether remove boundary pillars to grab as much forest land as possible for cultivation. Encroachment is done in a very surreptitious and planned manner. Firstly the standing trees are removed by illicit felling or killing them by girdling and burning. This is the first indication of encroachment. Then the area is ploughed and some agricultural crop is raised. This goes on for some years. Often the encroacher in collusion with the *Pathwari* gets the piece of land recorded in his name in revenue records. If the area is large, the encroacher makes a hut as well to live in it. The absence of clearly demarcated boundary line is the most important factor responsible for encouraging encroachment. In such a state of affairs, the Forest Guard responsible for protection does not exactly know as to where the boundary line is. The lack of proper inspection of boundaries adds another dimension to the problem of encroachment. Absence of footpath along the boundary makes inspection of the boundary more difficult. The condition has deteriorated to such an extent that the Range Officers do not exactly know the number of encroachments in their range and the area involved. Absence of alternate employment for the land less or the people with very little land are the other factors responsible for encroachment. Delay in the detection of offence compounds the problem as it becomes difficult to prosecute the offender. The process is still going on without fear. The net result is the shrinkage of forest land. Because of poor condition or the absence of demarcation line, it was not possible to make any estimate regarding

forest area under encroachment. However major portion of the forest blanks around habitations are possibly under encroachment. The territorial staff should initiate the following preventive and remedial measures to identify and evict the encroachments.

Preventive Measures

18.4.2 The following preventive measures should be taken to reduce the chances of encroachment:-

- The forest areas near to the habitation which are highly vulnerable to encroachments with missing Demarcation files and boundary pillars are to be taken on priority for the reconstruction of boundary pillars and the demarcation files on war footing.
- In most vulnerable areas Toe wall fencing/ Chain link fencing needs to be erected.

- On the boundary serially numbered RCC pillars should be erected in such a way that the boundary between two successive pillars is a straight line and they are visible from one another. The description in Form-1 should give bearing from one pillar to the next and its distance. The boundary should be properly inspected by the Forest Guards at least twice a year, by Block Foresters at least once a year and the Range Officer must annually inspect one fourth of the boundary of his Range. The Range Officer should further submit a consolidated report on the basis of the inspection to the DFO.
- The DFO should as far as possible also inspect the boundary. Drastic action should be taken against defaulting officials. In order to ensure that inspection is regulary done, the difficulties of the staff in carrying out inspection should be removed by adopting the following measures:-

- The area of the beat should be so much that Forest Guards should be able to inspect the boundary at least twice a year after attending to all other works

- To enable the Forest Guards and other staff to inspect the boundary an inspection path should be constructed all along the boundary. It will act as a deterrent for possible encroachment

Remedial Measures

18.4.3 In order to get the encroached land vacated the following remedial measures should be adopted:-

- The cases of encroachment should be promptly detected. The forest Guards should immediately report the matter to his superiors who must take steps to inquire about the case and prepare a final report. Often the report of encroachment comes in the form of a complaint to some senior official. Because of the extreme miserable condition of the demarcation line, the Forest Guard does not know where exactly the boundary line is. In this situation, the Range officer usually writes to the revenue officials to ascertain, whether the land in question is a forest land or not. In this process a great delay is caused in initiating any action against the offender. For prompt detection of the offence, the boundary line should be districts and the records pertaining to the forest land should be complete in all respects. If the offender does not vacate the land, the case should be sent to the court within a month of detection.
- Any person encroaching upon the forest land or any person who erects a fence of an enclosure of any sort for cultivation or any other purpose should be prosecuted under section 6(f) of the J&K Forest Act. If the boundary pillars have also been altered or damaged the offender should be prosecuted under section 6(f) and or Section 35(c) of the J&K Forest Act.
- The sub- section 1 of section 48-A of J&K Forest Act empowers the Forest Officer not below the rank of DFO, to evict the encroacher, provided that the person supposed be evicted is given reasonable opportunity of showing cause as to why such order should not be passed. Any person aggravated by an order of the Forest Officer under sub-section1 of section 48-A may, within such period and in such manner as may be prescribed, appeal against such an order to the

Government Vide Forest Department Notification SRO 778/dated 1st November 1972. Government has made the provisions of section 48-A of J&K Forest Act applicable to the whole State. Vide Forest Department Notification SRO 777 the Government has authorizes the Chief Conservator of Forests to hear the appeal against the eviction order of DFO.

18.5 Protection Against Illicit Damage

18.5.1 Illicit damage of trees is caused by locals to either meet their domestic requirements or smuggle the timber to cater to the ever increasing timber market of the cities. No reliable data is available regarding the extent of the menace. It is the lack of willingness on part of everyone concerned, which has resulted in the sorry state of affairs. No effort has been made to stiffen the spine of Forest Guards. It is ironic that Forest Guards do not have a head-quarter in their beats. Most often they keep shuttling from their home place. This has resulted into poor patrolling of the forests. Since the Forest Guards have not been provided with weapons to defend themselves, it makes them vulnerable to threat from smugglers. Poor infrastructure of the department compounds the problem of forest protection. The illicit damages are confined to forests situated at fringe areas and its impact is more in the areas adjoining the thickly populated villages and least in the deep Forests. The Broadleaved trees are illicitly felled for firewood purpose. Oak trees are heavily lopped for fodder purpose.

Preventive Measures

18.5.2 The following preventive measures should be taken to reduce the chances of Illicit damage to the forests:-

- Intensive patrolling of the area.
- The important compartments with species of high economic value such as Deodar forest and other forest which are prone to illicit damages should be listed up. These compartments should be periodically checked by Divisional Forest Officer / Range Officer.

- The combing of forest compartments prone to illicit damage by specially formed squads of territorial field staff and Forest Protection Force periodically.
- Concentrated efforts have to be made to the misconception of the villagers who think of forests to be an un exhaustible natural resource. By constant publicity they need to be explained that the illicit felling wood eventually decrease the forest cover to a large extent in course of time which will have an adverse impact on their prosperity.
- The goodwill of people has to be earned, as mere publicity of the advantages of forests will not help. This goodwill of the people can be earned, by easy and quick supply of forest produce in form of rights and concessions and meeting the genuine demand of villagers.
- The illegal activity should not be encouraged as a mean of livelihood.

Remedial Measure

18.5.3 The remedial measure involves legal action against the offender as per the J&K Forest Act.

18.6 Protection Against The Damage Caused By Pests & Diseases

18.6.1 The pests and diseases form an important part of biotic factors affecting forest tree species. They cause damage to forest trees and also to the seedlings in nursery. Usually forest managers ignore the pests and disease. But the recent epidemics of Sal borer in Madhya Pradesh and Deodar defoliator in Himachal Pradesh are stern warnings to forest managers. It is very important to monitor forest pests and diseases in each division. In nurseries and plantations the insect pests causes serious damage and is a common occurrence every season. The negligence leads to loss of precious resources and time. In Udhampur Forest Division Insect attack is not so common in this Division. The attack by Foams pini on Kail crop can be seen in Pancheri Range. Kail is attacked by Armi (*Arceuthobium minutissimum*) but the damage is not so appreciable.

Control Measures

18.6.2The following control measures can be taken to prevent the damage :-

- **Silvicultural Control:** - It involves right choice of species, crop composition, thinning, hygienic fellings and fire.
- **Biological Control** :-
  - By use of natural enemies of pests and insects
  - By use of species which improve environmental resistance to pests. This method consists of release of parasites and predators which feed on the insect pest.
- **Chemical Control** :- Involves the use of chemicals to kill the pests.

S.No.	Name of the Post	Control Measures
1	Chirpine defoliator (Lebeda nobilis)	Aerial spray of fenitrothion @ 1 liter per hectare.
2	Termites (Sissoo, khair, Siris, Phulai etc)	Spray seedling, young plants with 0.0.2% Aldrin or BHC in water or incorporate 300 g of 1% dust per cum soil at the time of planting.
3	Chafers	Dipping roots of seedlings in 1% Aldrin before planting
4	Poplar defoliators (Pygaera species)	0.1 % carbyl or fenitrothien or 0.04% enclosulton in water should be sprayed on leaves.
5	Sissoo defoliater (Plectoptrera reflexa)	0.1 % carbyl or fenitrothien spray on foliage.
6	Semal shoot borer (Tonica Niviferana)	Young plant should be sprayed with systematic insecticides like Rogar bidrin

- **Mechanical Control –** It invoves
  - Hand collection and destruction
  - Trapping

The disease management is nothing but the selection and use of

appropriate techniques to suppress diseases to a tolerable limit. The management aims at increasing productivity and reducing cost of production. The main management practices employed for the control of forest diseases are. Quarantine regulations choice of species, choice of planting site, sanitation, removal of alternate hosts, silvicultural and other cultural practices, solarisation chemical control measures and' use of resistant plant material.

18.7 Compartments Of Udhampur Forest Division That Need Special Forest Protection Measures

Udhampur Range*:* 7U,8U,13 U, 16 U,62U,66U,68U,79 U,86U,89U,93U,95U

Panchari Range: 8P, 20P, 24P, 35P, 42P, 53P,

Dudu Range*:* 87c D, 88D, 89D, 98D, 101D,

CHAPTER-XIX

Plantation Working Circle (Overlapping)

CHAPTER-XIX

Plantation Working Circle (Overlapping)

19.1 General Constitution of the Working Circle

This Working Circle will overlap all other Working Circles and is constituted for the first time in Udhampur Forest Division as mandated by the Working Plan Code. This will include all the degraded forests areas of those compartments which are situated near habitations and are prone to heavy biotic interference and poorly stocked. The main aim of creating this working circle is to pay special attention to the rehabilitation of degraded areas keeping in view the bonafide requirement of the local people

19.2 General Character of Vegetation

Since this circle is an overlapping working circle, the general character of vegetation has been already discussed in major working circles. However, due to excessive biotic interference the density of these areas has decreased drastically. Due to excessive lopping and browsing fodder yielding species have become malformed and stunted growth. The regeneration is negligible. The palatable bushes and grasses have been replaced by unpalatable thorny bushes and grasses.

19.3 Special objects of Management

Plantation working circle has been constituted keeping in view the following objects:

1. To conserve and preserve soil and moisture contents.
2. To rehabilitate the degraded fringe forest areas.
3. To increase the green cover around the habitations.
4. To meet the local demand of fuel, fodder and small timber.
5. To reduce the pressure on natural forests by creating buffer zones between villages and natural forests.

19.4 Area of Treatment

The working circle wise area proposed to be treated annually is tabulated in below Table No.

Table19.1

S.No.	Working Circle	Area in hectares
1	Deodar-Kail Selection Working Circle	216
2	Fir Selection Working Circle	159
3	ChirSelection Working Circle	239
4	ReboisementWorking Circle	500
	Total	**1114**

The annual treatment plan is left at the discretion of Divisional Forest Officer.

19.5 Treatments proposed

A multidimensional approach is required to be initiated with a missionary vision in order to rehabilitate these forests and bring them back to their old glory by involving the habitants who reside in vicinity of these forests. The main focus of rehabilitation is to increase the vegetal cover of existing forest, conserve and preserve soil and moisture contents, besides fulfilling the day to day requirements of fuel and fodder of local inhabitants. These degraded forests can be treated keeping in view both short and long term measures, so that local inhabitants who get involved in rehabilitation of these forests gets immediate benefits such as fuel, fodder, collection of NTFP raised in these areas (especially shoot/fruit portion) and small timber. The long term benefits such as sharing of major forest produce. The measures proposed to the adopted are as follows:

1. Closing of area by barbed wire with P.C.C. posts or / chain link fencing with angle iron.

2. Planting of exotic / local fast growing fodder yielding species.
3. Planting of conifers after two to three years depending upon the site.
4. Planting of medicinal herbs, shrubs and plants.
5. Planting/ sowing of grasses having good fodder value.
6. Construction of dry rubble stone missionary (DRSM) check walls, stone filled mesh wire crates and water harvesting structures in order to conserve, preserve and increase soil and moisture contents of the area.
7. Construction of permanent fire lines around the plantation areas.

19.6 Choice of Species

Since Udhampur Forest Division has a vast altitudinal variation so a wide range of flora from alpine zone to sub-tropical zone are existing. Such as Deodar, Kail, Fir, Spruce, Chir, *Acacia catechu* (wood used for extraction of katha), *Aesculus indica* (good fodder tree of temperate zone), *Berberis lycium* (rasount), *Buxus wallichiana* (timber used for making toys and wood carving), *Dalbergia sissoo* (Timber value), *Dioscorea deltoidae* (Medicinal value), *Grewia optiva* (best fodder yielding tree of sub-tropical zone), *Olea cuspidate* (Fodder tree of sub-tropical and temperate zone), *Punica granatum* (Fruit edible having medicinal value also), *Quercus species* (Fodder value timber used for agricultural implements and fuel wood), *Rubina pseudoacacia* (Fodder value), *Trifolium pretense* (Red clover grass, good fodder value), *Trifolium repens* (white clover grass, good fodder value).

19.7 Regeneration Programme

The success of any treatment given to the crop, depends largely on the efforts put in to regenerate The forests in due course of time. It is very difficult to regenerate these forests naturally, except in a very limited area where biotic interference is either minimum or absent. Almost all

the forests are under heavy biotic pressure. The heavy uncontrolled and unrestricted grazing is one of the two main reasons for failure of the forest areas to regenerate. Every passing year, the areas deficient in young regeneration are expanding.

Effective closure and strict fire protection, till the regeneration is established,are the two most important measures for the success of any regeneration programme. In most of the areas bearing scant crop, a mere effective closure along with adequate protection against fire will be sufficient to regenerate such area. The crop in such areas can be supplemented with artificial sowing or planting. The areas which are unlikely to respond to the close, should be taken up for direct sowing in patches and planting of seedling raised naked rooted/ polythene bagged plants.

19.8 Nursery and Plantation Technique Of Some Important Species

19.8.1. *Dalbergia sissoo (shisham)*

Occurrence: It occurs in sub-Himalayan tract upto an altitude of 900 meters.

Seed: The pods ripen from end of November to early January.

Seed Weight: It weighs 53 seeds per gram.

Nursery Technique: Seeds are sown in nursery beds in drills in February / March, if plantation is to be carried out in ensuing monsoon and in July when the plantation is to be carried out in next monsoons. During summer proper weeding and watering is carried out.

Planting Technique: The plants are planted in pits of size 45 cm x 45 cm x 45 cm at a spacing of 3 m x 3 m. In earlier stages it is sensitive to drought but at later stages it is drought

resistant. It is a good coppicer and produce root sucker freely.

19.8.2*Dendrocalamus strictus (Bamboo)*

Occurrence: It occurs in North India upto 900 meters, It is frost hardly and extremely drought resistant.

Seed: Seed ripen from April to June.

Seed Weight: It weighs 32 seeds per gram.

Nursery Technique*:*The seed is sown in nursery beds in drills made 15 to 20 cm apart in June and covered with soil lightly. The germination starts in a week. The 8 cm seedlings are transplanted in poly bags which contain mixture of farm yard manure (FYM) and Soil. Proper weeding and watering is carried out during summer.

Planting Technique: One year old poly bagged plants are planted in the field in pits of size 45cm x 45cm x 45cm at a spacing of 3cm x 3cm.

19.8.3*Populus Species:* Popular is a genus mostly found in Northern hemisphere. It is fast growing, reproduce vegetatively and hybridize freely. It is a strong light demander and require moisture.

Nursery Technique: Popular cuttings of about 20 cm in length are planted at of 80 cm x 60 cm in nursery beds in December – January and nursery beds are flooded with water. Periodically weeding and watering is carried out.

Planting technique: The entire plants with naked roots are planted in pits of size 45 cm x 45 cm x 45 cm at a spacing of 2m x 2m.

19.8.4*Robinia pseudoacacia (kikar)*

Occurrence: It is native of north America and can grow at an elevation between 1500 to 2000 meters.

Seed: The seed ripen in the month of October-November.

Seed Weight: It weighs about 33 to 77 seeds per gram.

Nursery Technique: Seed is sown in Nursery beds by broad casting or in lines 20 cm apart. Depth of sowing should be about 1.5 cm. Germination starts in a week. Proper watering and weeding is done.

Planting Technique: After 8-9 months entire plants can be planted in pits of size 45 cm x 45 cm x 45 cm at a spacing of 2.5 m x 2.5 m and plantation area be closed for grazing.

19.8.5*Aesculus indica (Horse Chest Nut)*

Occurrence: It occur at an altitude between 1200 to 2700 meters in moist shady locations.

Seed: It ripens in September-November.

Seed Weight: It weighs about 640 seeds per kilogram.

Germination Capacity*:* 70 to 90 percent.

Nursery Technique*:*Seed sowing is done in shady and cool nursery beds. Sowing be done 5cm below the soil in drills 15 - 30 cm apart. Periodic weeding and watering is done.

Planting Technique: Seedlings with naked roots are transplanted during winter in pits of size 45 cm x 45 cm x 45 cm at a spacing of 2 m x 2 m in moist and shady areas.

