

PART – II
FUTURE MANAGEMENT DISCUSSED AND PRESCRIBED.
CHAPTER – I. BASIS OF SALS
SECTION –I GENERAL OBJECTS OF MANAGEMENT.

INTRODUCTION.

125. All the forests in this division are property of Government has they use to bring an annual revenue of the order of Rs. 23,73,675/-. More than three thousand cubic meters of timber and more than five thousand cubic meters of firewood of extracted annually. These forests also yield over even thousand tones of bamboo annually. Besides, there are biri leaves, gums, etc. that are extracted to meet the demands of the trade. A valuable property like this spread over an area of 1293.5 sq km. required proper management. The land had greater potentialities and a sound management technique will not only maintain the forests in perpetuity but will also enable to exploit the capabilities of the land to the fullest extent, increasing the revenue manifold. Instead of just exploiting the forests their multiple use potentialities have to be fully utilized, even after making suitable investments where need be farther the forests of this division are important from the stand point of soil conservation also. These forests fall within the Ganga Basin and from the lower catchments of the river south Koel. These forests have therefore, an important role to play in flood control in general, and to protect the some barrage in particular. Only a decade or two ages, these forests were more than adequately stocked with wild animals the number of which has fast decreased on account of poaching. If given proper protection, the number can again increase within a short period.

126. **OBJECTS OF MANAGEMENT**

The general objects of management therefore are:-

- (a) to protect, maintain and improve the growing stock.
- (b) to provide a good forests cover to the water sheds.
- (c) to protect and increase wildlife population of the area.
- (d) consistent with the above, to obtain the maximum sustained yield to forest produce for the following purposes:-
 - (i) to meet the bonafide requirement of timber, fuel, bamboo, grass etc. of the right holders.
 - (ii) to meet the demands of the people who have not got right on forest and to meet the demands of trade from the surplus if any

SECTION – II METHODS OF TREATMENT TO BE ADOPTED

127. The forests of this Division are heavily right burded and are surrounded by thickly populated agricultural tracts. There is, therefore a strong demand for fuel, poles and small size timber for house construction and agricultural implements. There is a ready market for the above categories of produce. Salai on account of its demands will have to be worked under the selection system. Forests containing other miscellaneous species and sal will be placed under the protection working circle.

128. Degraded areas, and areas having crop density of 0.2 or less will be placed under rehabilitation working circle. Older plantation areas, where

plantation exists and blank areas suitable for plantation will be placed under plantation working circle where plantation will be raised and soil conservation measures will be adopted depending on the demand of the site.

129. Essentially a pioneer species khair grows all types of forests. It is the commonest species on blank liable to frost. It regenerates under height cover in open especially in loose soil. It will not stand shade. Nor regenerate under shade, young trees coppice moderately in the open, but under shade the shoots die. Khair regeneration is satisfactory in part of Chhatarpur East, Chhatarpur West and Manatu Range of the Division. Most of these regeneration area is in 2"-4" in diameter class. As khair takes longer period of about 20 years for its maturity, keeping present condition of khair in view, no provision for khair working circle has been made in the plan.

SECTION -III, WORKING CIRCLE REASONS FOR CONSTITUTION THEIR DISTRIBUTION AND AREA

WORKING CIRCLE:

130. The following working circle have been constituted :-

- (1) The protection working circle.
- (2) The Salai Working circle.
- (3) The Bamboo working circle
- (4) The Rehabilitation working circle
- (5) The Plantation working circle

REASON FOR THEIR CONSTITUTION:-

131. The protection working circle includes area having gradient of about 45%, area affected by soil erosion, and areas where altitude above m.s.l is 500 mts. and above. No felling will be done in these areas. Only soil conservation measures will be adopted and rigid protection will be assured. Right holder's requirement if any will be met from dead, seeing moribund and fallen trees involving village Forest Protection Committee.

132. The Salai selection working circle included such areas as have 50% or more of salai in the crop. Salai is the main species here and all operations will be done in its favour. Small dimensioned salai has no market hence only bigger trees have to be felled for extraction. However as the area has other prescribed for three also felling and other rules have to be prescribed for them also.

133. The bamboo working circle is an overlapping working circle and includes bamboo areas wherever found. This species also requires special prescriptions.

More over to have viable coupes, the area has to be much larger than that of coppice coupes and the frequency of operation has to be quicker. The bamboo working circle comprises such areas as contain very maltreated clumps of bamboos requiring enrich the growing stock. This working circle is also an overlapping working circle.

134. The Rehabilitation working circle included such areas which contain a very degraded crop unworthy of exploitation. It covers semi blanks. These areas require special prescriptions for improvement. Afforestation has to be done in semi blank areas having crop density of 0.2 less with the object to replace uneconomical species by more valuable species.

135. The plantation working circle includes blank areas suitable for plantation, areas worked over by state trading divisions in past and areas where plantation has not been successful. Plantation will be taken up blank areas, soil conservation works also will be done according to demands of the site. Successful plantation will be worked under clear felling and section system according to suitability of the existing plantation.

Area under various working circle in acres.

136. The list of village Forest Protection committee has been given in the following table. During the course of stock mapping it has been found most of these committee has not left any appreciable mark either in forest protection or development purpose:-

Table – 15

Sl no.	Name of joint forest management committee	Name of Vill. Which includes in joint forest management committee	Population of Vill. Which includes in committee	Forest Area	Remarks
1	2	3	4	5	6
1.	Chandegir	Chandegir, Genta	1311	594.28	Active
2.	Kewatbar	Kewatbar	500	1247.56	"
3.	Bandubar	Bandubar, Konwai	4255	4411.82	Not more Active
4.	Tal	Tal, Chhaper, Parsanwa	1003	1452.38	"
5.	Telari	Telari, Onkaraha, Arar, Akabasa	3488	3482.10	"
6.	Khorhi	Khorhi, Chegauna	2186	203.14	"
7.	Murumdag	Murumdag, Zera, Dali, Sahi	5568	2787.57	"
8.	Saraidih	Saraidih	2533	-	Lower grade
9.	Deonar	Deonar, Hulsi Kuurd, Hulsi kalan	284	1042.29	"
10.	Nawadih	Nawadih, Harani,	992	782.24	"
11.	Dinadag	Dinadag, Gosaindih	2118	463.35	"
12.	Khendara	Khendara	1298	926.95	Active
13.	Kurmipur	Kurmipur	2753	858.82	"
14.	Marwa	Marwa	-	888.82	More Active
15.	Sironiyan	Sironiyan	-	258.82	"

16.	Sarsot	Sarsot	1504	338.20	"
17.	Derwa	Derwa, Nagesar, Dulhi, Rabadi	1552	889.64	More grade
18.	Kisaini	Kisaini, Jamuniya	666	1592.23	"
19.	Balgara	Balgara, Lamba, Sathe.	940	924.74	Active
20.	Barwadih	Barwadih, Chilhi	1186	850.54	Not more Active
21.	Sewati	Sewati	497	822.37	Active
22.	Tetar	Tetar	1527	459.88	Not more Active
23.	Jaspur	Jaspur, Ghaghari	1098	2900.63	"
24.	Kadhawan	Kadhawan	986	84.50	Active
25.	Pachghara	Pachghara	534	702.56	Not more Active
26.	Tona	Tona	1156	316.51	"
27.	Saraiya	Saraiya	217	290.90	More Active
28.	Maghigawan	Maghigawan, Karupa	296	407.40	Not more Active
29.	Kelhar	Kelhar, Semari, Patan	5063	499.89	Active
30.	Karma	Karma	1471	534.89	Not more Active
31.	Larbandhwa	Larbandhwa, Kolhwa	1433	2351.55	"
			47,393	23,496.29	

CHAPTER -02

Working plan for protection working circle.

138.

1. GENERAL CONSTITUTION OF THE WORKING CIRCLE AND CHARACTER OF THE VEGETATION:

Forest areas of Manatu, Patan, South-east protion of Chhatarpur East Range, South-West portion of Chhatarpur West Range and southern parts of Mohammadganj Range are in normal of three types as per Champion classification:-

5B/C2. 5DSI and 5/E4. These forests are posted under protection working circle. There is need for better protection with the help of local people and right holders forming forest protection committee. Such committees are essential for better protection of forests, with help of local forest guards /foresters.

2. This working circle has been constituted with the areas where altitude is 700m. above M.S.L. and having steep slopes. The areas with no natural regeneration have also been included in this working circle as the area has potential for natural regeneration given rigid protection. The total area allotted under this working circle 160767.44 Acres.

3. Special objects of management:-

140. (i) Area above 700m M.S.L. height has to be protected from felling.
(ii) No felling on steep slopes to conserve the soil to reduce the run off and
(ii) Assess the effect of the soil conservation treatments.

Area :-

141. The range wise area under this working circle are as follows:-

Table No. 16

Sl no.	Name of range	Protection working circle			
		Sal rooted waste area (acres)	Miss cell rooted wast (acres)	Khair area with Girth less than 6" (acres)	Degraded Bamboo area (acres)
1	2	3	4	5	6
1.	Chhatarpur East	1238.51	22321.96	-	-
2.	Chhatarpur West	1590.84	17470.40	95.82	-
3.	Md. Ganj	816.00	30350.84	-	-
4.	Patan	6504.70	9251.18	-	778.05
5.	Manatu	11566.81	20134.36	676.68	3396.98
6.	Kundri	12673.63	21910.68	-	-
Total		34390.49	121439.42	772.50	4165.03

The village wise area is given in appendix- II

METHOD OF TREATMENT

142. The area will be treated as follows:-

- (i) It will be closed for grazing till 2008-09 i.e. during the plan period.
- (ii) It will be rigidly protect from fire.
- (iii) Constant vigil should be made of ensure control of illicit felling.
- (iv) Contour trenches of size 60 cm. * 45 cm. * 30 cm. will be dug along contour lines for moisture conservation where site permits.
- (v) Gully plugging with stone boulders will be made where required.
- (vi) Pucca check dames will be made in feeder channels of rivers for silt detention.

- (vii) Since these forests are right burdened, there for, all protection works will be done with help of village forest protection committee.