19.8.6***Terminalia chebula***

Artificial regeneration is generally brought about by sowing. The seeds are soaked in moist manure for 3-4 days, prior to sowing. Thereafter,

sowing is done in mounds in patches or lines. Germination may take about three weeks or even more.

19.8.7*Acacia catechu*

a. **Direct sowing:** Seeds are soaked for about 24 hours in water or kept in cowdung. Broadcast or line or patch sowings are carried out.

b. **Planting :** Six to eight month old Khair seedlings which have been raised in the nursery, are transplanted in the rainy season.

19.9 Compartments That Need To Be Taken Up For Plantation Programme

In Udhampur Forest Division

Udhampur Range*:* 18,19,45,51,53,79,80,86,87,91,93,94

Panchari Range: 2,3,4,10,31,32,35,41,46,52,57,58,59,64

Dudu Range*:* 1a,1b,2,3c,6, 28,31,48,53,57,58,59,82,,85,86,87d, 90, 92,94,96,97,110c

Details of the areas to be taken up for Plantation Year Wise/Range Wise

Udhampur Range		
Compartment	**Area (In Ha)**	**Year**
18	97	2015-16
19a	136	
19b	148	2016-17
45	253	2017-18
51	90	2018-19
53a	55	
53b	104	2019-20
79a	91	2020-21
79b	96	
80	146	2021-22
86a	122	2022-23
86b	74	2023-24
87a	41	
87b	111	2024-25
91	86	
93	133	2025-26
94	59	

Panchari Range		
Compartment	**Area (In Ha)**	**Year**
2	153	2015-16
3	325	2016-17
4a	426	2017-18
10	140	2018-19
31	239	2019-20
32	83	
35	312	2020-21
41	79	2021-22
46	156	2022-23
52	276	2023-24
57	369	2024-25
58b	210	2025-26
59b	110	
64	146	

Dudu Range		
Compartment	**Area**	**Year**
1a	548	2015-16
1b	44	2016-17
2	367	
3c	237	2017-18
6	188	
28	241	2018-19
31a	106	
48	156	2019-20
53	187	
57	95	
58	78	2020-21
59	295	
82	256	2021-22
85	139	
86	275	2022-23
87d	90	
90	51	
92	103	2023-24
94	126	
96	150	2024-25
97	191	
110c	241	2025-26

CHAPTER-XX

Joint Forest Management

CHAPTER-XX

Joint Forest Management

Need To Involve Local Communities In Protection & Management Of Forests

20.1.1 Private land holdings in the Division are small and fragmented. Cultivation is mainly dependent on rainfall. Irrigation facilities are scarce which results in poor crop yield. Only a few large farmers produce sufficient food grains to meet their year round requirements. In other words the majority is not able to meet their year round requirements. Agriculture is unable to meet even subsistence needs of the village communities. To bridge this gap most of the people are dependent on the forests. This is manifested in large holdings of goat and sheep to supplement household income, because the cost involved in their upkeep is negligible. Goats and sheep's are left open on the forestlands and village common lands for grazing purpose. The demand for timber, firewood and other forest produce is increasing day by day as a rest of the population explosion. On the other hand the commercial exploitation of forests in the past for timber has seriously damaged the forests. In addition the efforts to regenerate the forests are not sufficient. The encroachment on these forest lands is a serious issue as well. The situation has led foresters, social scientists planners and NGO's to conclude that there is a fundamental need to involve local communities in protection and management of forests. The primary object of forest management in the present scenario should be towards increasing the supply of goods desired by people and forest dwellers. Preferred species in the forests areas should be grass bushes, shrubs and other NTFP yielding species instead of exotic commercials.

20.1.2 The participatory management requires empowerment of individual community groups with specific rights and responsibilities on a sharing basis. The cooperative sharing of rights and responsibilities helps in managing the forests in a much better way and helps in reducing the gap

between the Forest Department and the people dependent on these forests. Under this management strategy the local communities shall be involved from planning to the implementation of various forest developmental works coupled with the sharing of benefits mutually. Forest operations like thinning, weeding, grass cutting etc. shall be implemented with the active involvement of the local communities. They shall be associated in protection, management and regeneration of forests in lieu of 50% share of the major harvest, besides free collection of grass, fodder dry and fallen wood, pruning, and thinning. Joint Forest Management will help in regaining the trust of the forest communities which will ultimately lead to the achievement of objectives of the department as well as the local communities. Ultimately both the parties will benefit from the regeneration of the forests.

Role Of NGO's In Participatory Management.

20.2.1 The NGO's can play a supportive role in assisting the Forest Department and local communities to develop joint participatory management programmes. Forest communities and forest filed staff may need assistance in organizing meetings to discuss how to form forest management communities. As forests regenerate, an increased supply of Non Timber Forest Products can create improved opportunities to process and market goods. Here the NGO's have a major role to motive people.

The Scheme of JFM was adopted in the state of Jammu & Kashmir in the year 1992.

Jammu And Kashmir Government order on JFM

20.3.1 Realising the necessity of active participation of local people in regeneration, maintenance and protection of plantations done for Afforestation and rehabilitation, the J&K Government vide SRO-61 of

1992 at 19-3-1992 notified the J&K (Rehablitation Of Degraded Forests and Village Plantation) Rules 1992 which states as under :-

"Whereas certain areas in the demarcated forests have been identified as degraded forests, and

Whereas it is necessary to afforest the waste Khalsa land not under cultivation for the benefit of agriculture and agriculturilists and to prevent denudation and soil erosion in such areas, and

Whereas raising of village woodlots in these areas is necessary to meet the fuel fodder, fibre and small timber requirement of the local people, and

Whereas active participation of local people is vital for regeneration , maintenance and protection of plantation done for Afforestation and rehabilitation as aforesaid.

Now , therefore the Government in exercise of the powers conferred under sections 5 and 14-A of the Jammu & Kashmir Forest Act, Svt 1987 (Act No. II of 1987) is pleased to make the following rules.

THE JAMMU AND KASHMIR

(Rehabilitation Of Degraded Forests & Village Plantations) Rules, 1992.

Chapter - I

1**. Short title and commencement** :-

(1) These rules may be called the Jammu and Kashmir (Rehabilitation of degraded Forests and Village Plantation) Rules, 1992.

(2) These shall come into force from the date of their publication in Government Gazette.

2**. Definitions :-**

In these rules unless the context otherwise requires the words and expressions used shall have the same meaning as assigned to them respectively in Jammu and Kashmir Forest Act, Svt 1987.

Chapter - II

Village (Rehabilitation Of Degraded Forests) Committee.

3. **Composition :-**

i. There shall be constituted a village (Rehabilitation of Degraded Forests) Committee for each village or group of villages for the purpose of protection and management of degraded forests.

ii. People residing at the edge of degraded forests shall form the basis of membership of the village (Rehabilitation of Degraded Forests) Committee.

iii. One adult male / female member of each independent household residing at the edge of degraded forests shall have the right to become member of a village (Rehabilitation of Degraded Forests) Committee. The Block Forester and / or Forest Guard shall verify the membership of all members of village (Rehabilitation of Degraded Forests) Committee within their area of jurisdiction.

iv. Each village (Rehabilitation of Degraded Forests) Committee shall have an Executive Committee of 11 to 15 members (including at least two women and three members from Scheduled Caste / Scheduled Tribe / Backward Classes), a representative of nomads and two members from each Panchayat falling under the jurisdiction of Village Committee to be nominated by the Sarpanch to carry out the task of such committee. The Patwari of the halqa shall be ex-officio member of Executive Committee.

v. The members of Executive Committee shall be elected once in three years by the respective village (Rehabilitation of Degraded Forests Committee). In the event of any default by the Executive Committee in the performance of its duties fresh elections shall be held by the said

committee. The concerned Range Officer / Block Forester shall be returning officer for conducting such elections.

vi. The Executive Committee shall select one of its members as Chairman and also chose a treasurer amongst themselves.

vii. The concerned Block Forester / Forest Guard shall act as member-Secretary and shall be responsible for assisting the village (Rehabilitation of Degraded Forests) Committee to co-ordinate its activities with other Government Departments and shall also be responsible for the maintenance of records of the concerned committee.

viii. Constitution of all the committees under these rules shall be subject to the approval of concerned Divisional Forest Officer (Territorial) or Divisional Forest Officer, Social Forestry, as the case may be.

ix. If any inclusion or change in the Village (Rehabilitation of Degraded Forests) Committee or executive committee is necessitated after its initial constitution, the executive committee shall make the recommendations to the Divisional Forest Officer (Territorial) Divisional Forest Officer, Social Forestry as the case may be, whose decision shall be final.

4. <u>Meetings:</u>

The Member Secretary of the Executive Committee shall convene at least 2 formal meetings of the Executive Committee and one meeting of the general body in a calendar year".

5**.** **<u>Supervision</u>** :

District level policy review committee shall supervise and review working of all the committees and shall consist of :-

a). Dy. Commissioner of the concerned District - Chairman

b) All the Division Forest Officers both - Members
Territorial as well as Social Forestry of the District.
c) Three prominent non-govt; officers includes two panches of the area to be nominated by the Dy. Commissioner. - Members.

6. **Agreement :**

The village (Rehabilitation of Degraded Forests) Committee shall enter into an agreement with the Divisional Forest Officer (Territorial), or Divisional Forest Officer Social Forestry, as the case may be, in terms of the conditions agreed upon by the parties. The Agreement shall be in the Form "A" appended to these rules.

7. **Functions:** The Village (Rehabilitation of Degraded Forests) Committee shall perform the following functions, namely :-

a. To associate the Social Forestry Department / Forest Department, as the case may be, in protecting the Social Forestry / Forest Department Plantations through the members of the committee.

b. To inform Forest personnel of any person or persons attempting trespass and willful damage to the Social Forestry/ Forest Department plantations or commit theft thereon;

c. To associate Social Forestry/Forest Department in preventing such trespass, encroachment, grazing, fire, theft or damage;

d. To associate Social Forestry/Forest Department in smooth and timely execution of all plantation works taken up in the Degraded Forests;

e. To associate the concerned Social forestry/Forest Department Officials in selecting/engaging labourers required for plantation works;

f. To associate in harvesting of the plantation by the Social Forestry/Forest Department.

g. To associate the concerned Social Forestry/Forest Department officials in the distribution of the usufructs among the members of the village (Rehabilitation of Degraded Forests) Committee as per-the register of members maintained by the Committee;

h. To associate in preventing any activity done at the plantation site in contravention of the provisions of Jammu and Kashmir Forest Act, Svt. 1987 and the rules made there-under;

i. To report about activities of a particular member which are prejudicial and detrimental to the interests of plantation, to the concerned Range Officer which may result in cancellation of membership of the erring member;

j. To associate with Forest Officials to take action or proceed under J&K Forest Act, Samvat 1987 (Act No.II of 1987) and the rules made there under against the persons involved in Forest offences in Degraded Forests; and

k. To evolve procedure in consultation with Social Forestry/ Forest Department Officers to be adopted by its members for collecting produce

such as fodder, grass, dry and fallen wood from the plantation site in a manner which ensures sustainable yields of such produce from the area.

8. **Termination** :-

The Divisional Forest Officer or any Range Officer authorized by the Divisional Forest officer in this behalf may take action including termination of the membership against any member who has failed or neglected to perform his functions under these rules.

9. **Appeal**:

(1) Any person aggrieved by the order made under rule 8 may, within 15 days, prefer an appeal to-

a. The Divisional Forest Officer against an order of Range Officer,

b. The Circle Conservator of Forests/ Regional Director. Social Forestry concerned against the order of Divisional Forest Officer.

(2) The Order passed under sub-rule (1) shall be final.

10. Maintenance of Register:

(i) The village (Rehabilitation of Degraded Forests) Committee shall maintain a register showing necessary particulars of beneficiaries who are members of the Committee, e.g;

a. Name b. Father's Name c. Address d. Age e. Members of the family f. Name of the nominee.

(ii) The nomination forms duly filled in and approved by the Executive Committee should be pasted in the register. Such registers are also to be maintained in the concerned Range Office of the Social Forestry/Forest Department for permanent records.

(iii) Each members of the village committee provided with a pas book showing therein details as at sub-rule(1) above. All the benefits derived by the members shall be entered in the pass book at the end of each financial year and shall be duly authenticated by the concerned Block Foresters."

11. **Proceedings**:

The village (Rehabilitation of Degraded Forests) Committee shall maintain a "Register " where-in proceedings of the meetings of the Executive

Committee held from time to time as well as proceedings of the annual general meetings of the village (Rehabilitation of Degraded Forests) Committee will be recorded under the signature of the Chairman of the Committee and such minutes duly attested shall be sent to the concerned Range Officer for record.

12. **Sharing of harvest**:-

1) The committee in consultation with all the members will determine how to share 50% of the proceeds from each major harvest of the plantation in kind or the sale proceeds of the produce of the plantation of degraded forests amongst members".

(2) The Village (Rehabilitation of Degraded Forests) Committee may generate common village fund in the name of committee by sale of surplus interim produce or from the share of the sale of major produce and keep the deposit in any of the Scheduled Banks to be utilized for the welfare of villagers. The bank account/accounts would be operated upon by the Chairman, the secretary and the treasurers only".

13. **Works** :

(1) An Agreement specifying the rights and responsibilities of all parties shall be signed before commencement of any works in the plantation.

(2) The content of the works to be undertaken shall be decided in consultation with the village (Rehabilitation of Degraded Forests) Committee.

14. **Usufructary benefits** :-

(1) The Block Forester / Range Officer in consultation with the Execution Committee and with the approval of the Divisional Forest Officer concerned will distribute to the beneficiaries their proportionate share of usufructs from the final harvesting, not before the crop attaining the age of 10 Years.

(2) The members shall be entitled to collect free of royalty, without causing any damage to the plantation, grass, fodder, dry and fallen wood, pruning, thinning etc. with the permission of Block Forester.

(3) The members will have to assist in protecting the plantation to be eligible for sharing of usufructs under these rules.

(4) The members will not be entitled to trees produce from trees preserved under Jammu and Kashmir preservation of specified trees Act 1969 (V of 1969).

(5) An individual whose membership stands terminated under any of these rules shall not be entitled to benefit / sharing of usufructs under these rules.

15. **Reviews**:-

The major rights and responsibilities of village (Rehabilitation of Degraded Forests) Committee and Executive Committee will be reviewed by principal Chief Conservator of Forests / Chief Conservator of Forests (Project Director) Social Forestry Project annually.

Chapter - III

Village Plantation (Protection And Management) Committee

16. **Composition** :-

There shall be constituted a village plantation (protection and management) committee in a village or group of villages for the purpose of protection and management of such waste lands / un-demarcated forests and khalsa sarkar lands as are not included in demarcated forests. The composition and other conditions regarding membership and election of the committee shall be the same, as provided for village (Rehabilitation of degraded forests) Committee".

17. **Meetings:**

(1) The Committee will meet at such place as may be convenient to members or in such villages where such plantations are to be raised on the dates that may be notified by the Chairman.

(2) The committee will in consultation with people of the village concerned select area as required for the benefit of the villagers, their Cattle and agriculture and for prevention of denudation and soil erosion.'

(3) The committee will open a file in each case in which the statement of villagers, the points agreed upon and the decision of the committee are recorded in the form of a resolution in the following manner.

a. Description of boundaries of the area to be covered.

b. The produce to be removed by the villagers.

c. Acts that are prohibited,

d. Regulation on closure of grazing.

(4) All points of disagreement between villagers, objections, claims and rights will be heard, discussed and eliminated by the committee before a final decision is recorded which should be signed by all members.

(5) The rules of protecting the Forest will be the same as provided for in the Forest Act, Samvat 1987. Similarly the concessions as granted in Jammu and Kashmir Forest Notices will be availed of by the villagers.

(6) The file be then handed over to the Revenue Official who will get the area demarcated through villagers by means of boundary pillars of the same type as Forest boundary pillars. Patwari halqa will prepare a map of the area and demarcate the same on the ground through villagers.

(7) The file be submitted to the Deputy Commissioner through the Divisional Forest Officer concerned

(8) Notification will be issued by the Deputy Commissioner under Chapter III-A of the Forest Act. The file will then be returned to the Divisional Forest Officer concerned with a copy of the Tehsildar of the area

18. **Functions**:

(1) The village plantation (Protection and Management) Committee will enter into an agreement in terms of resolution arrived at and sanctioned by the authority with Divisional Forest Officer, Social Forestry Wing of the area. The agreement shall be as per Form "B" appended herewith.

(2) The village plantation (Protection and Management) Committee will then enforce the rules framed for the protection of the area and regulation of concessions, benefits and grazing rules as sanctioned in the file.

(3) In case of an act, concession or benefits not specifically provided in the rules as sanctioned in the file then village plantation (Protection and Management) Committee will enforce rules formed under Jammu and Kashmir Forest Act, Samvat 1987.

19. **Supervision:-**

The functioning of the Village Plantation (Protection and Management) Committee shall be subject to the supervision and review of the District Level Policy Review Committee constituted under rule. 5.

20. **Motivation of villagers**:-

The Deputy Commissioner and the Divisional Forest Officer of the District in which these rules are made applicable will discuss and explain the advantages of the scheme to the villagers in their respective jurisdictions and watch the work of the village plantation (Protection and Management) Committees and report their progress to the Divisional Commissioner and Regional Director/Conservator of the province respectively.

21. **Grazing:**-

The area should usually be closed to grazing when closure of the whole area is not possible, as much of the area as can conveniently be closed for a number of years, should be closed.

22. **Joint Management**:

(1) For the joint management of the area, a development cum-management plan will be prepared by the Social Forestry in collaboration with villagers.
(2) If the villagers undertake to carry out a programme of sowing and plantation, it will be done under the joint management of the of the Social Forestry Department and the villagers.

23. **Cost of Planting, Maintenance and Protection**:

(1) Cost of planting, maintenance and protection would be borne by the Social Forestry Department for the first five to ten years but the local population will participate in protecting the plantation. Thereafter the management and protection of the plantation will be the responsibility of the village plantation (Protection and Management) Committee.

(2) The Social Forestry Department will continue to monitor and control the management of the plantation even after management and protection has been taken over by the village committee.

(3) At each major harvest after establishment to the plantation, Social Forestry Department will recover 25% share from the sale of fuelwood timber or poles and 75% of cash balance will be given to the village plantation (Protection and Management) Committee.

(4) The Village Plantation (Protection and Management) Committee may generate common village fund in the name of committee by the sale of exertive interim product or from the share of the sale of major produce and keep the deposit in any of the scheduled banks to be utilized for the welfare of villagers. The Bank Account(s) would be operative by Chairman, Secretary and the Treasurer only.

24. **Distribution of Funds**:

The village plantation (Protection and Management) Committee will utilize the funds either for replanting the area or for financing the establishment of additional village woodlot or for financing public works

in the village/ villages (i.e., construction or water supply, village roads etc.)

25. **Usufructs and Benefits**:

(1) The villagers will be entitled to collect grass, fallen wood and tree loppings from the plantation area as provided under the Kashmir Notice for Kashmir province and Jammu Notice for Jammu Province.

(2) Social Forestry Department acting through its field staff will encourage villagers to participate in establishing village woodlots by explaining the benefits to be obtained from community plantation and assist village plantation (Protection and Management) Committee and village (Rehabilitation of Degraded Forests) Committee in demarcating areas of waste land on which plantation is to be done.

Chapter - I V

Repeal And Saving

26. All rules and orders corresponding to these rules in force immediately before the commencement of these rules are hereby repealed:

Provided that all rules and orders made, permits, license and passes granted, fees levied, imposed or assessed proceedings instituted and all actions taken or things done under any of the rules or orders inforce before the commencement of these rules shall be constituted to have been made, granted, levied or done under the corresponding provisions of these rules.

Implementation of Joint Forest Management In Udhampur Forest Division

20.4.1 All compartments of the Division bearing degraded forests have been identified and allocated to Rehabilitation Cum Reboisment Working Circle. Village (Rehabilitation of Degraded Forests) Committees have been constituted in all the three Ranges for the purpose of protection

and management of forests. The objective is to afforest the waste khalsa lands not under cultivation to meet the fuel, fodder, fibre and small timber requirements of the local people. In addition the Social Forestry Department has effectively involved people in protection and management of the forests of the Division.

The Detail Of Village Forest Committees Of Udhampur Forest Division

Table 20.1

20.5.1

Udhampur Forest Division			
S.No.	**Name of VFC**	**S.No.**	**Name of VFC**
1	Latti Chapper	18	Rakh Thanoa
2	Pachound	19	Proa Jagir
3	Garian Kalan	20	Thanoa
4	Sira Marothi	21	Jakhed
5	Galiote	22	Chapper II
6	Nalli Nikka	23	Pattan Matlowa
7	Lalli	24	Gharian Khurd
8	Kultair (P)	25	Panjar
9	Katti (P)	26	Kalsote
10	Ossu	27	Mongri
11	Laddan	28	Latyar
12	Mand	29	Chulna
13	Tikri	30	Charat
14	Balli	31	Bhati
15	Himbra	32	Pangra
16	Thanidhar	33	Rakh Neranal
17	Sourap		

Sustaining People Interest in JFM

20.6.1 To regain the trust of people and for providing greater security to the people that they will benefit from protection related works, following measures will have to be under taken:

a. To ensure the sustained economic stake of the people in protection of closures, management action will have to be taken to ensure continued availability of fodder, grass or any other valuable produce from the closures. To meet the multiple needs of the people Multiple Product Forestry will have to be practiced. To achieve this objects.

   i. Silvi-pastoral model will have to be evolved in RDF (Rehabilitation of Degraded Forests) areas and spacing of trees will have to be increased. To maintain the fodder grass output, canopy manipulation or thinning operations may have to be undertaken.

   ii. Non-Timber Forest Produce yielding species will have to be planted alongwith the main species of the tract.

b. It is imperative to extend the provisions of the JFM rules to the core forest areas also which are predominantly coniferous. Since it will not be wise on the part of department to alter the composition of forests and plant fuel, fodder species in coniferous forests, effective arrangement will have to be evolved to make JFM attractive to the people. Only vested interest in the tree stands can assure its protection and growth. Economic returns from forest must sufficient income to sustain people's interest over time. Mechanism should be evolved for sharing the yield from thinning and timber extraction. However following measures can be taken by department without any difficulty.

   i. Simplification of the procedure for obtaining timber to generate goodwill among people.

ii. Raising of NTFP yielding species forming ground flora in these forests.

iii. Development of appropriate linkages with other departments engaged in rural development e.g. Horticulture, Agriculture, Animal Husbandry, Soil Conservation and District Industries Department.

c. For success of JFM, equity and openness will have to be maintained. The distribution of costs as well benefits will have to be acceptable to the people.

d. To ensure genuine involvement of all sections of the user community membership of the executive committee and Chairmanship should be rotated. Regularity in meetings of executive committee and of general body where all relevant information is presented will ensure involvement of people and openness in transaction of business.

CHAPTER-XXI

Water Shed Management

CHAPTER-XXI

Watershed Management

Inroduction

21.1.1 Realization of the relationship of plants, soil and water to land management and the imperative need to integrate activities of various departments engaged in rural development to make tangible impact on the overall economy of the watershed has lead to the adoption of the new concept of Integrated Watershed Development.

21.1.2 Watershed is a natural unit draining run off to a common point. Adoption of watershed as a unit of planning for planning and management has got definite advantages over village because watershed is more discreet geographical entity and it ensure the treatment is co-ordinated and undiluted. The impact of development project can be evaluated and monitored in a more effective way.

21.1.3 The root causes of any watershed destruction are ignorance and economic backwardness of its people. This lead to :

i) Cultivation without adequate soil and water conservation steep slopes.

ii) Maintenance of large number of unproductive livestock which overgraze and

iii) Destroy forests and pasture lands.

iv) Land building and other land changing works without adequate conservation measures.

v) Destruction of forests by kindling fire under the belief that it will produced fresh flush of green grass.

Objectives Of Watershed Management

21.2.1 The main objectives of Watershed Management are:

1. The economic development of watershed community through optimum utilization of watershed natural resources like land, water and vegetation that will prevent further ecological degradation.

2. To protect the enhance water resources, moderate floods and reduce silting up of reservoirs, increase irrigation and conserving rain water for sustained agricultural production.

Codification Of Watershed

21.3.1 The Udhampur and Dudu Range form part of Tawi catchment and are drained by various tributaries of Tawi . Prominent among them are Deodi nalla, Margana nalla, Dewak, Gorikund nalla, Ghanku nalla, Smel nalla, Dudilla nalla, Suralli da nalla, Pharos, Pich, Kalikund, Magrid, and champ Nalla. Dudhar, Maddal, Devak, Birwahn and Champal Khads.

21.3.2 Panchari Range form part of Painthal catchment and Manidal khads which ultimately drain into river Chenab . Prominent tributaries of Panithal are Nabi Khad, Yubu khad, Kanji khad, Mainga khad, Sumni Khad, Poni khad, Kundhar nalla, Dunan Khad.

21.3.3 As per the guidelines laid down by all india land use survey organization, J&K soil conservation Department has delineated the catchment jupto micro-watershed level. Under this system, following watershed stages have been made:

Particulars	**Codified as**
1. Water Resource Regions	1 to 6
2. Basins	A,B,C,D etc.
3. Catchments	A,B,C,D etc.
4. Sub catchments	1,2,3,4 etc.

5. Watersheds a,b,c,d etc
6. Micro watersheds 1,2,3,4 etc .

21.3.4 Entire Stall falls under Water Resources Region 1. Tawi & Painthal are catchments of Chenab Basins codified as 1DT and 1DP (1 stands for Watershed Resources region , D for Chenab Basin, T&P for Tawi and Painthal Catchments).

21.3.5 Dudu and Udhampur range are converted under T3a, T3b, T4a, T4b, and T4c watershed of river tawi, (where T stands for Tawi cattchments 3 & 4 are code for catchments and a,b,c etc for watersheds).

21.3.6 Panchari range is cover under part of P1c, P2a, P2b and part of P3a watersheds.

21.3.7 Each watershed is father delineated into various micro watersheds of manageable size and being adopted as basic units of planning and management.

Participatory Micro -Planning

21.4.1 The micro watershed should be selected by the DFO (territorial) and a holistic site specific package of measures in appropriate combination, most suited to the given site should be planned. NGO's, government agencies concerned with rural development and land resource use and local people should be involved in the planning process with the coordinating assistance of district administration.

21.4.2 The participatory planning process is a complex process involving participatory Rural Appraisal. Collecting information on government plans, establishing contact and rapport will various agencies, setting up coordinating mechanism at village, range and district/division level. It involved preparing comprehensive plants such as soil and water conservation, agriculture development, apiculture, sericulture, fisheries,

alternative energy and energy conservation programmes, joint forest management and grazing management.

21.4.3 The physical and financial targets of micro-plans should be compiled and a formal approval of all local district and state level organizations should be obtained to ensure their participation. After obtaining various approvals, the document can be submitted to the government for formal adoption.

21.4.4 There will be district level committee with, Dy. Commissioner as Chairman and heads of all department as members with DFO (Territorial) as member secretary. Similar committees are required as tehsil and block level.

21.4.5 The entire planning , implementation and monitoring programme should be developed in interaction with Forest Protection Committee/ Panchayats.

Treatment Plan

21.5.1 Treatment plan of the micro-watershed shall include following points:

A- In Forest And Pastures

I. Orientation of forestry operation for meeting resources needs of people and generating employment for people e.g adoption of multiple production system.
II. Cultivation and organized collection of non timber forest products compatible with conservation and local interests.
III. Pasture improvement through weed eradication with enrichment planning and rotational closures.
IV. Economic employment generation e.g. basket weaving from *Dodonaea viscosa*.
V. Harvesting of green grass at the end of monsoon and providing hay in return for co-operation in observance of regulated grazing/lopping.
VI. Green fodder form for migratory Bakerwals.

VII. Water harvesting structure.

VIII. Natural regeneration of forests to be supplemented by artificial regeneration.

IX. Soil and moisture conservation works including construction of check Dams and stabilizations of landslides.

X. Preferential employment to local in all above works.

B- **In Private Farms**

I. Improved farming techniques.

II. Effective water harvesting and soil conservation techniques.

III. Agro-forestry, horticulture and sericulture.

C- **Minor-Irrigation**

I. Simple diversion cum storage type minor irrigation schemes including development of village tanks.

II. Lift irrigation schemes.

D- **Animal Husbandry**

I. Phased reduction in population of scrub live stock and improvement of breed added by sterilization of scrub bulls.

II. Co-operative dairying with marketing support.

E- **Fisheries**

I. Utilization of harvested water received through water harvesting structures and other soil conservation measures with a view to generate more gainful employment. Missed culture of Rohu.Mrigal catlu common carp, Silver carp in sub-tropical zone and common crop, silver carp and grass crop in temperate zone is suggested. For initial stocking 2000 to 3000 fingerlings and thereafter only 500 fingerlings per ha are required. In warmer zone production is approximately 2000 to 3000 kg/ha whereas, in cold climate it is 1500 to 2000 kg.

II. Marketing support backed by cold storage and appropriate transport arrangement.

F- **Horticulture**

I- In sub-tropical zone (udhampur block) fresh fruit plants like guava apricot papaya, mango and citrus plant and in semi-temperate zone (chenani block) dry fruits like walnut and almond and fresh fruits like guava, cherry, plum, peach, and citrus plants are suggested. In temperate zone (panchari block), there is scope for plantation of dry fruits species like almond, walnut etc. in lower belts of Panchari block fruits varieties can also be planted.

II- Plantation of fruit species to be taken up on private lands, village common land as well as in rehabilitation of degraded forests (RDF) areas. The division will have its own nurseries of fruit species in all three ranges.

G-**Apiculture**

I. The department of Apiculture can provide training and infrastructure assistance required to take up the activity. Some important forest flora suitable for bee culture are as under:-

Dalbergia sissoo, Acacia modesta, Emblica offinaliss, Toona ciliate, Robinia pseudoacacia, Rosa moshata, Berberis lyceum, Aesculue spp. Zizyphus maurtiania, Plectranthus rugosus, Euucaluptus spp.

H- **Eco-Tourism**

I. Development of trekking routes in tracts which have potential for eco-tourism.

II. Preferential employments of locals in tourism facilities after necessary education and training.

I- **Infrastructure**

I. Micro-hydel/solar powers for meeting energy needs.

II. Rope ways for good movement in difficult and remote areas.

III. Wind mills and water mills for food processing.

J- **Cottage Industry**

Promotion based on local skills and appropriate technological and infra structural support

CHAPTER-XXII

Miscellaneous Regulations

CHAPTER-XXII

Miscellaneous Regulations

22.1 Buildings

22.1.1 The detail of buildings of the Udhampur Forest Division with a brief remark about their present condition is given in the annexures. Most of the buildings require renovation.In addition guard huts and residential accommodation for Block Foresters should be constructed at beat and block headquarters at top priority.

22.2 Roads

22.2.1 Since the commercial exploitation of forests has been restricted to removal of dry / fallen material only (due to ban on green felling), the roads constructed during the past are in a miserable condition. At present a network of roads by R&B and PMGSY is spread to almost entire division.

22.3 Paths

22.3.1 The inspection paths are the main components as these act as a link in hilly terrain. There is an urgent need for repair / renovation of old inspection paths, besides construction of new inspection paths

22.4 Bridges

22.4.1 Since there are a number of nallahs and khads which are flooded during rains, so construction of wooded foot bridges are an important component of forestry activity.

22.5 Firewood Supply

22.5.1 The inhabitants of the Division are mostly dependent on firewood for cooking and heating purpose during winters. The requirement of fuel is met from the forests. Usually fallen material is lifted from forests, but in some cases they indulge in illicit damages. Though the other sources of energy such as LPG, Kerosene and electric heaters are also being used,

but this is confined to only those areas which are located near the roadside.

22.6 Timber Distribution to Concessionists

22.6.1 The timber is supplied to local inhabitants who reside in "A" Zone at concessional rates directly from forests i.e. one tree after 3 years Except Deodar all other species are supplied at concessional rates. Now "A" zone depots have been established to supply timber to inhabitants who reside in concession zone at concessional rates.

22.7 Pasture Development

22.7.1 Due to increase in cattle population and encroachment of forest lands the pasture lands are shrinking by every passing year. This has also resulted in the depletion and degradation of left ever pastures lands. Though numerous measures have been adopted in the past for their rehabilitation but good results are still awaited. The Agrostology wing of forest department is meant for propagation and rehabilitation of pastures.

22.7.2 The following measures are prescribed for rehabilitation and conservation of these forests:

- Planting of high yielding verities of grasses and leguminous crops like Red clover etc.
- Planting of fodder yielding plants on forest fringes and state lands.
- Educating locals for adapting the practice of rotational grazing and it benefits.
- Stall feeding should be encouraged

22.8 Developmental of Buxus Wallichiana (Chikhri)

22.8.1 Chikri forests occur on the northerly, cool gentle sloping aspect with relatively high moisture content, thick soil cover along the blank of perennial Sumni nalla, in Co. 4a , 5a and 5b of Panchari Range. Chikri

forests occur in nearly pure patches. It is generally occurs as a second story crop in Oak, Kail and Fir forests of Panchari Range. It is found in the altitudinal zone of 2000-2500 meters.

22.8.2 Chikri is a slow growing species. Plant is of medium size. Chikri wood articles like wooden utinsils, wooden shoes and other souvenir articles have been in use from old times. Its wood is being used in manufacture of geometrical instruments, photo frames, furniture, toys at Thana Mandi (Rajouri) and Ramnagar. However in Udhampur Division, Chikri is hacked by locals for firewood purpose only. Good turning and finishing property of Chikri should be utilized to promote cottage industry. Chikri can be propagated through cutting. Treatment of cutting with growth hormones enhances the rooting percentage. Nursery raised plants can be transplanted on suitable sites. Care should be taken in selection of site as the species avoids exposed and hot aspects and limestone formation.