CHAPTER – III

WORKING PLAN FOR THE SALAI – WORKING CIRCLE

SECTION- I GENERAL CONSTITUTION OF THE WORKING CIRCLE AND CHARACTER OF THE VEGETATION.

143. As mentioned before, this working circle includes such areas which have 50% or more of salai in the crop. Salai is the main species in this working circle and all operations will be done in its favour. The area under this working circle is 11538.08 acres.

144. There are 3 felling series each confined to the boundaries of a range. The vegetation included in this working circle is of type 5/E2. The forests of this working circle are normally on hills. Areas which contain only salai seedlings or saplings or where a few small shoots of this species are found growing on high stumps have not been included in the working circle. Such areas have been allotted to the Rehabilitation working circle.

SECTION – II, SPECIAL OBJECTS OF MANAGEMENT

145. Salai which was of little economic value earlier, has been gaining importance for its use in the packing and paper pulp industry. This latter use has made it an important species of its habitat. With improvement of density of the crop and accessibility of the area, the value per unit area is bound to increase. Such areas are usually on hills having degraded sites and require special treatments; hence the Salai working circle has been formed with the following special objects.

- (a) to give preferential treatment to Salai.
- (b) to improve the existing crop in composition, structure and density.
- (c) to remove unhealthy and over mature trees to make room for better ones;
- (d) to protect the area from erosion and deterioration, and
- (e) consistent with the above, to harvest utilizable trees for the market on the basis of sustained annual yield.

SECTION – III, METHOD OF TREATMENT

SILVICULTURAL SYSTEM:-

146. Only higher sized trees of Salai are marketable. Due to the irregular nature of the crop, such trees are spread all over the area. Moreover needs of soil conservation rule out clear felling. Hence the system prescribed is the selection system.

CHOICE OF SPECIES:-

147. The principal species is salai and all treatment will be done in its favour. Other miscellaneous species will be treated as second grade species in its favour and have to make room for salai, where khair or bamboo occurs it will be worked under the protection and bamboo over lapping working circle. Other species, except salai will be marked for felling, if they are 45 cm. in g.b.n. or more.

Exploitable size:-

148. It is not desirable to fix the exploitable girth or salai on the basis of maximum volume production because the value of salai deteriorates with increase in the heart wood. Salai poles are used for paper pulp but planks are also in demand for packing cases. 95 cms. is considered a suitable g.b.n. for exploitation of salai but the consideration mentioned before lead to fixing the exploitable girth as 125 cm. under this plan.

149. For other species, except khair and bamboo, the exploitable girth will be 45 cm. This exploitable size was been kept low so as to make enough room for salai regeneration and growth. At the same time it will yield poles for useful purposes.

STOCK MAPS:-

150. Stock mapping has been done on 4" = 1 mile reduced form the demarcated cadastral maps of the scale 16"= 1 mile. As no topographical features were shown on these maps the location of the areas were some times difficult for the staff to judge which areas contained 50% or more or salai to come into the salai selection working circle. Some modification were made but due to shortage of time and fund it was not considered desirable to go all over the area once more and correct all the stock maps when tope sheets were available.

Felling series

Range wise area distribution is given in table No. 17

Felling series	Range	Salai area in acres
1	2	3
Chhatarpur East	Chhatarpur East	2050.71
Patan	Patan	5287.30
Manatu	Manatu	4200.07
Total		11,538.08

List of forest placed in the different felling series of this working circle is given in table-18

Chhattarput East Range:-

Sl no.	Name of F.S.	Thana	Thana No.	Series Area in acres
1	2	3	4	5
1.	Karma	Chhattarput	389.00	1929.53
2.	Deonar	"	394.00	121.18
Total				2050.71

Patan Range:-

1.	Lamba	Patan	267.00	452.85
2.	Patan	"	260.00	324.35
3.	Balgra Khurd	"	266.00	47.30
4.	Balgra Kal.	"	265.00	431.90
5.	Angara	"	296.00	33.00
6.	Chemta	"	317.00	2608.65
7.	Role	"	320.00	377.77
8.	Tilaiya	"	316.00	1011.48
			Total	5287.3

Manatu Range:-

1.	Nawadiha	Patan	346.00	606.31
2.	Tal	"	510.00	102.73
3.	Jhumari	"	513.00	252.53
4.	Jaspur	"	515.00	2900.63
5.	Burhia Tar	"	478.00	337.87
			Total	4200.07

Name of the Range: Patan, Name of the Beat:- Patan, Name of the F.S. :- Patan

Sl No.	Name of forest	Thana & Thana No.	Area taken in this coup	Proposed seed felling series
1	2	3	4	5
1.	Patan- (P)	Patan 260	300.00	1998-99
2.	(a) Patan (P) (b) Lamba- (P)	" 260 267	24.35 <u>200.00</u> 224.36	1999-2001
3.	Lamba- (P)	" 267	252.85	2000-2001
4.	Balgara Kalan (P)	" 265	231.90	2001-2002
5. (a)	Balgara Kalan (P)	" 265	200.00	
5. (b)	Balgara Khurd (P)	" 266	47.30	2002-2003
			247.30	
6. (a)	Angara (P)	" 296	33.00	
6. (b)	Role (P)	" 320	277.77	2003-2004
			310.77	
7. (a)	Role (P)	" 320	100.00	
7. (b)	Tilaiya (P)	" 316	200.00	2004-2005
			300.00	
8.	Tiyaiya - (P)	" 316	250.00	2005-2006
9.	Tiyaiya - (P)	" 316	250.00	2006-2007
10.	Tiyaiya - (P)	" 316	250.00	2007-2008