22.9 Layout

22.9.1 The layout of the compartments was started in Nov 2011 and completed during 2011-12 in the field. Black coal tar rings were marked on trees at the boundary of compartments, Ranges and Divisions. One ring was marked on trees to separate compartments, two rings to separate range boundary and 3 rings to divisional boundary. The running boards were made along the compartment boundaries adjacent to demarcation line.

22.10 Maps (Digital)

The following maps have been prepared.

22.10.1 **Management Map:** A management map on 1:50,000 scale has been prepared.

22.10.2 **Stock Map:** A stock map on a scale 1:50,000 has also been prepared indicating the compartments allotted to various working circles by

colour scheme. Stock maps of individual compartments on 1:15,000 scale have also been prepared.

22.11 Compartment Description

The compartment descriptions have been written for each compartment/Sub compartment seperately

22.12 Working Plan Draft

The draft copy of the Working Plan is being submitted in duplicate

CHAPTER-XXIII

Establishment and Labour

CHAPTER-XXIII

Establishment and Labour Supply

23.1 Establishment

The details of present strength of the staff of the Division are given in Chapter-IV of Part-1 of the Plan. The present strength of the establishment is considered adequate to cope up with existing work load.

23.2 Labour Supply

The labour supply is also not satisfactory although local labour is available for normal works such as plantation, fencing minor engineering works and timber extraction on small scale. The local labour is not well trained for resin taping (Rill method). The labour has to be imported for resin tapping and timber extraction. Labour of co-operative societies should be encouraged by engaging thenm in plantation, harvesting and construction activities of the department. Training of the labour engaged in resin tapping operation should get top priority.

23.3 Ranges, Blocks and Beats

23.1.1 During May, 1979, the Panchari Range was formed by carving out areas from Lander (Comptts 82a-108c), Reasi (Comptts 1-38/P) and Comptt. 1 to 38 of Panjar Block of Udhampur Range. As a result of this reallocation, fresh compartment numbers were given to all compartments in Panchari Range in Sh. S.P. Sharmas Plan. Strangely, compartments of Panchari were still know by their old name amongst people as well as the staff. However during sh. Sarvesh Rai's Plan new compartment numbers were carved on trees.

23.1.2 During May. 1992 Ramnagar Range was carved out to constitute the present Ramnagar Forest Division. Some compartments of Udhampur

Range (Comptts 20 to 33) were transferred to Reasi Division. In the proposed Plan the compartments of Udhampur Range excluding the ones transferred to Reasi could not be rearranged as the fact was brought to notice at a time when the layout exercise had almost been completed .However, It's expected that during the revision of the proposed in future, the compartments shall be rearranged and given new numbers as per the sequence.

23.1.3 No change is envisaged in the present set up of Beats and Blocks in Udhampur Forest division.

23.1.4 In Dudu Range there is a proposal to transfer a few compartments to Sud Mahadev Conservation Reserve so as to get the administrative control of certain compartments which are managed by the territorial division. The proposal has not been accorded the necessary sanction as of now.The compartments proposed to be transfrerred are Co. 34, 35b, 38, 39, 40 a, 40b, 42, 43, 45b and 46 with an area of 3211 Hectares.

23.1.5 The details of Beats and Blocks is given in the Annexures

CHAPTER-XXIV

Control

CHAPTER XXIV

Control

24.1 Control Forms

24.1.1 As per the standard procedure following control forms are prescribed to be maintained.

1. Control form "A"

It shall be maintained on standard form for recording major markings done in Deodar Kail, Fir and Chir selection working circle, separately for each of the working circles. In this form volume marked and prescribed yield shall be noted and plus minus accounts shall be shown in annual abstract. The balance will be carried forward to the next year.

2 Control form "B"

It shall be maintained in the standard form.

3 Control form "C"

In this form progress of regeneration in area where regeneration fellings and artificial regeneration/plantation has been carried out, should be faithfully recorded.

4. Control form "D"

This control form indicates territorial DFOs proposals for marking during next three years. It is submitted to the conservator of Forest, Working Plan and Research Circle, through CF (territorial), every year in January who will convey his approval after consultations with the CCF by march of the same year.

24.2 Compartment Histories

24.2.1 The compartment history book shall contain complete record of all the major events that happen in the compartment e.g. volume marked and out turn obtained, details of cultural operations, status of regeneration, damage due to fire, insect-pest attack, encroachment etc. An officer, not below the rank of Range Forest Officer should make an entry summarizing the details of operations and other events in the compartment history book at the close of every year and send a copy to the DFO. The DFO should maintain the compartment histories on the basis of information supplied by Range Officer and a copy of compartment histories should be sent to the conservator of Forest, Working Plan & Research Circle. It is saddening to note that such an important documents is not being maintained by the division.

24.3 Divisional Journals

24.3.1 The DFO shall maintain divisional journals in which he shall record all information like regeneration and plantation works under taken and their success or failure citing reasons thereof, seed years, insect-pest attack, condition of forest roads, bridges and buildings, important problems of the division etc. On the analogy of divisional journal, records must be maintained at Range and Block levels.

24.4 Plantation Journals

24.4.1 Every plantation should have a plantation journal in which all the details of works executed should be recorded

24.5. Nursery Journals

24.5.1 All nursery should have a nursery journal on which all the details of works executed in the nurseries should be recorded.

24.6 Guard book

23.6.1 The forest guards shall be supplied with guard books containing enlarged working plan maps of their respective beats. The number of chaks and number of boundary pillars on the outer line as well as that in chaks boundary should be clear marked, numbered and entered in the Guard book. These Guard Books must be checked by concerned Range Officer, at least once a month and by the DFO at least, once in six months.

CHAPTER-XXV

Financial Forecast and Financial Plan of Operation

CHAPTER-XXV

General Financial Forecast and Financial Plan Of Operation

25.1 Financial Forecast

25.1.1 The amount of investment needed for implementing the various prescriptions of this Plan has been calculated at present schedule of rates.The main source of revenue will come from the sale of timber by the State Forest Corporation. The other major source is from the sale of resin . The detail of timber to be extracted from the forests of the Division over the Plan period of 10 years and the revenue generated is worked out as under

Table 25.1

S.No.	Species	Volume (m^3)	Royalty chargeable from SFC Rs /m^3	Expected Revenue in Rs
1	Deodar	1100	3327.64	3,660,404
2	Kail	3700	1581	5,849,700
3	Fir	3200	1236.70	3,957,440
4	Chir	0	1306.26	0
	Total	**8000**		**13,467,544**

25.1.2 If the resin tapping is continued as per working plan prescription about 1140.75 quintals of resin shall be extracted annually. Thus the revenue from resin, therefore calculated is as under:

Table 25.2

Quantity (Quintals)	Highest Sale Rate Rs/per quintal of 2012-13	Expected Revenue in Rs.
1140.75	6410	7,312,207.5

In view of the Ban on green felling of trees the expected removal of timber from the forests is likely to exceed 20% of the prescribed yield. This figure, of course, is bound to register a further increase on account of upward revision in the rates of timber and resin.

25.2 Future Expenditure

25.2.1 The working circle wise area proposed to be taken for rehabilitation annually is as under:

Table 25.3

S.No.	Working Circle	Area in hectares	Average expenditure per hectare	Annual Amount Required
1	**Deodar-Kail Selection Working Circle**	**216**	**-**	**-**
a	For Artificial Regeneration with Fencing (20% of Annual Coupe)	43.2	1,00,000	4,320,000
b	For Assisted Natural Rgeneration without Fencing (20% of the Annual Coupe)	43.2	45000	1,944,000
c	For Silvicultural Operations (20% of the Annual coupe)	43.2	25000	1,080,000
	Total			***7,344,000***
2	**Fir Selection Working Circle**	**159**	**-**	**-**
a	For Artificial Regeneration with Fencing (20% of Annual Coupe)	31.8	1,00,000	3,180,000
b	For Assisted Natural Rgeneration without Fencing (20% of the Annual Coupe)	31.8	45000	1,431,000
c	For Silvicultural Operations (20% of the Annual coupe)	31.8	25000	795,000
	Total			***5,406,000***
3	**Chir Selection Working Circle**	**239**	**-**	**-**
a	For Artificial Regeneration with Fencing (20% of Annual Coupe)	47.8	1,00,000	4,780,000
b	For Assisted Natural Rgeneration without Fencing (20% of the Annual Coupe)	47.8	45000	2,151,000

c	For Silvicultural Operations (20% of the Annual coupe)	47.8	25000	1,195,000
	Total			***8,126,000***
4	**Reboisement Working Circle**	500	1,00,000	***50,000,000***
Grand Total				

S.No.	Working Circle	Annual Amount Required
1	**Deodar-Kail Selection Working Circle**	***7,344,000***
2	**Fir Selection Working Circle**	***5,406,000***
3	**Chir Selection Working Circle**	***8,126,000***
4	**Reboisement Working Circle**	***50,000,000***
	Total	***7,08,76,000***

Besides above the average amount required annually over the next 10 years for normal expenditure of the Division is as under:

Table 25.4

S.No.	Item	Figure (in Lacs.)
1	Salary	847
2	T.E.	1.200
3	O.E.	1.400
4	P.O.L.	2.500
5	Building	15.000
6	Firewood	20.000
7	Timber	80.000
8	Resin	50.000
9	Miscellaneous	10.000
	Total	**1027.1**

Note :- The above figures are based on the budget figures of 2014-1

CHAPTER-XXVI

Summary of Prescriptions

CHAPTER XXVI

Summary of Prescription

S.No.	Prescription		
1	**Deodar-Kail Selection Working Circle**		
	Total area of the Working Circle	=	8336
	Silvicultural System	=	Selection System
	Exploitable size		
	Deodar and Kail	=	70cm. d.b.h.
	Fir	=	80cm. d.b.h.
	Rotation		
	Deodar and Kail	=	150 years
	Fir	=	240 years
	Felling Cycle	=	30 years
	Annual yield from the working circle		
	Deodar	=	1100 m^3
	Kail	=	3700 m^3
	Fir	=	200m^3
	Total	**=**	**5000m^3**
	Size of the Annual Coupe	=	216 hectares
	Allowable cut per hectare of the commercial area of the working circle per annum	=	23..61 m^3
2	**Fir Selection Working Circle**		
	Total area of the Working Circle	=	6013 hectares
	Silvicultural System	=	Selection System
	Exploitable size		
	Deodar and Kail	=	70 cm. d.b.h.
	Fir	=	80 cm. d.b.h.
	Rotation		
	Deodar and Kail	=	150 years
	Fir	=	240 years
	Felling Cycle	=	30 years

	Annual yield from the working circle		
	Deodar	=	1100 m^3
	Kail	=	1000 m^3
	Fir	=	3200 m^3
	Total	**=**	**5300 m^3**
	Size of the Annual Coupe	=	159 hectares
	Allowable cut per hectare of the commercial area of the working circle per annum	=	33.33 m^3
	Chir Selection Working Circle		
	Total area of the Working Circle	=	8845 hectares
	Silvicultural System	=	Selection System
	Exploitable size of Chir	=	70 cm. d.b.h.
	Rotation of Chir	=	120 years
S.No.	**Prescription**		
3	Felling Cycle	=	30 years
	Annual yield from the working circle Chir	=	4000 m^3
	Size of the Annual Coupe	=	239 hectares
	Allowable annual cut per hectare of the commercial area of the working circle	=	16.73 m^3
	Reboisement Working Circle		
4	Total area of the Working Circle	=	19695 hectares
	Special objects of Management		
	Method of Treatment prescribed		
5	**Eco-Tourism Working Circle**		
	Total area of Working Circle	=	627 hectares
	Special objects of Management		
	Method of treatment prescribed		
6	**Wildlife Working Circle**		
	Total area of the Working Circle	=	15337 hectares

	Special objects of Management Method of treatment prescribed
7	**NTFP (Overlapping) Working Circle**
	Special objects of Management
	Management of NTFP's
8	**Fodder Development (overlapping) Working Circle**
	Special objects of Management
	Method of Treatment prescribed
9	**Forest Protection (Overlapping) Working Circle**
	Special objects of Management
	Agencies responsible for forest damages
10	**Plantation Working Circle (Overlapping)**
	Special objects of Management
	Treatments proposed
	Regeneration Programme
	Nursery and Plantation Technique

LIST OF ANNEXURES

ANNEXURE -1A

AREA STATEMENT OF DEODAR –KAIL SELECTION WORKING CIRCLE (IN HA)

		Commercial Area				Un-Commercial		Total
Range	Comptt. No.	Deo	Kail	Fir	Chir	B.L	Blank	
Dudu	10	30	85	26	0	17	16	174
	19	106	0	51	0	43	12	212
	23	0	66	0	0	0	6	72
	25a	42	14	26	0	0	12	94
	27b	87	15	13	0	7	14	136
	28a	134	0	0	0	0	21	155
	28b	81	0	0	0	0	5	86
	31b	65	0	0	0	0	19	84
	35a	10	37	0	0	0	7	54
	45a	0	49	15	0	0	8	72
	49b	0	38	13	0	0	25	76
	54b	17	0	0	0	0	0	17
	55a	101	0	0	0	18	28	147
	56a	67	2	16	0	0	6	91
	60a	46	104	34	0	18	9	211
	60b	0	86	0	0	8	0	94
	64	0	71	30	0	17	14	132
	65a	11	46	21	0	0	2	80
	65b	0	100	0	0	70	0	170
	66	0	196	0	0	66	32	294
	67b	0	118	0	0	11	11	140
	68a	0	80	0	0	16	15	111
	69b	0	78	17	0	0	4	99
	70a	0	47	0	0	16	11	74
	70b	24	19	0	0	25	0	68
	71	27	20	0	43	52	2	144
	72	0	112	17	0	8	2	139

	Comptt. No.	*Deo*	*Kail*	*Fir*	*Chir*	*B.L*	*Blank*	*Total*
	73	0	93	0	0	0	3	96
	75a	25	128	27	0	34	3	217
	75b	7	84	48	0	21	22	182
	76a	0	150	0	0	0	54	204
	77a	0	42	0	0	12	5	59
	80	0	56	13	0	15	3	87
	83	0	153	0	0	29	4	186
	85	0	104	0	0	27	8	139
	86	0	182	0	44	47	2	275
	87a	0	48	0	0	0	3	51
	101a	71	0	0	0	8	2	81
	110c	73	37	0	0	116	15	241
TOTAL		**1024**	**2460**	**367**	**87**	**701**	**405**	**5044**
Panchari	4b	0	87	0	0	20	33	140
	5b	0	109	0	0	17	0	126
	8	0	45	0	0	19	3	67
	22	0	50	0	0	10	0	60
	23	0	82	0	20	0	28	130
	24	0	112	0	0	0	8	120
	25	0	118	21	0	21	15	175
	29	0	79	0	0	11	0	90
	31	0	168	28	0	24	19	239
	32	0	29	0	21	17	16	83
	33	0	19	0	8	16	0	43
	38	0	47	0	17	26	7	97
	40	0	99	12	0	0	7	118
	48b	0	23	0	7	0	5	35
	49	0	85	8	0	38	9	140
	50a	0	54	3	0	10	4	71
	53a	12	52	0	0	0	8	72
	54a	32	0	0	0	0	8	40
	58a	31	0	0	0	0	8	39

	Comptt. No.	*Deo*	*Kail*	*Fir*	*Chir*	*B.L*	*Blank*	*Total*
	59a	10	90	0	0	0	0	100
	60	7	36	0	0	0	10	53
	61	21	73	0	0	21	15	130
	65a	0	57	0	0	0	13	70
	66b	78	43	0	0	0	30	151
	67	80	76	0	0	0	50	206
	68	34	85	0	0	40	0	159
	69	22	114	0	0	0	36	172
	70	65	0	0	0	0	15	80
TOTAL		**392**	**1832**	**72**	**73**	**290**	**347**	**3006**
Udhampur	37	0	108	22	0	17	51	198
	38b	0	64	0	0	16	8	88
TOTAL		**0**	**172**	**22**	**0**	**33**	**59**	**286**

AREA ABSTRACT OF DEODAR KAIL SELECTION WORKING CIRCLE

(AREA IN HA)

Range	**Deo.**	**Kail**	**Fir**	**Chir**	**B.L**	**Blank**	**Total**
Dudu	1024	2460	367	87	701	405	5044
Panchari	392	1832	72	73	290	347	3006
Udhampur	0	172	22	0	33	59	286
TOTAL	**1416**	**4464**	**461**	**160**	**1024**	**811**	
	Commercial Area = 6501				**Un-Commercial=1835**		**8336**

ANNEXURE -1B

AREA STATEMENT OF FIR SELECTION WORKING CIRCLE (IN HA)

		Commercial Area				Un- Commercial		Total
Range	**Comptt. No.**	**Deo**	**Kail**	**Fir**	**Chir**	**B.L**	**Blank**	
Dudu	13	10	15	20	0	0	4	49
	16	0	0	138	0	16	0	154
	17	14	25	98	0	0	10	147
	18	49	0	72	0	0	7	128
	25b	0	12	27	0	23	28	90
	27a	13	0	102	0	0	14	129
	29a	0	7	26	0	0	2	35
	30	0	0	150	0	44	11	205
	31a	17	0	59	0	0	30	106
	33	0	52	62	0	18	38	170
	34	12	45	93	0	30	7	187
	35b	24	0	135	0	0	4	163
	38	0	36	124	0	71	17	248
	39	52	14	78	0	0	7	151
	40a	16	0	88	0	57	65	226
	40b	0	0	159	0	68	57	284
	42	0	0	196	0	0	11	207
	43	31	0	168	0	0	4	203
	44	0	12	129	0	0	3	144
	45b	10	7	124	0	0	18	159
	47a	0	0	64	0	0	0	64
	47b	0	27	134	0	0	14	175
	48	18	27	56	0	27	28	156
	49a	9	0	112	0	0	54	175
	51	35	72	98	0	0	37	242
	52	52	31	155	0	0	0	238
	54a	46	0	31	0	0	8	85
	55b	59	0	47	0	0	6	112

	Comptt. No.	*Deo*	*Kail*	*Fir*	*Chir*	*B.L*	*Blank*	*Total*
	56b	31	5	28	0	19	0	83
	62	0	97	69	0	27	18	211
	63	0	18	147	0	24	13	202
	81	0	20	161	0	0	68	249
TOTAL		**498**	**522**	**3150**	**0**	**424**	**583**	**5177**
Panchari	1	0	0	168	0	0	110	278
	5a	0	0	33	0	0	11	44
	30	0	23	130	0	0	4	157
	39	0	18	108	0	0	7	133
	65b	4	0	41	0	0	24	69
	66a	0	21	57	0	0	77	155
TOTAL		**4**	**62**	**537**	**0**	**0**	**233**	**836**

AREA ABSTRACT OF FIR SELECTION WORKING CIRCLE

(AREA IN HA)

Range	**Deo.**	**Kail**	**Fir**	**Chir**	**B.L**	**Blank**	**Total**
Dudu	498	522	3150	0	424	583	5177
Panchari	4	62	537	0	0	233	836
TOTAL	**502**	**584**	**3687**	**0**	**424**	**816**	
	Commercial Area =4773				**Un- Commercial =1240**		**6013**

ANNEXURE -1C

AREA STATEMENT OF CHIR SELECTION WORKING CIRCLE (IN HA)

		Commercial Area				Un –Commercial		Total
Range	**Comptt. No.**	**Deo**	**Kail**	**Fir**	**Chir**	**B.L**	**Blank**	
Dudu	74	0	0	0	111	66	0	177
	78	0	0	0	146	21	22	189
	87b	0	15	0	182	0	11	208
	87c	0	0	0	174	0	11	185
	96	0	0	0	134	0	16	150
	97a	0	0	0	109	0	0	109
	97b	0	0	0	72	0	0	72
	98	0	0	0	109	0	10	119
	102a	0	0	0	67	0	4	71
	102b	0	0	0	69	0	6	75
	111b	0	0	0	61	17	0	78
TOTAL		**0**	**15**	**0**	**1234**	**104**	**80**	**1433**
Panchari	12	0	0	0	150	18	38	206
	13	0	0	0	149	55	56	260
	14	23	0	0	183	14	9	229
	16	0	0	0	57	0	18	75
	17	0	0	0	28	0	12	40
	18	0	0	0	55	27	5	87
	19	0	0	0	48	0	12	60
	20	0	26	0	136	0	3	165
	28	0	14	0	76	63	4	157
	34	0	0	0	113	71	7	191
	35	0	0	0	215	83	14	312
	36	0	0	0	181	58	13	252
	47	0	0	0	190	17	24	231
TOTAL		**23**	**40**	**0**	**1581**	**406**	**215**	**2265**

	Comptt. No.	***Deo***	***Kail***	***Fir***	***Chir***	***B.L***	***Blank***	***Total***
Udhampur	6	0	0	0	77	0	8	85
	11	0	0	0	123	0	21	144
	12b	0	0	0	36	0	11	47
	16	0	0	0	41	0	6	47
	17b	0	0	0	60	0	0	60
	18	0	0	0	97	0	0	97
	19a	0	0	0	112	0	24	136
	19b	0	0	0	107	0	41	148
	35	0	0	0	120	0	20	140
	36	0	15	0	91	0	35	141
	38a	0	18	0	33	23	11	85
	39	0	10	0	139	0	0	149
	42a	0	0	0	65	0	17	82
	42b	0	0	0	56	0	16	72
	49	0	0	0	166	9	18	193
	53c	0	5	0	82	0	36	123
	54	0	0	0	94	0	11	105
	55a	0	0	0	69	0	0	69
	55b	0	0	0	58	0	6	64
	56a	0	0	0	155	0	66	221
	57a	0	0	0	45	0	10	55
	60	0	0	0	111	0	50	161
	61	0	0	0	140	21	45	206
	62	0	0	0	120	0	5	125
	63	0	0	0	123	0	34	157
	67	0	0	0	114	0	21	135
	68	0	0	0	57	0	24	81
	74a	0	0	0	50	0	18	68
	75	0	0	0	75	0	8	83
	76	0	0	0	82	0	0	82
	77	0	0	0	93	0	26	119
	78	0	0	0	80	0	12	92

	Comptt. No.	*Deo*	*Kail*	*Fir*	*Chir*	*B.L*	*Blank*	*Total*
	80	0	0	0	127	0	19	146
	81	0	0	0	84	0	0	84
	82	0	0	0	107	0	6	113
	83	0	0	0	96	0	12	108
	84b	0	0	0	206	0	18	224
	85b	0	0	0	74	0	4	78
	86a	0	0	0	116	0	6	122
	86b	0	0	0	65	0	9	74
	87a	0	0	0	41	0	0	41
	87b	0	0	0	85	0	26	111
	89	0	0	0	107	0	18	125
	94	0	0	0	59	0	0	59
	95a	0	0	0	135	0	32	167
	97	0	0	0	80	0	43	123
TOTAL		**0**	**48**	**0**	**4253**	**53**	**793**	**5147**

AREA ABSTRACT OF CHIR SELECTION WORKING CIRCLE

(AREA IN HA)

Range	**Deo.**	**Kail**	**Fir**	**Chir**	**B.L**	**Blank**	**Total**
Dudu	0	15	0	1234	104	80	**1433**
Panchari	23	40	0	1581	406	215	**2265**
Udhampur	0	48	0	4253	53	793	**5147**
TOTAL	**23**	**103**	**0**	**7068**	**563**	**1088**	
	Commercial =7194				**Un-Commercial = 1651**		**8845**

ANNEXURE -1D

AREA STATEMENT OF REHABILITATION CUM REBOISMENT WORKING CIRCLE

(IN HA)

		Commercial Area				Un - Commercial		Total
Range	**Comptt. No.**	**Deo**	**Kail**	**Fir**	**Chir**	**B.L**	**Blank**	
	20	52	68	0	0	31	9	160
	21	59	0	0	0	8	11	78
	22	62	20	0	0	32	12	126
	24	57	0	0	0	0	25	82
	26	0	0	126	0	65	19	210
	29b	0	0	21	0	114	16	151
	32	0	0	135	0	75	35	245
	46	0	0	599	0	484	300	1383
	50	0	0	163	0	0	15	178
	53a	60	0	12	0	0	2	74
	53b	29	0	56	0	0	28	113
	57	0	0	58	0	0	37	95
	58	0	0	17	0	0	61	78
	59	7	32	188	0	0	68	295
	61	0	65	34	0	85	3	187
	67a	0	26	0	0	77	4	107
	68b	0	35	0	0	51	15	101
	69a	0	7	0	0	27	10	44
	76b	0	0	0	22	106	6	134
	77b	0	0	0	0	45	10	55
	79	0	20	0	0	164	13	197
	82	0	55	0	0	161	40	256
	84	0	17	116	0	22	72	227
	87d	0	15	0	55	0	20	90
	88	0	0	0	82	0	19	101
	89	0	0	0	119	0	22	141

	Comptt. No.	*Deo*	*Kail*	*Fir*	*Chir*	*B.L*	*Blank*	*Total*
	90	0	0	0	0	0	51	51
	92	0	0	0	95	0	8	103
	101b	5	22	0	99	59	5	190
	104	0	0	0	45	0	13	58
	110b	0	0	0	0	81	8	89
	111a	0	0	0	19	66	13	98
TOTAL		**331**	**382**	**1525**	**536**	**1753**	**970**	**5497**
Panchari	2	0	0	103	0	0	50	153
	3	15	138	139	0	33	0	325
	4a	0	0	206	0	52	168	426
	5c	0	0	0	164	35	0	199
	6	0	126	154	0	39	47	366
	7	0	43	82	0	50	55	230
	9	0	0	0	69	68	32	169
	10	0	0	0	65	43	32	140
	11	0	0	0	26	15	0	41
	21	0	12	0	27	31	10	80
	26	0	0	0	192	0	62	254
	27	0	0	0	197	0	56	253
	37	0	52	0	84	110	11	257
	41	0	38	0	18	21	2	79
	42	0	0	0	135	53	24	212
	43	0	0	0	108	27	8	143
	44	0	0	0	112	37	34	183
	45	0	13	0	185	35	23	256
	46	0	0	0	126	0	30	156
	48a	0	21	0	47	0	4	72
	50b	0	0	0	69	15	21	105
	51	0	32	0	25	77	109	243
	52a	0	0	0	194	0	6	200
	52b	0	0	0	15	55	6	76
	53b	0	0	0	279	0	65	344

	Comptt. No.	***Deo***	***Kail***	***Fir***	***Chir***	***B.L***	***Blank***	***Total***
	54b	0	0	0	43	0	0	43
	55	0	0	0	354	0	53	407
	56	0	0	0	251	0	50	301
	57	0	0	0	278	16	75	369
	58b	0	0	0	92	0	118	210
	59b	0	0	0	67	0	43	110
	62	0	0	0	28	0	27	55
	63	0	0	0	22	0	29	51
	64	0	0	0	76	19	51	146
	71	46	0	0	731	0	31	808
TOTAL		**61**	**475**	**684**	**4079**	**831**	**1332**	**7462**
	1	0	0	0	136	0	67	203
	2a	0	0	0	74	0	38	112
	2b	0	0	0	58	0	10	68
	3	0	0	0	89	0	16	105
	4	0	0	0	86	0	8	94
	5	0	0	0	35	0	19	54
	7	0	0	0	179	0	26	205
	8a	0	0	0	44	0	10	54
	8b	0	0	0	59	0	30	89
	9	0	0	0	98	0	21	119
	10	0	0	0	210	0	87	297
	12a	0	0	0	34	12	8	54
	13a	0	0	0	63	0	10	73
	13b	0	0	0	45	0	10	55
	14	0	0	0	60	0	27	87
	15	0	0	0	32	0	18	50
	17a	0	0	0	37	0	3	40
	19c	0	0	0	19	0	0	19
Udhampur	34	0	0	0	161	42	37	240
	40	0	0	0	138	0	13	151
	41	0	0	0	85	18	15	118

	Comptt. No.	*Deo*	*Kail*	*Fir*	*Chir*	*B.L*	*Blank*	*Total*
	43	0	0	0	200	18	24	242
	44	0	0	0	131	0	20	151
	45	0	0	0	215	0	38	253
	46	0	0	0	99	0	0	99
	47	0	0	0	84	0	26	110
	48	0	0	0	149	0	28	177
	50	0	0	0	135	0	3	138
	51	0	0	0	77	0	13	90
	52	0	0	0	98	0	19	117
	53a	0	0	0	38	0	17	55
	53b	0	32	0	45	0	27	104
	56b	0	29	0	0	0	13	42
	57b	0	0	0	25	0	29	54
	58a	0	0	0	26	48	57	131
	58b	0	0	0	59	43	10	112
	59	0	0	0	49	40	18	107
	64a	0	0	0	4	28	3	35
	64b	0	0	0	5	19	5	29
	65	0	0	0	87	0	59	146
	66	0	0	0	137	0	61	198
	69a	0	0	0	54	0	16	70
	69b	0	0	0	59	0	37	96
	70a	0	0	0	129	0	34	163
	70b	0	0	0	25	0	14	39
	71	0	0	0	45	0	0	45
	72	0	0	0	0	9	101	110
	73a	0	0	0	74	0	56	130
	73b	0	0	0	0	20	0	20
	74b	0	0	0	26	18	10	54
	79a	0	0	0	23	0	68	91
	79b	0	0	0	13	65	18	96
	84a	0	0	0	60	0	0	60

	Comptt. No.	*Deo*	*Kail*	*Fir*	*Chir*	*B.L*	*Blank*	*Total*
	85a	0	0	0	42	0	5	47
	88	0	0	0	79	0	13	92
	90	0	0	0	101	0	15	116
	91	0	0	0	62	0	24	86
	92	0	0	0	79	0	19	98
	93	0	0	0	97	0	36	133
	95b	0	0	0	42	0	152	194
	96	0	0	0	37	118	11	166
	98	0	0	0	54	0	20	74
	99	0	0	0	69	0	10	79
TOTAL		**0**	**61**	**0**	**4575**	**498**	**1602**	**6736**

AREA ABSTRACT OF REHABILITATION CUM REBOISMENT WORKING CIRCLE

Range	**Deo.**	**Kail**	**Fir**	**Chir**	**B.L**	**Blank**	**Total**
Dudu	331	382	1525	536	1753	970	5497
Panchari	61	475	684	4079	831	1332	7462
Udhampur	0	61	0	4575	498	1602	6736
TOTAL	**392**	**918**	**2209**	**9190**	**3082**	**3904**	
	Commercial Area =12709				**Uncommercial =6986**		**19695**

ANNEXURE -1E

AREA STATEMENT OF ECO-TOURISM WORKING CIRCLE (IN HA)

Range	Comptt. No.	Deo	Kail	Fir	Chir	B.L	Blank	Total
Dudu	91	87	44	0	0	0	36	167
	93	60	0	0	0	0	59	119
	94	112	0	0	0	0	14	126
	95	95	0	0	0	0	25	120
	110a	5	0	0	22	0	15	42
TOTAL		**359**	**44**	**0**	**22**	**0**	**149**	**574**
Panchari	15	41	0	0	0	0	12	53
TOTAL		**41**	**0**	**0**	**0**	**0**	**12**	**53**

AREA ABSTRACT OF ECO-TOURISM WORKING CIRCLE

(IN HA)

Range	Deo.	Kail	Fir	Chir	B.L	Blank	Total
Dudu	359	44	0	22	0	149	**574**
Panchari	41	0	0	0	0	12	**53**
TOTAL	**400**	**44**	**0**	**22**	**0**	**161**	
	Commercial Area =466				**Uncommercial = 161**		**627**

ANNEXURE -1F

AREA STATEMENT OF WILDLIFE WORKING CIRCLE (IN HA)

		Commercial Area				Un – Commercial Area		Total
Range	**Comptt. No.**	**Deo**	**Kail**	**Fir**	**Chir**	**B.L**	**Blank**	
Dudu	1a	0	35	193	0	185	135	548
	1b	0	0	0	0	28	16	44
	2	35	0	94	0	120	118	367
	3a	0	31	0	0	16	9	56
	3b	109	43	0	0	0	58	210
	3c	0	0	0	0	197	40	237
	3d	0	0	0	0	84	61	145
	4	49	0	20	0	0	14	83
	5	66	17	0	0	8	13	104
	6	0	62	0	0	98	28	188
	7	82	0	0	0	0	16	98
	8a	35	0	8	0	0	5	48
	8b	10	0	29	0	0	6	45
	9	70	0	126	0	27	249	472
	11	15	11	74	0	36	5	141
	12	12	23	127	0	24	9	195
	14	19	17	97	0	60	25	218
	15	0	0	264	0	649	96	1009
	36a	0	0	214	0	166	409	789
	36b	0	7	25	0	0	4	36
	37	0	0	262	0	193	1021	1476
	41a	0	0	0	0	1031	429	1460
	41b	0	138	662	0	902	1348	3050
	99	106	0	0	0	29	52	187
	100a	71	12	0	0	23	18	124
	100b	73	0	0	0	6	0	79
	103a	10	0	0	0	0	161	171

	Comptt. No.	*Deo*	*Kail*	*Fir*	*Chir*	*B.L*	*Blank*	*Total*
	103b	0	13	17	0	51	85	166
	105a	0	36	24	0	118	16	194
	105b	0	0	0	0	194	322	516
	106	0	0	193	0	187	58	438
	107	0	0	45	0	56	107	208
	108	0	11	85	0	56	19	171
	109a	0	39	105	0	115	27	286
	109b	11	0	11	0	110	17	149
	109c	0	0	0	25	0	3	28
	112	0	83	23	0	0	58	164
	113	0	0	123	0	0	87	210
	114	0	57	84	0	207	52	400
TOTAL		**773**	**635**	**2905**	**25**	**4976**	**5196**	**14510**
Udhampur	Jaghanoo	0	0	0	0	58	0	58
	Dhramthal	0	0	0	0	30	0	30
	Nehranal	0	0	0	31	104	12	147
	Lansi	0	0	0	0	11	0	11
	Kotli	0	0	0	0	85	15	100
	Sansooh	0	0	0	0	87	0	87
	Tandeh	0	0	0	0	34	5	39
	Thanoa	0	0	0	0	302	53	355
TOTAL		**0**	**0**	**0**	**31**	**711**	**85**	**827**