11.	Tiyaiya - (P)	"	316	61.48	
(a)					
(b)	Chetana - (P)	"	317	200.00	2008-2009
				261.48	
12.	Chetana - (P)	"	317	250.00	2009-2010
13.	Chetana - (P)	"	317	250.00	2010-2011
14.	Chetana - (P)	"	317	250.00	2011-2012
15.	Chetana - (P)	"	317	250.00	2012-2013
16.	Chetana - (P)	"	317	250.00	2013-2014
17.	Chetana - (P)	"	317	260.00	2014-2015
18.	Chetana - (P)	"	317	260.00	2015-2016
19.	Chetana - (P)	"	317	260.00	2016-2017
20.	Chetana - (P)	"	317	378.65	2017-2018
			Total	5287.30	

/105/Name of F.S.- Manatu

Sl No.	Name of forest	Thana & Thana No.	Area taken in this coup	Proposed seed felling series
1	2	3	4	5
1.	Naudiha- (P)	Patan 346	306.31	1998-1999
2.	Naudiha- (P)	" 347	300.00	1999-2000
3.	Budhiya Tar- (P)	" 478	237.87	2000-2001
4. (a)	Budhiya Tar- (P)	" 478	100.00	2001-2002
(b)	Tal	" 510	102.73	
			202.73	
5.	Jhumri	" 513	252.53	2002-2002
6.	Jaspur- (P)	" 515	200.00	2002-2003
7.	Jaspur- (P)	" 515	200.00	2003-2004
8.	Jaspur- (P)	" 515	190.00	2004-2005
9.	Jaspur- (P)	" 515	190.00	2005-2006
10.	Jaspur- (P)	" 515	190.00	2006-2007
11.	Jaspur- (P)	" 515	190.00	2008-2009
12.	Jaspur- (P)	" 515	190.00	2009-2010
13.	Jaspur- (P)	" 515	190.00	2010-2011
14.	Jaspur- (P)	" 515	190.00	2011-2012
15.	Jaspur- (P)	" 515	190.00	2012-2013
16.	Jaspur- (P)	" 515	190.00	2013-2014
17.	Jaspur- (P)	" 515	190.00	2014-2015
18.	Jaspur- (P)	" 515	200.63	2015-2016
19.	Jaspur- (P)	" 515	200.00	2016-2017
20.	Jaspur- (P)	" 515	200.00	2017-2018
		Total	4200.07	

Name of F.S. :- Chhattarpur East

Sl No.	Name of forest	Thana	Thana No.	Area taken in this coup	Proposed seed felling series
1	2	3		4	5
1.	Deoner	Chhattarpur	394	121.18	1998-1999
2.	Karam - (P)	"	389	100.00	1999-2000
3.	Karam - (P)	"	389	100.00	2000-2001
4.	Karam - (P)	"	389	100.00	2001-2002
5.	Karam - (P)	"	389	100.00	2002-2003
6.	Karam - (P)	"	389	100.00	2003-2004
7.	Karam - (P)	"	389	100.00	2004-2005
8.	Karam - (P)	"	389	100.00	2005-2006
9.	Karam - (P)	"	389	100.00	2006-2007
10.	Karam - (P)	"	389	100.00	2007-2008
11.	Karam - (P)	"	389	100.00	2008-2009
12.	Karam - (P)	"	389	100.00	2009-2010
13.	Karam - (P)	"	389	100.00	2010-2011
14.	Karam - (P)	"	389	100.00	2011-2012
15.	Karam - (P)	"	389	100.00	2012-2013
16.	Karam - (P)	"	389	100.00	2013-2014
17.	Karam - (P)	"	389	100.00	2014-2015
18.	Karam - (P)	"	389	100.00	2015-2016
19.	Karam - (P)	"	389	100.00	2016-2017
20.	Karam - (P)	"	389	129.53	2017-2018
			Total	2050.71	

Annual coupes:-

151. Since yield has been prescribed by area therefore annual coupes have been shown in the map. The felling cycle being a period of 20 years, one twentieth of the felling series area may be taken as a rough guide for the coupe area. The actual area of the coupe will depend upon the density of the crop. A deviation of 10% will be allowed to straighten the coupe line or to include or exclude the whole of a small patch of forest. However, it should be endeavored to make up the deviation next year. Forests for lying in the table page 17 and 18 which shows the sequence of fellings. In the tenth year viz 2009-10 the position will be reviewed to examine proportion of area covered by coupes.

SECTION- VI METHOD O EXECUTING THE FELLINGS DEMARCATION OF ANNUAL COUPES:-

152. The salai selection working circle is not an overlapping working circle. Hence its boundaries with the other working circle will have to be demarcated at the time of laying out coupes. The areas allotted to this working circle have been shown on 4"=1 mile topographical maps. Annual coupes would be demarcated by 1.5m cleared lines and at suitable intervals trees on he coupe side of the lines will have three coaltarrings at breast height.

The detailed enumeration could not be carried out due to certain constraints. The yield has been regulated by area and deficit area has not been included in the coupes.

Rule for marking:-

153 (a) All salai trees of and over 152 cm in g.b.n will be marked for felling.

(b) All salai trees even below 125 cm g.b.n which are manifestly hollow or top broken will also be marked. They will not count towards yield prescribed in this plan though they will also be recorded in the marking list.

(c) Khair and bamboo will not be felled under this working circle. Bamboo will be felled according to the prescriptions for bamboo overlapping working circle.

(d) Marking will be done with digits and hammer after removing the bark in patches of 10 cm * 15 cm at breast height and at the base of the tree.

EXECUTION OF FELLING:-

154. (a) All marked trees must be cut as low as possible but the lower mark must be left intact.

(b) No felling will be done from the first of July to fifteenth of October.

(c) At the time of felling care should be taken not to damage the existing crop.

(d) In case a coupe is not worked when due, it may not be worked next year but should be carried over later for working.

SECTION- VI SUBSIDIARY SILVICULTURAL REGULATION

155. Salai is a very good species for paper pulp. Its only drawback is that in nature it does not form a pure crop, and in a mixed crop generally the incidence is not very high. Daltonganj North Division is eminently suited to Salai. Hence wherever regeneration is poor salai may be planted up if funds permit. This planting will only supplement natural regeneration and should follow felling.

SUBSIDIARY CULTURAL OPERATION:-

156. In year the main felling the following operation will be carried out:-

(a) Any tree damaged in the course of felling will also be cut back.

(b) Seedlings and saplings of salai will be given close attention and if top broken, malformed or defective, would be cut back flush to the ground level. They would be freed completely from climbers and from shade of inferior species.

(c) Coppice shoots be reduced to two or three per stool.

(d) Climber will be cut and removed from all salai plants.

CLEANING

157. This operation may be executed in the 10th year after the main fellings and will consist of:-

(a) Reduction of coppice stools to one per stool.

- (b) Freeing of coppice shoots, seedlings and saplings from overtop of inferior species.
- (c) Removal of congestion by cutting out the inferior items, and
- (d) Cutting and removal of climbers from all salai plants.

SECTION- VI OTHER REGULATIONS:-

Grazing:-

158. The demand for grazing in the areas allotted to this working circle is fairly heavy and the crop has been deteriorating due to grazing and lopping. Although desirable, it is not possible at this stage to stop grazing altogether. Hence grazing will be stopped only for one year in the last year's coupes. However, where natural regeneration has been supplemented with artificial regeneration the area so planted will be fenced for five years and grazing should be stopped for all these years.

EXERCISE OF RIGHTS:-

159. All these forests are burdened with rights. Right holders, however are not interested in taking salai tree. They need household timber and firewood. In the forests which have their parts allotted to the Coppice working circle, the rehabilitation working circle or the plantation working circle, the rights will be met from those working circle. However in the forests, which have completely been allotted to the salai working circle, the rights will be met from the trees marked for felling. In such cases marking will be done a year in advance and after assessing the requirements of the right holders the requisite number of trees will be handed over to the Mukhiya. Felling will be done in the presence of forest staff and all such felled stumps will be hammer marked. Necessary entries will also be made in a register to show which trees have been taken by which person.

SECTION - VII INTERMEDIATE REVISION OF THE WORKING PLAN.

REVIEW:-

160. It is necessary to review the position in the year 2012-13 to see the proportion of area covered by the coupes upto that year. This proportion has to be compared with the past crop felled and the future crop to be felled. It is found to be all right there would be no need for any adjustment. If, however, the proportion shows that a large area has been covered than is desirable, the area of coupe has to be reduced.

CHAPTER IV

WORKING PLAN FOR BAMBOO WORKING CIRCLE

SECTION- I GENERAL CONSTITUTION OF THE WORKING CIRCLE AND CHARACTER FO THE VEGETATION:-

161. 1. This working circle which is an overlapping working circle contains all exploitable bamboo bearing areas. The total area of the forest under the bamboo working circle is 26,997.43 acre out of which the bamboo bearing is 26,483.98 acre.

2. Dendrocalamus strictus is the only species of bamboo found in the area. It is generally found in miscellaneous forests as mentioned.

3. In the previous plans most of the bamboo forests of this division were being worked under a 4 year felling cycle. In this working plan also a 4 year felling cycle is being proposed. No bamboo area worth exploitation in Kundri Range has been found during stock mapping hence felling cycle as proposed in Sri. B.N. Sinha's plan (74-75 to 83-84) is retained but felling series is being reorganized. Thus there will be 9 felling series under this plan. The forests will be worked according to the prescriptions of this plan with immediate affect.

SECTION- II SPECIAL OBJECTS OF MANAGEMENT

162. Bamboo is an important raw material for paper and is very much in demand due to the increasing demand of paper. At the same time the local villagers also need plenty of bamboos for house building and agriculture implements. The Turies also need bamboo or manufacture of baskets, etc. Hence the special 4 objects of management are:-

- (a) To improve the growing stock by regulation cutting on a sound silviculture basis.
- (b) To meet the demands of the local right holders and those people who have not got any right.
- (c) To meet the demand of the paper mills, and
- (d) To give preferential treatment to bamboo in its habitat.