AREA ABSTRACT OF WILDLIFE WORKING CIRCLE

Range	**Deo.**	**Kail**	**Fir**	**Chir**	**B.L**	**Blank**	**Total**
Dudu	773	635	2905	25	4976	5196	**14510**
Udhampur	0	0	0	31	711	85	**827**
TOTAL	**773**	**635**	**2905**	**56**	**5687**	**5281**	
	Commercial Area =4369				**Un-Commercial =10968**		**15337**

ANNEXURE -2

Statement showing Agency Wise Forest Land diverted to non-forestry purpose in respect of Udhampur Forest Division

S.No	Name of Project	Area diverted (in Ha)	Sanction No. & Date
1	2	4	6
A	**PMGSY**		
1	**Bariot to Sari (Gabber) road** in Bamhag area	1.35 Ha	PCCF's order No:- 08-FC-of 2006, dt:- 28/4/2006.
2	**Kangloo to Pachound.**	0.525 Ha	PCCF's order No:- 16 FC of 2007 dt:- 6/12/2007.
3	**Nagulta to Rezard**	0.6 Ha	PCCF's order No:- 28 FC of 2007 dt:- 17/12/2007.
4	**Gujed to Chirdi**	1.41 Ha	PCCF's order No:- 36 FC of 2008, dt:- 1/1/2008.
5	**Kud to Madha**	2.85 Ha	Govt. order No:- 266 FST of 2008, dt:- 3/6/2008.
6	**Mongri to Ladda**	1.68 Ha	Govt order No:- 233 FST of 2008, dt:- 3/05/2008.
7	**Tamatar Morh to Their**	3.92 Ha	Govt. order No:- 265 FST of 2008, dt:- 3/06/2008.
8	**Tandhar to Pakhalie**	4.925 Ha	Govt. order No:- 466 FST of 2008, dt:- 16/12/2008
9	**Pathi to Parli Pathi.**	0.669 Ha	PCCF's order No:- 41-FC of 2009, dt:- 06/03/2009
10	**Kotli Balla to Ossu**	8.24 Ha	Govt order No:- 163/FST of 2009 dt:- 8/4/2009
11	**Ukhral to Treeta Dabbar**	3.984 Ha	Govt order No:- 423/FST of 2009 dt:- 29/10/2009
12	**Gandala to Narrore**	1.075 Ha	PCCF's order No:-91 FC of 2009 dt:- 23/9/2009
13	**Panchari to Namol.**	0.825 Ha	PCCF's order No:-02 FC of 2010 dt:- 22/1/2010
14	**Moud to Pattian**	0.45 Ha	PCCF's order No:-46 FC of 2010 dt:- 1/12/2010
15	**Patli to Trilla**	0.425 Ha	PCCF's order No:-45 FC of 2010 dt:- 1/12/2010
16	**Treeta Dabbar to upper Manta**	0.63 Ha	PCCF's order No:-47 FC of 2010 dt:- 1/12/2010
17	**Darsoo to Guddar**	2.40 Ha	Govt. order No. 464 FST of 2010 dt:- 14.12.2010
18	**Ther to Pachote**	1.59 Ha.	PCCF's order No:-02 FC of 2011 dt:- 03/01/2011
19	**Barmeen to Sarsoo**	0.30 Ha.	PCCF's order No:-9 FC of 2011 dt:- 31/03/2011
20	**Dhandal to Proa Jagir**	0.70 Ha.	PCCF's order No:-10 FC of 2011 dt:- 01/04/2011
21	**Supply Morh to Kainthgali Road Km 10th to Pangara Jagir**	0.275 Ha.	PCCF's order No:-08 FC of 2011 dt:- 25/03/2011
22	**Realiged road from Ukhral to Treeta Dabbar**	0.48 Ha.	Govt. order No:-55-FST of 2011 dt:- 10.02.2011
23	**Chirdi to Dhar Ladha**	5.52 Ha.	Govt. order No:-181-FST of 2011 dt:- 15.04.2011
24	**Gandala to Jakhar**	0.3376 Ha.	CCF's order No:-15-FC of 2011 dt:- 29.06.2011
25	**Jakhed to Gurshala**	0.18 Ha.	PCCF's order No:-20-FCA of 2011 dt:-

			20.09.2011
26	**Kainthgali to Bariote Road Km 26 to Upper Basnote**	0.25 Ha.	PCCF's order No:-32-FCA of 2011 dt:- 11.10.2011
27	**Dudu to Ghartas**	0.64 Ha.	PCCF's order N0:-34-FCA of 2011 dt:- 13.10.2011
28	**Bupp to Barkunda**	1.20 Ha.	PCCF's Order No. 25-FCA of 2012 dt:- 25.07.2012
29	**Kainthgali Malti Road Km 27th to Diggi Kotla**	0.70 Ha.	PCCF's Order No. 16 FCA of 2012 dt:- 20.07.2012
30	**Malti to Galiote**	1.89 Ha.	PCCF's Order No. 53 FCA of 2013 dt:- 14.02.2013
31	**Suglar to Rua Bagh**	3.615 Ha.	Govt order No:- 209-FST of 2013 dt:- 17/05/2013
32	**Ossu to Dhar Gaddian**	2.955 Ha (Road), 1.965(Dumping site) = 4.92 Ha.	Govt order No:- 210-FST of 2013 dt:- 17/05/2013
B	**NHIA**		
33	Widening of four ways **NH Jammu to Srinagar**	15.39 Ha	Govt. order No:- 261/FST of 2009 dt:- 19/6/2009
34	**Construction of tunnel in the alignment for four laning of NHIA (Chenani-Nashri Tunnel) & dumping site for muck.**	29.16 Ha	Govt order No:- 203-FST of 2011 dt:- 21.04.2011
35	**Construction of Portal facilities under NHIA**	4.20 Ha.	Govt. Order No. 480-FST of 2012 dt:- 12.12.2012
C	**AIR & DD Kendra**		
36	**Construction of All India Radio Station and Doordarshan Kendra at village Mandlote**	1.00 Ha.	Govt. Order No. 116-FST of 2013 dt:- 18.03.2013
D	**Power Grid Corporation of India**		
37	**Construction of 400 KV D/C Kishenpur-New Wanpoh Qazikund Transmission Line.**	51.692 Ha	Govt. Order No. 214-FST of 2013 dt:- 17.05.2013
E	**NORTHERN RAILWAY**		
38	**Construction of Udhampur to Katra Rail Line (Tunnel No. 1)**	2.14 Ha.	Govt. Order No. 216-FST of 2013 dt:- 17.05.2013
F	**NABARD**		
39	**Gandala to Kud via Bali by PWD (R&B) under NABARD.**	1.185 Ha	PCCF's order No:- 71 FC of 2009 dt:- 17/7/2007
40	**Gandala to Kud to Kainthgali by PWD under NABARD.**	0.7164	PCCF's order No:- 90 FC of 2009 dt:- 23/9/2009
G	**PWD**		
41	**Latiar to Addain**	1.23 Ha	PCCF's order No:-81 FC of 2009 dt:- 24/8/2009
E	**PHE**		

42	**Construction of 5000 gallans slow stand filtration plant at Kalsote.**	0.028 Ha.	Govt. order No:- 98/FST of 2011, dt:- 09.03.2011
43	**Construction of slow sand filteration plant at Charat.**	0.0279 Ha.	Govt. order No:- 136/FST of 2012, dt:- 20.03.2012
42	**Construction of 3000 glns. Slow Sand Filteration Plant at village Lethay**	0.0279 Ha.	Govt. order No:- 230/FST of 2013, dt:- 22.05.2013
F	**PDD**		
44	**Construction of Madiyal Bridge Extrenal Access Road under Sawlakote H.E Project**	0.161 Ha.	Govt. order No:- 469-FST of 2011 dt:- 17.12.11.

ANNEXURE-3

Statement showing detail of Saw Mills (With in Muncipal Limits) in whose favour licenses have been issued under SRO 103 of 2012 in respect of Udhampur Forest Division

S.No.	Name of Saw Mill Owner with parentage	Title of Wood Based Industry	License No. & Date	Location	Cateogry of Machinary
1	Sh. Ravinder Kumar S/o Sh. Bal Kirshan R/o W.no. 2 Udhampur	M/s Ravindera Wood Industry Saw Mill	11/CFE dt:- 06.08.2012	W.No. 1 Near Dak Bunglow Udhampur	Vertical Band Saw & Horizontal Band Saw
2	Sh. Chunil Lal S/o Sh. Krishan Chand R/o W.no. 14 Shakti Nagar Udhampur	M/s Durga Saw Mill	12/CFE dt:- 06.08.2012	W.No. 14 Shakti Nagar Udhampur	Vertical Band Saw
3	Sh. Romesh Kumar S/o Sh. Faquir Chand R/o Dhar Road Kallar Udhampur	M/s Kumar Saw Mill	13/CFE dt:- 06.08.2012	Dhar Road Kallar Udhampur	Vertical Band Saw
4	Sh. Rattan Lal S/o Late Sh. Badri Nath R/o W.no. 7 Udhampur	M/s Sharma Saw Mill	14/CFE dt:- 06.08.2012	W.no. 8 Ramnagar Chowk Udhampur	Vertical Band Saw
5	Sh. Sansar Chand S/o Late Sh. Dinanath R/o W.no. 14 Dhar Road Udhampur	M/s Sansar Saw Mill	15/CFE dt:- 06.08.2012	W.No. 14 Shakti Nagar Udhampur	Vertical Band Saw
6	Sh. Govind Ram Sharma S/o Late Sh. Hari Krishan R/o W.no. 10 Shiv Nagar Udhampur	M/s Hari Krishan Saw Mill	16/CFE dt:- 06.08.2012	W.No. 10 Shiv Nagar Udhampur	Vertical Band Saw
7	Sh. Joginder Parkash S/o Late Sh. Ram Nath R/o W.no. 7 Udhampur	M/s J.P Timber Traders	17/CFE dt:- 06.08.2012	NHIA M.H Morh Udhampur	Vertical Band Saw & Horizontal Band Saw
8	Sh. Tilak Raj Khajuria S/o Sh. Bodh Raj R/o W.no. 1 Subash Nagar Udhampur	M/s Ashoka Enterprises	35/CFE dt:- 19.08.2012	W.No. 1 Subash Nagar Udhampur	Vertical Band Saw & Horizontal Band Saw
9	Smt. Gargi Mahajan W/o Sh. Ram Kumar Gupta R/o W.no. 21 Near CEO Office Dandyal Udhampur	M/s Janta Enterprises	41/CFE dt:- 30.08.2012	W.No. 21 Near CEO Office Dandyal Udhampur	Vertical Band Saw

10	Sh. Hem RajPaul S/o Late Sh. Mansa Ram R/o Chenani District Udhampur	M/s Paul & Co. Saw Mill	56/CFE dt:- 30.08.2012	W.No. 4 Chenani (Udhampur)	Vertical Band Saw
11	Sh. Narinder Gupta S/o Sh. Bodh Raj Gupta R/o Shiv Nagar Udhampur	M/s Shiv Saw Mill	64/CFE dt:- 14.08.2012	NHIA Udhampur	Vertical Band Saw & Horizontal Band Saw
12	Divisional Manager Extraction Division J&K SFC Udhampur	M/s Divisional Manager SFC Udhampur	130/CFE dt:- 28.09.2012	Biram Bridge NHIA Udhampur	Vertical Band Saw & Horizontal Band Saw
13	Sh. Ashok Kumar Khajuria S/o Sh. Chuni Lal Khajuria R/o W.no. 1 Udhampur	M/s Ashok Kumar Khajuria Saw Mill	191/CFE dt:- 18.03.2013	W.no. 4 Barrian Udhampur	Vertical Band Saw
14	Sh. Sudershan Kumar Khajuria S/o Lt. Sh. Shiv Ram R/o W.no. 8, H.no. 15 Gurdawara Gali Udhampur	M/s New Sudershan Kumar Saw Mill	225/CFE dt:- 28.10.2013	NHIA, Near Hotel Sky Lark Udhampur.	Vertical Band Saw

ANNEXURE -4
Detail of Buildings

S.No.	Name of the Building	Location of the building	Accomodation of the building in brief	Purpose of the use of the building	Present status of the building	Remarks
Forest Rest House						
1	Sungial	Sungial	Unfit to use	Departmental use	Building has collapsed	
2	Seri	Seri	2 Rooms	-do-	Fair	Under occupation of security forces
3	Chulna	Chulna	2 Rooms, Lobby, Bath room and Varanda	-do-	Lobby constructed	during 2012-13 Under CAMPA
4	Sudhmahadev	Sudhmahadev		-do-	Requires repair	Under occupation of security forces
5	Chari Bunglow	Co. 55/D		-do-	Collapsed	Damaged due to snow & rains
6	Kashal	Pattangarh		-do-	Collapsed	-do-
7	Latti	Co. 5/D		-do-	Collapsed	-do-
8	Chenani	Chenani	2 Bedrooms + Bathroom + Kitchen	-do-	Needs repair/renovation	
9	Kassal	Kassal Patnitop	Bedroom + Dining Hall + Bathroom + Varanda + Kitchen	-do-	Repaired during 2011-12	
10	Division Complex	Udhampur	2 Room + 2 Bathroom + Varanda + Kitchen + Dining Hall	-do-	Good Condition	
Check Posts						
1	Domail, Udhampur	Domail, Udhampur	3 Rooms	For Checking forest produce	Good Condition	
2	Debray	Debray	1 Room	-do-	Needs repair	
3	Kaldi	Kaldi		-do-	Requires repair	
4	Chenani	Chenani	1 Room & Varanda	-do-	Good Condition	
5	Kainthgali	Kainthgali	2 Rooms 1 Kitchen & 1 Varanda	-do-	Good Condition	

6	Laddan	Near Samlaya Tawi Bridge	1 Room + 1 Kitchen + Varanda	-do-	Good Condition	
7	Jakhani	Jakhani	3 Rooms + Varanda + Bathroom + Kitchen	-do-	Good Condition	
B.O Hut/Guard Hut/Watcher Hut						
1	Nehranal	Nehranal		Departmental use	Requires repair	
2	Tendeh Hut	Tendeh		-do-	Requires repair	
3	Surdabar Hut	Surdabar	2 Rooms & Varandha	-do-	Very Bad	
4	Chulna Hut	Chulna	2 Rooms (Pacca) 2 Rooms (Kacha)	-do-	Requires repair	
5	Chenani Hut	Chenani	3 Rooms (Wooden)	-do-	Fair	
6	Seri Hut	Seri		-do-	Requires repair	
7	Guard Hut	Karlah	2 Rooms, Kictchen, Bathroom & Varanda	-do-	Construction Completed	Construction during 2010-11 under Distt. Plan and completion in 2011-12
8	B.O Hut	74/D, Gharrian	1 Room, 1 Varanda, 1 Kitchen & 1 Bathroom	-do-	Construction Completed	Construction during 2011-12 under CAMPA and completion in 2012-13
9	Mali Hut	Margana Nursery	1 Room Set	-do-	Construction Completed	Construction during 2012-13 under District Plan.
10	Dudu Hut (Inspection Hut)	Dudu	Under Construction	-do-	Under Progress	Construction during 2012-13 under CAMPA.
Forest Control Room						
1	Forest Control Room Udh		1 Room + Bathroom	Departmental use	Needs repair	
Residential Quarters						
1	DFO residence	Udhampur	2 Bedrooms + DD +Kitchen + 2 Bathrooms	Officers use	Fair	
2	Range Qtrr.	Udhampur	3 Rooms, 1 Kitchen 1 Store & 1 Bathroom	-do-	Fair	
3	Range Quarter	Panchari	-do-	-do-	Fair	
4	Range Quarter	Chenani		-do-	Needs repair	
5	Staff Quarters	Udhampur		For staff use	Needs repair	
Office Accomodation						
1	DFO's Office	Udhampur	6 Rooms + 2 Bathrooms	Office use	Fair	Bathrooms constructed during 2012-13 under CAMPA

2	Range Office	Udhampur	2 Rooms	-do-	Fair	
3	Godown	Udhampur	1 Room	Departmental use	Fair	
4	Auction Hall	Udhampur		-do-	Fair	
5	Range Office	Panchari	2 Rooms	Office use	Good Condition	
6	Range Office	Chenani	2 Rooms 1 Varandha	-do-	Good Condition	
7	Weight Bridge	Udhampur	1 Room 1 Varanda	Departmental use	Fair	
8	B.O Quarter/Office	Panchari	2 Rooms , Lobby, Kitchen and Bathroom	Incomplete	Construction during 2009-10 Under 12th finance Comm.	
9	B.O Quarter	Bali	1 Room, Bathroom, Kitchen & Varanda	Departmental use	Construction Completed	Construction during 2010-11 under CAMPA and completion in 2011-12

ANNEXURE -5

Statement Showing The Detail Of Markings Taken Over From Forest DivisionUdhampur &Extraction Done By The SFC Division Udhampur From 2000- 2012

YEAR	COMPARTMENT	Detail Of Markings					Extraction Vol ume (In Lakh.Cft)
		Deodar Vol. (Cft)	Kail Vol. (Cft)	Fir Vol. (Cft)	Chir Vol. (Cft)	TOTAL Vol. (Cft)	
2000-01	67ab/D	-	0.433	0.009	-	0.442	0.228
	25/P	-	0.476	0.060	-	0.536	0.171
	31/P	-	1.064	0.005	0.001	1.070	0.425
	38/P	-	0.320	0.075	0.001	0.396	0.131
	TOTAL	**-**	**2.293**	**0.149**	**0.002**	**2.444**	**0.955**
2001-02	18/D	0.014	0.006	0.118	-	0.138	0.067
	19/D	0.145	0.025	0.088	-	0.258	0.163
	27/D	0.129	0.015	0.004	-	0.148	0.071
	28/D	0.148	0.020	0.001	-	0.169	0.082
	48/D	-	0.060	0.197	-	0.257	0.119
	54/D	0.027	0.003	0.049	-	0.079	0.040
	55ab/D	0.033	0.008	0.032	-	0.073	0.041
	62/D	0.004	0.119	0.047	-	0.170	0.088
	64/D	0.013	0.489	0.037	-	0.539	0.287
	65/D	0.011	0.512	0.144	0.012	0.679	0.300
	69ab/D	-	0.335	0.005	-	0.340	0.207
	70/D	-	0.113	0.004	-	0.117	0.083
	72/D	0.016	0.315	-	-	0.331	0.203
	73/D	0.008	0.227	-	0.011	0.246	0.132
	76/D	-	0.284	-	-	0.284	0.099
	22/P	-	0.316	-	-	0.316	0.105
	23/P	-	0.171	-	0.024	0.195	0.068
	TOTAL	**0.548**	**3.018**	**0.726**	**0.047**	**4.339**	**2.155**
	53ab/D	0.048	0.002	0.325	-	0.375	0.094
	56ab/D	0.105	0.047	0.118	-	0.270	0.137

2002-03	60ab/D	0.069	0.179	0.429	-	0.677	0.287
	67ab/D	-	0.267	-	-	0.267	0.152
	29/P	-	0.099	0.019	-	0.118	0.059
	30/P	-	0.132	0.392	-	0.524	0.165
	39/P	-	0.113	0.717	-	0.830	0.227
	40/P	-	0.180	0.005	0.002	0.187	0.155
	48b/P	-	0.089	0.016	-	0.105	0.084
	TOTAL	**0.222**	**1.108**	**2.021**	**0.002**	**3.353**	**1.360**
2003-04	29/P	-	0.037	-	-	0.037	0.021
	30/P	-	0.049	0.061	-	0.110	0.048
	40/P	-	0.095	-	-	0.095	0.053
	48b/P	-	0.046	-	-	0.046	0.029
	64/P	-	-	-	0.037	0.037	0.011
	48/D	0.001	0.111	0.188	-	0.300	0.162
	56ab/D	0.137	0.036	0.022	-	0.195	0.128
	60ab/D	0.023	0.174	0.045	-	0.242	0.146
	72/D	0.001	0.136	-	-	0.137	0.079
	73/D	-	0.202	-	-	0.202	0.116
	TOTAL	**0.162**	**0.886**	**0.316**	**0.037**	**1.401**	**0.793**
2004-05	22/D	0.122	0.126	-	-	0.248	0.147
	23/D	0.080	0.166	0.009	-	0.255	0.136
	25ab/D	0.162	0.044	0.105	-	0.311	0.152
	27ab/D	0.445	0.155	0.129	-	0.729	0.413
	31ab/D	0.355	0.073	0.133	-	0.561	0.311
	33/D	0.007	0.018	0.293	-	0.318	0.115
	24/P	-	0.172	0.004	-	0.216	Not Worked Out
	32/P	-	0.155	-	-	0.155	0.062
	60/P	0.001	0.056	-	-	0.057	0.025
	TOTAL	**1.172**	**0.965**	**0.713**	**-**	**2.850**	**1.361**
	7/U	-	-	-	0.185	0.185	Not Worked Out
	8/U	-	-	-	0.179	0.179	Not Worked Out

2005-06	7,8,9/U	-	-	-	0.183	0.183	0.042
	10,13/U	-	-	-	0.129	0.129	
	63	-	-	-	0.425	0.425	0.222
	66,67/U	-	-	-	0.177	0.177	0.048
	TOTAL	**-**	**-**	**-**	**1.278**	**1.278**	**0.312**
2006-07	8,9/U	-	-	-	0.032	0.032	0.007
	10,12/U	-	-	-	0.108	0.108	0.026
	13/U	-	-	-	0.057	0.057	0.008
	18/U	-	-	-	0.009	0.009	-
	63/U	-	-	-	0.201	0.201	0.049
	66/U	-	-	-	0.206	0.206	-
	67/U	-	-	-	0.130	0.130	0.006
	68/U	-	-	-	0.092	0.092	-
	69/U	-	-	-	0.057	0.057	-
	73/U	-	-	-	0.124	0.124	0.025
	4/P	-	-	0.221	-	0.221	0.005
	50,51,52/P	-	-	-	0.063	0.063	0.010
	TOTAL	**-**	**-**	**0.221**	**1.079**	**1.300**	**0.190**
2007-08	10/D	0.306	0.405	-	-	0.711	0.371
	13/D	0.167	0.071	0.066	-	0.304	0.160
	28b/D	1.138	0.028	0.199	-	1.365	0.473
	29a/D	0.022	0.031	0.168	-	0.221	0.079
	66/D	-	0.251	0.030	-	0.281	0.156
	68a/D	-	0.204	-	-	0.204	0.071
	75ab/D	0.010	0.433	0.043	0.001	0.487	0.225
	52/D	0.161	0.113	0.754	-	1.028	0.370
	64,65,70,71,73/U 88/D	-	-	-	0.052	0.052	0.017
	TOTAL	**1.804**	**1.536**	**1.280**	**0.053**	**4.653**	**1.922**
	66,67/U	-	-	-	0.007	0.007	-
	68,69/U	-	-	-	0.005	0.005	0.003
	73/U	-	-	-	0.007	0.007	-
	59/D	-	-	0.006	-	0.006	0.002

2008-09	88/D	-	-	-	0.072	0.072	0.015
	89/D	-	-	-	0.108	0.108	0.032
	96/D	0.003	-	-	0.162	0.165	0.049
	TOTAL	**0.003**	**-**	**0.006**	**0.361**	**0.370**	**0.101**
2009-10	74,75/U	-	-	-	0.047	0.047	0.013
	86,87/D	0.003	0.067	-	0.077	0.147	0.053
	56ab/U	-	0.002	-	0.011	0.013	0.005
	71/P	-	-	-	0.124	0.124	Not worked Out
	86,87/U	-	-	-	0.251	0.251	0.044
	3/P	0.003	0.003	-	-	0.006	0.002
	59,60/U	-	-	-	0.058	0.058	0.012
	60,61/U	-	-	-	0.076	0.076	0.021
	66,67,68,69/U	-	-	-	0.150	0.150	0.081
	TOTAL	**0.006**	**0.072**	**-**	**0.794**	**0.872**	**0.231**
2010-11	18/D	0.290	0.052	0.147	-	0.489	Under Progress
	87b/D	-	-	-	0.279	0.279	0.064
	87c/D	-	-	-	0.169	0.169	0.047
	97a/D	-	-	-	0.510	0.510	0.136
	69/P	0.054	0.336	-	-	0.390	0.166
	64/D	0.010	0.278	0.139	-	0.427	0.170
	65/D	0.010	0.273	0.082	-	0.365	0.153
	28a/D	0.752	0.016	-	-	0.768	0.463
	48/D	-	0.108	0.181	-	0.289	0.121
	56/D	0.068	0.037	0.024	-	0.129	0.066
	13,14,16/U	-	-	-	0.112	0.112	0.023
	66,67,68/U	-	-	-	0.074	0.074	0.012
	69/U	-	-	-	0.009	0.009	-
	TOTAL	**1.184**	**1.100**	**0.573**	**0.195**	**3.052**	**1.421**
2011-12	67/P	0.046	0.064	-	-	0.110	0.049
	66,67,68,69/U	-	-	-	0.026	0.026	-
	94,96/D	-	-	-	0.059	0.059	0.009
	50,51/U	-	-	-	0.057	0.057	0.007
	63/U	-	-	-	0.015	0.015	Not Worked Out

	33/P	-	-	-	0.009	0.009	0.003
	TOTAL	**0.046**	**0.064**	**-**	**0.166**	**0.276**	**0.068**

ANNEXURE -6

List Of Behaks (High Land Pastures)

Name of Dar	Name of Behak	Area in ha.
Ladha	Sangalwan	40
	Sampor	290
	Kather	218
	Chorgala	40
	Saryala	121
	Chauri	290
Shivgarh	Shivgarh	81
	Sahnikund	290
	Pader	215
Seoj	Doona-Galk	777
	Madralla-Licha	290
	Nika Divashater	215
	Bara Divashater	542
	Seoj	777
Kala Thil	Gian Kund	210
	Lami Talai	217
	Gandihar	115
	Pattan	255
	Jug	213

ANNEXURE -7

Statement showing the existing Beats/Blocks of Panchari Range of Udhampur Forest Division

Name of Range	Name of Block	Name of Beat	Comptt. with series	Comptt. Area in Ha.	Working Circle	TSD/FSD	Forest Check Post
Panchari	Landar	Lander	1/P	278	Fir Working Circle	-	-
			2/P	153	Rehablitation cum Reboishment	-	-
		Latyar	3/P	325	Rehablitation cum Reboishment	-	-
			4a/P	426	Rehablitation cum Reboishment	-	-
			4b/P	140	Deodar/Kail Working Circle	-	-
			5a/P	44	Fir Working Circle	-	-
			5b/P	126	Deodar/Kail Working Circle	-	-
			5c/P	199	Rehablitation cum Reboishment	-	-
			6/P	366	Rehablitation cum Reboishment	-	-
		Kultair	7/P	230	Rehablitation cum Reboishment	-	-
			8/P	67	Deodar/Kail Working Circle	-	-
			9/P	169	Rehablitation cum Reboishment	-	-
			10/P	140	Rehablitation cum Reboishment	-	-
		Chulna	11/P	41	Rehablitation cum Reboishment	-	-
			12/P	206	Chir Selection Working Circle	-	-
			13/P	260	Chir Selection Working Circle	-	-
			14/P	229	Chir Selection Working Circle	-	-
			15/P	53	Eco-Tourism Working Circle	-	-
		Meer	16/P	75	Chir Working Circle	-	1 No.
			17/P	40	Chir Working Circle	-	-
			18/P	87	Chir Working Circle	-	-
			19/P	60	Chir Working Circle	-	-
	Panjar	Saddal	20/P	165	Chir Working Circle	-	-
			21/P	80	Rehablitation cum Reboishment	-	-
			22/P	60	Deodar/Kail Working Circle	-	-
			23/P	130	Deodar/Kail Working Circle	-	-
			24/P	120	Deodar/Kail Working	-	-

					Circle		
		Lehari Beat Panjar	25/P	175	Deodar/Kail Working Circle	-	-
			26/P	254	Rehablitation cum Reboishment	-	-
			27/P	253	Rehablitation cum Reboishment	-	-
			28/P	157	Chir Selection Working Circle	-	-
		Mongri-I	29/P	90	Deodar/Kail Working Circle	-	-
			30/P	157	Fir Working Circle	-	-
			31/P	239	Deodar/Kail Working Circle	-	-
		Mongri-II	32/P	83	Deodar/Kail Working Circle	-	-
			33/P	43	Deodar/Kail Working Circle	-	-
			34/P	191	Chir Working Circle	-	-
	Damnote	Nali Nika-I	35/P	312	Chir Working Circle	-	-
			36/P	252	Chir Working Circle	-	-
			37/P	257	Reboishment Working Circle	-	-
			38/P	97	Deodar/Kail Working Circle	-	-
			39/P	133	Fir Working Circle	-	-
			40/P	118	Deodar/Kail Working Circle	-	-
			41/P	79	Rehablitation cum Reboishment	-	-
			42/P	212	Reboishment Working Circle	-	-
		Lalli Beat	43/P	143	Reboishment Working Circle	-	-
			44/P	183	Reboishment Working Circle	-	-
			45/P	256	Reboishment Working Circle	-	-
			46/P	156	Reboishment Working Circle	-	-
			47/P	231	Chir Selection Working Circle	-	-
			48a/P	72	Reboishment Working Circle	-	-
			48b/P	35	Deodar/Kail Working Circle		
		Sari Beat	49/P	140	Deodar/Kail Working Circle	-	-
			50a/P	71	Deodar/Kail Working Circle	-	-
			50b/P	105	Reboishment Working Circle	-	-
			51/P	243	Reboishment Working Circle	-	-
			52a/P	200	Reboishment Working Circle	-	-

			52b/P	76	Reboishment Working Circle	-	-
Pancharri	Damnote	Galiote	53a/P	72	Deodar/Kail Working Circle	-	-
			53b/P	344	Reboishment Working Circle	-	-
			54a/P	40	Deodar/Kail Working Circle	-	-
			54b/P	43	Reboishment Working Circle		
			55/P	407	Reboishment Working Circle	-	-
			56/P	301	Reboishment Working Circle	-	-
			57/P	369	Reboishment Working Circle	-	-
	Chai-Lodra	Badhota	58a/P	39	Deodar/Kail Working Circle	-	-
			58b/P	210	Reboishment Working Circle	-	-
			59a/P	100	Deodar/Kail Working Circle	-	-
			59b/P	110	Reboishment Working Circle	-	-
			60/P	53	Deodar/Kail Working Circle	-	-
			61/P	130	Deodar/Kail Working Circle	-	-
			62/P	55	Reboishment Working Circle	-	-
			63/P	51	Reboishment Working Circle	-	-
		Landar	64/P	146	Reboishment Working Circle	-	-
			65a/P	70	Deodar/Kail Working Circle	-	-
			65b/P	69	Fir Working Circle	-	-
		Chai-Lodra	66a/P	155	Fir Working Circle	-	-
			66b/P	151	Deodar/Kail Working Circle	-	-
			67/P	206	Deodar/Kail Working Circle	-	-
			68/P	159	Deodar/Kail Working Circle	-	-
			69/P	172	Deodar/Kail Working Circle	-	-
			70/P	80	Deodar/Kail Working Circle	-	-
			71/P	808	Reboishment Working Circle	-	-

ANNEXURE -8

Statement showing the existing Beats/Blocks of Dudu Range of Udhampur Forest Division

Name of Range	Name of Block	Name of Beat	Comptt. with series	Comptt. Area in Ha.	Working Circle	TSD/FSD	Forest Check Post
Dudu	Bandhole	Marothi	1a/D	548	Wild Life WC	-	-
			1b/D	44	Wild Life WC	-	-
			2/D	367	Wild Life WC	-	-
		Sira-I	3a/D	56	Wild Life WC	-	-
			3b/D	210	Wild Life WC	-	-
		Sira-II	3c/D	237	Wild Life WC	-	-
			3d/D	145	Wild Life WC	-	-
		Dhoona	4/D	83	Wild Life WC	-	-
			5/D	104	Wild Life WC	-	-
		Bandhole	6/D	188	Wild Life WC	-	-
		Compartment 1 to 6 are notified to be under the Wildlife Department ,however at present they are under the administrative control of the Territorial Division					
			7/D	98	Wild Life WC		
			8a/D	48	Wild Life WC		
			8b/D	45	Wild Life WC		
			9/D	472	Wild Life WC		
		Karthal	10/D	174	Deodar/Kail Working Circle	-	-
			11/D	141	Wildlife WC		
			12/D	195	Wildlife WC		
			13/D	49	Fir Selection Working Circle	-	-
			14/D	218	Wildlife WC		
			15/D	1009	Wildlife WC		
			16/D	154	Fir Selection Working Circle		
			17/D	147	Fir Selection	-	-

					Working Circle		
			18/D	128	Fir Selection Working Circle	-	-
			19/D	212	Deodar/Kail Working Circle	-	-
			20/D	160	Rehablitation cum Reboishment	-	-
	Dudu	Jakhed	21/D	78	Rehablitation cum Reboishment	-	-
			22/D	126	Rehablitation cum Reboishment	-	-
			23/D	72	Deodar/Kail Working Circle	-	-
			24/D	82	Rehablitation cum Reboishment	-	-
			25a/D	94	Deodar/Kail Working Circle	-	-
			25b/D	90	Fir Selection Working Circle	-	-
			26/D	210	Rehablitation cum Reboishment	-	-
			27a/D	129	Fir Selection Working Circle	-	-
			27b/D	136	Deodar/Kail Working Circle		
			28a/D	155	Deodar/Kail Working Circle	-	-
			28b/D	86	Deodar/Kail Working Circle		
			29a/D	35	Fir Selection Working Circle	-	-
			29b/D	151	Rehablitation cum Reboishment	-	-
		Chill-I	30/D	205	Fir Selection	-	-