SECTION- II, METHOD OF TREATMENT

Silvicultural System:-

163. The silvicultural system to be followed may be termed as the selection system is as much as only the selected culms are to be felled.

164.

FELLING CYCLE:-

As in he previous plan the felling cycles is proposed in this working plan also of 4 years.

165.

STOCK MAPS:-

Stock mapping has been done and an endeavor has been made to make the coupes equiproductive.

166.

FELLING SERIES:-

There are 9 felling series in all. Their range wise distribution is given in table No. 19
167.

ANNUAL COUPES:-

There are 4 coupes in each felling series and they have been marked as A,B,C, and D. The list is given on Page to

SECTION IV-, METHOD OF EXECUTING THE FELLINGS:-

DEMARCATION OF ANNUAL COUPES:-

The reconstitution of felling series and their division in to 4 coupes have been prescribed in the previous plan. These coupes will have to be re-laid on the ground, for although the name of the felling series might have been regained, the constitution of the felling series and the coupe area are likely to be quite deferent form those of the previous plan. The bamboo coupes will be demarcated on the ground by 1.5 clear lines and at suitable intervals trees on the coupe side of the lines will be given plus (+) mark coaltar at breast height.

168.

FELLING RULES:-

The following bamboo felling rules are prescribed:-

(a) Culms less than a year old commonly known as Karils shall not be cut or damaged.

(b) Older healthy green culms equal to the number or Karils shall be left, provided that the total of such older culms must not be less than six in any clump. In case there is no Karil in any clump older, healthy green clump shall be left.

(c) No clump containing less than 8 green culms shall be worked except for the purpose of cleaning the culms and the high stumps.

(d) The clumps should be worked from inside out. The older culms should be left mostly on the periphery so as to provide necessary support to the Karils.

(e) Except the culms to be retained under the above rules, all other culms in the clump including damaged, dying or dead culms shall be felled.

(f) Every clump shall be cleaned of debris to a distance of atleast one meter as a precaution against forest fire.

(g) Only green stumps 1.2 metes or more in height may be left to be counted towards the requisite number of older culms in deficit clumps. Stumps less than 1.2 meter high should be allowed to be cut just above the second visible node or at 30 cm. from the ground level whichever is lower. In leaving such high stumps as are 1.2 meters or more in height care should be taken that older culms are first counted, and if their number falls these high stumps (1.2 meter or more in height) are to be left. It should be noted that these high stumps are not to be taken as full culms and are not be equated with them. They are to be left only to make up the deficiency.

(h) In the case of deficient clumps only the older culms of older high stumps that are to be retained should be ringed with coaltar, karils need not be ringed. The marking should be as low as possible and in any case not above the second node.

SECTION- V, OTHER REGULATIONS.

EXERCISE OF RIGHTS:-

170. The present practice of laying out a section in the coupe, having 1/5th of the total coupe area, for meeting local demands would continue. The right holders will take their requirements of bamboo from this section. Their requirements will, however, be first assessed by the Range Officer and then Guard. Bamboo felling rules will be rigidly followed by them. Felling by right holders will be allowed from the 16th October to the 15th May every year.

2.

SUPPLY TO TURIS:-

171. (a) Turies earn their livelihood by making baskets, etc. from bamboos and regular supply of bamboo to them has to be ensured to prevent theft. All facilities should be extent to them for obtaining requirements. They will first be allowed to cut bamboo in the 1/5th section of the coupe meant for local supply and if the demand is greater, they should be allowed to cut in other sections also. Bamboo felling rules will be followed.

(b) As supply of bamboos to Turies is a permanent feature, it would be better if the Divisional Forest Officer prepares a list of these persons and allots nearest coupe to them. The days when the Turies go to the forest should be fixed by the Divisional Forest Officer and all fellings should be done in the presence of a Forest Guard.

SECTION – VI PLANTING OPERATION.

PLANTING AND TENDING:-

172. As the density of the crop is low it is necessary to plant up the blanks with bamboo in suitable site. For this no clear felling will be done. The planting & tending techniques will be the same as prescribed under section for the plantation working circle.

FENCING:-

173. Fencing is necessary for protection. It prevents the cattle form entering this area and also creates a psychological barrier in the midst of the villagers. Wherever possible trench fencing will be done and where the terrain does not allow trench fencing barbed wire fencing will be done. The outer fencing line will coincide with the boundary line of the forests and the inner lines will coincide with the bamboo coupe lines. The most vulnerable spots will be taken up first.