					Working Circle		
			31a/D	106	Fir Selection Working Circle		
			31b/D	84	Deodar/Kail Working Circle		
			32/D	245	Rehablitation cum Reboishment		
			33/D	170	Fir Selection Working Circle		
			34/D	187	Fir Selection Working Circle		
			35a/D	54	Deodar/Kail Working Circle	-	-
			35b/D	163	Fir Selection Working Circle	-	-
			36a/D	789	Wildlife WC		
			36b/D	36	Wildlife WC		
			37/D	1476	Wildlife WC		
			38/D	248	Fir Selection Working Circle	-	-
			39/D	151	Fir Selection Working Circle	-	-
			40 a/D	226	Fir Selection Working Circle		
			40b/D	284	Fir Selection Working Circle		
			41a/D	1460	Wildlife WC		
			41b/D	3050	Wildlife WC		
		Chill-II	42/D	207	Fir Selection Working Circle	-	-
			43/D	203	Fir Selection Working Circle	-	-
			44/D	144	Fir Selection Working Circle	-	-

			45a/D	72	Deodar/Kail Working Circle	-	-
			45b/D	159	Fir Selection Working Circle	-	-
			46/D	1383	Rehablitation cum Reboishment	-	-
			47a/D	64	Fir Selection Working Circle	-	-
			47b/D	175	Fir Selection Working Circle	-	-
			48/D	156	Fir Selection Working Circle	-	-
			49a/D	175	Fir Selection Working Circle	-	-
			49b/D	76	Deodar/Kail Working Circle	-	-
			50/D	178	Rehablitation cum Reboishment	-	-
			51/D	242	Fir Selection Working Circle	-	-
		Pachound-I	52/D	238	Fir Selection Working Circle	-	-
			53a/D	74	Rehablitation cum Reboishment	-	-
			53b/D	113	Rehablitation cum Reboishment	-	-
			54a/D	85	Fir Selection Working Circle	-	-
			54b/D	17	Deodar/Kail Working Circle	-	-
			55a/D	147	Deodar/Kail Working Circle	-	-
			55b/D	112	Fir Selection Working Circle	-	-

			56a/D	91	Deodar/Kail Working Circle	-	-
			56b/D	83	Fir Selection Working Circle	-	-
Dudu	Dudu	Pachound-II	57/D	95	Rehablitation cum Reboishment	-	-
			58/D	78	Rehablitation cum Reboishment	-	-
			59/D	295	Rehablitation cum Reboishment	-	-
	Gharian	Chapper-I	60a/D	211	Deodar/Kail Working Circle	-	-
			60b/D	94	Deodar/Kail Working Circle	-	-
			61/D	187	Rehablitation cum Reboishment	-	-
			62/D	211	Fir Selection Working Circle	-	-
			63/D	202	Fir Selection Working Circle	-	-
			64/D	132	Deodar/Kail Working Circle	-	-
			65a/D	80	Deodar/Kail Working Circle	-	-
			65b/D	170	Deodar/Kail Working Circle	-	-
		Chapper-II	66/D	294	Deodar/Kail Working Circle	-	-
			67a/D	107	Rehablitation cum Reboishment	-	-
			67b/D	140	Deodar/Kail Working Circle	-	-
			68a/D	111	Deodar/Kail Working Circle	-	-

			68b/D	101	Rehablitation cum Reboishment	-	-
			69a/D	44	Rehablitation cum Reboishment	-	-
			69b/D	99	Deodar/Kail Working Circle	-	-
			70a/D	74	Deodar/Kail Working Circle		
			70b/D	68	Deodar/Kail Working Circle		
			71/D	144	Deodar/Kail Working Circle		
		Gharian-I	72/D	139	Deodar/Kail Working Circle		
			73/D	96	Deodar/Kail Working Circle		
			74/D	177	Chir Selection Working Circle		
			75a/D	217	Deodar/Kail Working Circle		
			75b/D	182	Deodar/Kail Working Circle		
			76a/D	204	Deodar/Kail Working Circle		
			76b/D	134	Rehablitation cum Reboishment		
			77a/D	59	Deodar/Kail Working Circle		
			77b/D	55	Rehablitation cum Reboishment		
		Gharian-II	78/D	189	Chir Selection Working Circle		
			79/D	197	Rehablitation cum Reboishment		

			80/D	87	Deodar/Kail Working Circle		
			81/D	249	Fir Selection Working Circle		
			82/D	256	Rehablitation cum Reboishment		
		Nagulta Tandhar	83/D	186	Deodar/Kail Working Circle		
			84/D	227	Rehablitation cum Reboishment		
			85/D	139	Deodar/Kail Working Circle		
			86/D	275	Deodar/Kail Working Circle		
			87a/D	51	Deodar/Kail Working Circle		
			87b/D	208	Chir Selection Working Circle		
			87c/D	185	Chir Selection Working Circle		
			87d/D	90	Rehablitation cum Reboishment		
	Kud	Madha	88/D	101	Rehablitation cum Reboishment	T.S.D Chenani	Chenani
			89/D	141	Rehablitation cum Reboishment		
			90/D	51	Rehablitation cum Reboishment		
		Kud	91/D	167	Eco-Tourism Working Circle	T.S.D Sudhmahadev	
			92/D	103	Rehablitation cum Reboishment		
		Patnitop	93/D	119	Eco-Tourism Working Circle		

			94/D	126	Eco-Tourism Working Circle		
		Karlah-I	95/D	120	Eco-Tourism Working Circle		
			96/D	150	Chir Selection Working Circle		
		Margana	97a/D	109	Chir Selection Working Circle		
			97b/D	72	Chir Selection Working Circle		
			98/D	119	Chir Selection Working Circle		
			99/D	187	Wildlife WC		
			100a/D	124	Wildlife WC		
			100b/D	79	Wildlife WC		
			101a/D	81	Deodar Kail Working Circle	Beat (Karlah-II)	
			101b/D	190	Rehablitation cum Reboishment		
			102a/D	71	Chir Selection Working Circle		
			102b/D	75	Chir Selection Working Circle		
			103a/D	171	Wildlife WC		
			103b/D	166	Wildlife WC		
Dudu	Kud	Mantalai	104/D	58	Rehablitation cum Reboishment		
			105a/D	194	Wildlife WC		
			105b/D	516	Wildlife WC		
			106/D	438	Wildlife WC		
			107/D	208	Wildlife WC		
			108/D	171	Wildlife WC		
			109a/D	286	Wildlife WC		
			109b/D	149	Wildlife WC		

			109c/D	28	Wildlife WC		
			110a/D	42	Eco- Tourism Working Circle		
			110b/D	89	Rehablitation cum Reboishment		
		Bup	110c/D	241	Deodar/Kail Working Circle		
			111a/D	98	Rehablitation cum Reboishment		
			111b/D	78	Chir Selection Working Circle		
			112/D	164	Wildlife WC		
			113/D	210	Wildlife WC		
			114/D	400	Wildlife WC		

ANNEXURE -9

Statement showing the existing Beats/Blocks of Udhampur Range of Udhampur Forest Division

Name of Range	Name of Block	Name of Beat	Comptt. with series	Compt t. Area in Ha.	Working Circle	TSD/ FSD	Forest Check Post
Udhampur	Gudda r Sangia l	Guddar	1/U	203	Rehablitation cum Reboishment	1 No.	-
			2a/U	112	Rehablitation cum Reboishment		
			2b/U	68	Rehablitation cum Reboishment		
			3/U	105	Rehablitation cum Reboishment		
			4/U	94	Rehablitation cum Reboishment		
			5/U	54	Rehablitation cum Reboishment		
		Battal	6/U	85	Chir Selection Working Circle	-	-
			7/U	205	Rehablitation cum Reboishment		
			8a/U	54	Rehablitation cum Reboishment		
			8b/U	89	Rehablitation cum Reboishment		
		Garnai	9/U	119	Rehablitation cum Reboishment	-	-
			10/U	297	Rehablitation cum Reboishment		
			11/U	144	Chir Selection Working Circle		
			12a/U	54	Rehablitation cum		

					Reboishment		
			12b/U	47	Chir Selection Working Circle		
		Mand	13a/U	73	Rehablitation cum Reboishment	-	-
			13b/U	55	Rehablitation cum Reboishment		
			14/U	87	Rehablitation cum Reboishment		
		Tikri	15/U	50	Rehablitation cum Reboishment	-	-
			16/U	47	Chir Selection Working Circle		
			17a/U	40	Rehablitation cum Reboishment		
			17b/U	60	Chir Selection Working Circle		
			18/U	97	Chir Selection Working Circle	Beat (Mand)	
			19a/U	136	Chir Selection Working Circle		
			19b/U	148	Chir Selection Working Circle		
			19c/U	19	Rehablitation cum Reboishment		
			20/U to 33/ U		***Transferred to Reasi Division***		
	Hartayan	Jasarkote-I	34/U	240	Rehablitation cum Reboishment	-	-
			35/U	140	Chir Selection Working Circle		
			36/U	141	Chir Selection Working Circle		
			37/U	198	Deodar-Kail Working		

					Circle		
			38a/U	85	Chir Selection Working Circle		
			38b/U	88	Deodar-Kail Working Circle		
			39/U	149	Chir Selection Working Circle		
		Jasarkote-II	40/U	151	Rehablitation cum Reboishment	-	-
			41/U	118	Rehablitation cum Reboishment		
			42a/U	82	Chir Selection Working Circle		
			42b/U	72	Chir Selection Working Circle		
		Hartayan	43/U	242	Rehablitation cum Reboishment	-	-
			44/U	151	Rehablitation cum Reboishment		
			45/U	253	Rehablitation cum Reboishment		
		Sourap	46/U	99	Rehablitation cum Reboishment	-	-
			47/U	110	Rehablitation cum Reboishment		
	Bhati Mali	Pangara	48/U	177	Rehablitation cum Reboishment	-	-
			49/U	193	Chir Selection Working Circle		
			50/U	138	Rehablitation cum Reboishment		
			51/U	90	Rehablitation cum Reboishment		
		Mali	52/U	117	Rehablitation cum	-	1 No.

					Reboishment		
			53a/U	55	Rehablitation cum Reboishment		
			53b/U	104	Rehablitation cum Reboishment		
			53c/U	123	Chir Selection Working Circle		
			54/U	105	Chir Selection Working Circle		
		Pathi	55a/U	69	Chir Selection Working Circle	-	-
			55b/U	64	Chir Selection Working Circle		
			56a/U	221	Chir Selection Working Circle		
			56b/U	42	Rehablitation cum Reboishment		
			57a/U	55	Chir Selection Working Circle		
			57b/U	54	Rehablitation cum Reboishment		
			58a/U	131	Rehablitation cum Reboishment		
Udhampur	Bali Tirshi	Narore	58b	112	Rehablitation cum Reboishment	-	1 No.
			59/U	107	Rehablitation cum Reboishment		
			60/U	161	Chir Selection Working Circle		
		Tirshi	61/U	206	Chir Selection Working Circle	-	-
			62/U	125	Chir Selection Working Circle		
		Ganger	63/U	157	Chir Selection Working	-	-

		a			Circle		
			64a/U	35	Rehablitation cum Reboishment		
			64b/U	29	Rehablitation cum Reboishment		
			65/U	146	Rehablitation cum Reboishment		
		Bali-I	66/U	198	Rehablitation cum Reboishment	-	-
			67/U	135	Chir Selection Working Circle		
			68/U	81	Chir Selection Working Circle		
		Bali-II	69a/U	70	Rehablitation cum Reboishment	-	-
			69b/U	96	Rehablitation cum Reboishment		
			70a/U	163	Rehablitation cum Reboishment		
			70b/U	39	Rehablitation cum Reboishment		
		Thanidar	71/U	45	Rehablitation cum Reboishment	-	-
			72/U	110	Rehablitation cum Reboishment		
			73a/U	130	Rehablitation cum Reboishment		
			73b/U	20	Rehablitation cum Reboishment		
	Charat Pakhalai	Charat	74a/U	68	Chir Selection Working Circle	-	1 No.
			74b/U	54	Rehablitation cum Reboishment		
			75/U	83	Chir Selection Working		

					Circle		
			76/U	82	Chir Selection Working Circle		
			77/U	119	Chir Selection Working Circle		
		Pakhalai	78/U	92	Chir Selection Working Circle	-	-
			79a/U	91	Rehablitation cum Reboishment		
			79b/U	96	Rehablitation cum Reboishment		
			80/U	146	Chir Selection Working Circle		
			81/U	84	Chir Selection Working Circle		
			82/U	113	Chir Selection Working Circle		
		Ossu-I	83/U	108	Chir Selection Working Circle	-	-
			84a/U	60	Rehablitation cum Reboishment		
			84b/U	224	Chir Selection Working Circle		
			85a/U	47	Rehablitation cum Reboishment		
			85b/U	78	Chir Selection Working Circle		
			86a/U	122	Chir Selection Working Circle		
			86b/U	74	Chir Selection Working Circle		
		Ossu-II	87a/U	41	Chir Selection Working Circle	-	-
			87b/U	111	Chir Selection Working		

					Circle		
			88/U	92	Rehablitation cum Reboishment		
			89/U	125	Chir Selection Working Circle		
		Thanoa	90/U	116	Rehablitation cum Reboishment	-	-
			91/U	86	Rehablitation cum Reboishment		
			92/U	98	Rehablitation cum Reboishment		
		Suglar	93/U	133	Rehablitation cum Reboishment	-	-
			94/U	59	Chir Selection Working Circle		
			95a/U	167	Chir Selection Working Circle		
			95b/U	194	Rehablitation cum Reboishment		
			96/U	166	Rehablitation cum Reboishment		
			97/U	123	Chir Selection Working Circle		
			98/U	74	Rehablitation cum Reboishment		
			99/U	79	Rehablitation cum Reboishment		
Udhampur	Rakh Block		Jaghanoo	58	Wild Life Working Circle		
			Dhramthal	30	Wild Life Working Circle	-	-
			NehraNal	147	Wild Life Working Circle	-	-
			Lansi	11	Wild Life Working	-	-

					Circle		
			Kotli	100	Wild Life Working Circle	-	-
			Sansooh	87	Wild Life Working Circle	-	-
			Tandeh	39	Wild Life Working Circle	-	-
			Thanoa	355	Wild Life Working Circle	-	-

ANNEXURE -10

Detail of Renovation Of Boundary Pillars of different Forests of Udhampur Forest Division W.E.F 1997-98 to Till Date

DIVISION	YEAR	RANGE	NAME OF FOREST	COMPARTMENTS	No. OF BPs FIXED
UDHAMPUR	1997-1998	DUDU	PATNIDHAR	89,91,93,94/D	267
	1998-1999	UDHAMPUR	JASSARKOT	34-42/U	501
	1999-2000	UDHAMPUR	MOGRI	58-69/U	188
		PANCHERI	CHULLNA	12-19/P	364
		PANCHERI	JANORI	12-19/P	24
	2003-2004	UDHAMPUR	OSSU PAHKHLAI	80,88/U	165
		UDHAMPUR	KARAI DHAR	1-6/U	250
		UDHAMPUR	SAGLAR BLETAR	93-94/U	244
	2004-2005	PANCHERI	LALI SARI	44-50/P	620
	2005-2006	PANCHERI	CHAI LODHRA	66-69/P	291
		DUDU	SIRA	3/a,b	294
		DUDU	PATTANGARH	3/D	96
	2006-2007		SIDAKA		130
			NUKULTA		216
			BINDERA		154
	2007-2008		PIPAL PROAHU		111
			BALI MORH		34
		DUDU	KHODHAMI KHANI		191
		UDHAMPUR	GARNAI		123
	2010-2011	DUDU	BANDOLE	6/D	160
		DUDU	KHANDIR	91/D	44
	2011-2012	DUDU	MARGANA	97,98/D	216
		DUDU	KHARANGAL	88/D	37
		DUDU	RAKH BADONGA	88/D	10
		DUDU	MANTALAI	110/D	41
	2012-2013	DUDU	GURHA MUROTHI	3/D	40
		DUDU	RANKI KURWAR	53/D	215
		DUDU	NAKHU-THER KARLAH	96,101/D	416
	2013-2014	DUDU	BARKOOT	104/D	50
		DUDU	RAKH BANJOI	102/D	9
		DUDU	MUROTHI	1/D	84

ANNEXURE -11

Nursery Statement in respect of Udhampur Forest Division

S. No	Details of the Nursery				
	Name of Nursery	**Location with Adjacent village**	**Gross Area**	**Effective Area**	**Capacity to produce plants/ type of plants**
1	Mand	Mand	1.50 Ha.	1.25 Ha.	1.20 lacs plants (approx)
2	Santhali	Chulna	1.00 Ha.	0.80 Ha.	0.60 lacs plants (approx)
3	Thathli	Thathli	1.05 Ha.	1.00 Ha.	0.80 lacs plants (approx)
4	Margana	Akla, Bain	0.75 Ha.	0.70 Ha.	0.75 lacs plants (approx)
5	Kassal	Karlah	0.10 Ha.	0.08 Ha.	0.40 lacs plants (approx)