BAMBOO FELLING SERIES:-

There are 9 felling series in all. Their range wise distribution is given below:-

Sl no.	Name of Range	No of felling series	Bamboo area in acres	Total Forest area in acres.
1	2	3	4	5
1.	Patan	1	2196.73	2196.73
2.	Chhatarpur East	1	1872.38	2027.38
3.	Md. Ganj	2	3964.62	4305.07
4.	Manatu	5	18,450.25	18,450.25
5.	Chhatarpur West	-	-	-
6.	Kundri	-	-	-
Total		9	26,483.98	26,979.43

Annual Coupes:

174. There are 4 coupes in each felling series and they have been named as A,B,C, and D the List is given below:-

Bamboo felling series

Name of felling series : Tarundag

Name of Range : Patan

Sl No.	Name of forest	Thana	Thana No.	Total area of forest (acres)	Area included in coupes (acres)	No. of coupe	Net area of coupe (acres)	Total area of felling series (acres)
1	2	3	4	5	6	7	8	
1.	Tarudan (Part)	Patan-3	311	550.00	550.00	A	550	
2.(a)	Tarudan (Part)	Patan-3	311	427.26	427.26	B		
(b)	Khardih a (Part)	Patan-3	309	100.00	100.00		527.26	
3.	Khardih a (Part)	Patan-3	309	550.00	550.00	C	550	
4.	Khardih a (Part)	Patan-3	309	569.27	569.27	D	569.27	2196.73

CHHATARPUR EAST RANGE

NAME OF FELLING SERIES : DAGRA

1.	Dagra (Part)	Chh	402	450.00	450.00	A	450.00	
2.	Dagra (Part)	Chh	402	471.45	471.45	B	471.45	
3.	Anta Khurd	Chh	402	522.82	367.82	C	367.82	
4.	Gorho	Chh	402	583.11	583.11	D	583.11	1872.38

MOHAMMADGANJ RANGE**NAME OF FELLING SERIES : ARAPUR**

1.	Arapur (Part)	Huss.	119	275	275	A	275	
2.	Arapur (Part)	Huss.	119	275	275	B	275	
3.	Arapur (Part)	Huss.	119	275	275	C	275	
4.	Arapur (Part)	Huss.	119	290.72	290.72	D	291	1115.72

NAME OF FELLING SERIES : DALAI KALAN

1.	Dala Kalan (Part)	Huss.	555	775	775	A	775	
2.	Dala Kalan (Part)	Huss.	555	775	775	B	775	
3.	Dala Kalan (Part)	Huss.	555	768.90	768.90	C	768.90	
4.	Dala Kalan (Part)	Huss.	555	530	530	D	530	2848.90

MANATU RANGE**NAME OF FELLING SERIES : TANDWA**

1.	Tandwa (Part)	Patan	341	1280	1280	A	1280	
2.	Tandwa (Part)	Patan	341	1120	1120	B	1120	
3.	Tandwa (Part)	Patan	341	1120	1120	C	1120	
4.	Tandwa (Part)	Patan	341	1111.9 3	1111.93	D	1111.9 3	4631.93

NAME OF FELLING SERIES : GARGOAN

1.	Gargaon (Part)	Patan	371	1362.7 3	1362.73	A	1362.7 3	
2. (a)	Gargaon (Part)	Patan	371	200.00	200.00			
(b)	Urur (Part)	Patan	387	1088.4 1	1088.41	B	1288.4 1	
3. (a)	Urur (Part)	Patan	370	400.00	400.00			
(b)	Surguja (Part)	Patan	370	885.46	885.46	C	1285.4 6	
4. (a)	Surguja (Part)	Patan	370	300.00	300.00			
(b)	Kekrahi (Part)	Patan	374	1068	1068.34	D	1368.3 4	5304.94

NAME OF FELLING SERIES : BANASKATIYA								
1 (a)	Banaskatiya (Part)	Patan	525	624.80	624.80	A	1224.80	
(b)	Korda(Part)	Patan	524	600.00	600.00		1076.57	
2. (a)	Korda(Part)	Patan	524	550.00	550.00	B		
(b)	Sildag	Patan	526	1021.57	1021.57			
3. (a)	Goindi (P.F)	Patan	527	885.00	885.00	C	1335.00	
(b)	Goindi (K.R.F) (P)	Patan	527	450.00	450.00			
4.	Goindi (K.R.F) (P)	Patan	527	1310.00	1310.00	D	1310.00	4946.37
NAME OF FELLING SERIES : RAJKHETA								
1.	Rajkheta (Part)	Patan	375	577.39	577.39	A	577.39	
2. (a)	Kharigada (Part)	Patan	375	200.00	200.00			
(b)	Kharigada (Part)	Patan	378	365.00	365.00	B	565.00	
3.	Kharigada (Part)	Patan	378	575.00	575.00	C	575.00	
4. (a)	Kharigada (Part)	Patan	378	519.32	519.32	D		
(b)	Champi (Part)	Patan	379	575	575		594.32	2311.71
NAME OF FELLING SERIES : KARMA								
1 (a)	Karwat	Patan	518	219.62	219.62	A	317.62	
(b)	Karam - (P)	Patan	519	98.00	98.00			
2. (a)	Karam - (P)	Patan	519	127.18	127.18	B	322.18	
(b)	Karwat - (P)	Patan	520	195.00	195.00			
3. (a)	Karwat - (P)	Patan	520	173.75	173.75	C	301.75	
(b)	Jhanti - (P)	Patan	521	128.00	128.00			
4.	Jhanti - (P)	Patan	521	313.75	313.75	D	313.75	1255.30

CHAPTER- V

WORKING PLAN FOR THE REHABILITATION WORKING CIRCLE.

SECTION- I

GENERAL CONSTITUTION AND CHARACTER OF THE VEGETATION.

175. Sizable area having a crop density of less than 0.2 and degraded areas having rooted wastes have been placed under this working circle. The degraded has been to onslaughts by biotic agencies. In most of the cases areas allotted to this working circle contain a struggling vegetation that, if helped may form a good crop in future.

SECTION – II

176. The special objects of management area:-

(a) to rehabilitate the degraded forests and the rooted wastes of commercially valuable species;

(b) to plant up cutback areas with suitable valuable species preferably of faster growth and to increase the productivity of the land;

(c) to check soil erosion and surface runoff and there by to help flood control in the Ganetic basin while increasing the period of water supply to the local villages.

(d) to provide gainful employment to the local populace.

CHOICE OF SPECIES:-

177. The species will be selected to suit the site. The following species are suggested and other suitable ones may be added to this list.

Eucalyptus hybrid (Mysore gum) Dendrocalamus strictus, Acacia auriculiformis, Boswellia serrata, Acacai catechu, Tectona grandis, Dalbergis sissou, Albizzia procera, Prosopis juliflora, Cassia siames, etc.

STOCK MAPS:-

178. Stock maps have bee prepared for areas rooted wastes on Scale of 4'=1 mile.

Distrubution of area:-

Table No. 20

179. Area distribution is as follows:

Sl no.	Name of Range	Area fit for Rehabilitation working circle
1	2	3
1.	Patan	10141.05
2.	Manatu	14026.92
3.	Chhatarpur East	15257.54
4.	Chhatarpur West	6664.84
5.	Md. Ganj	18918.19
6.	Kundri	16519.86
Total		81528.40 Acres

SECTION – III, PLANTATION OPERATION.

DISPOSAL OF DEBRIS:-

2. Soil Working

181. (a) Pits of the size 30cm X 30 cm X 30 cm will be dug 2m apart for tree species and 4m apart for bamboo. The spacing will be of triangular planting to have full utility of the land. This will also help in checking soil erosion better.

(b) The heads or ravings will have to be increased and catch water drains will be provided. Gully plugging will also be done at suitable distance. Vitex negunda nettings will be fixed at the heads of ravines during the rains. This may be done along the sides also if fund permits.

Nurseries:-

182. Nurseries will be need to raise bamboo, teak and Shisham. For other species only germinations beds will be needed for when the plants will be about 7 cm. height they will be transplanted into polythene containers. Standard techniques for sowing, pricking out etc. will be followed for all these plants before planting the seedlings should not be less than 30 cm. tall and should not be too much accustomed to water. In the nursery stage they should be hardened against drought and sun.

PLANTING TECHNIQUE:-

183. One year old stumps of teak and shisham and one year old bamboo seedlings will be used for planting, others will be only a few months old at the time of planting. Standard technique for planting will be followed. Large plantation areas should be divided into 10 ha. sectors.

FERTILIZERS:-

184. At the time of planting fertilizers will be used as recommended by the forest research division in its research reports. It should be borne in mind that shisham and other leguminous plants having root nodules will require more nitrogen.

As second and heavier doze will be given in the second year at the time of carrying out weeding at the beginning of the rains.

FENCING:-

185. Before the area is planted up fencing with 5 strands or barbed wire or by means of trenches must be completed. Fencing will continue for a period of at least 5 years. This period may be more if the plants take time to get beyond the reach of cattle.

TENDING:-

186. (a) Weddings and hoeing will be carried out thrice during the first year. The first weeding will be done moth after the plantation while the second weeding will be done towards the close of the rainy season in

September, October. The third weeding will be done in February, March just after the winter rains.

(b) Hoeing will be done within a radius of 45 cm. from each plant along with scraping within a radius of 1 m. such hoeing and scrapings will be done at the time of the first and third weeding in the first year. The second weeding will only consist of scraping within a radius of 1 m. of each plant.

(c) Coppice shoots trying to overtop planted species will be removed at the time of each weeding.

(d) Beating up will be done at the time of the first weeding.

SECTION- IV, SUBSEQUENT CULTURAL OPERATIONS.

WEEDING:-

(a) In the second year two weeding along with hoeing and scrapings as mentioned previous Para will be carried out first at the beginning of the rainy season and second at the close of the rainy season. Beating up will be done at the time of the first weeding in the second year also.

(b) In the third year one weeding consisting of hoeing and scraping will be done as above during the rainy season, preferably towards its beginning.

(c) Coppice shoots trying to overtop planted species will be removed in the second and third years also.

CLEANING:-

188. Cleaning will be required in the fifth year when dead, dying and moribund specimens will be removed. Those that have lagged being badly and are suppressed will also be removed. In the case of bamboo, however, only the dead culms will be removed. All climbers will be cut.

THINNING:-

189. (a) No thinning will be required in Eucalyptus, Acacia auticuliformis and bamboo. In other species this will be done in the 10th year and in every 10th year there after upto the 40th year depending upon the crop.

(b) Care will have to be taken that no permanent gaps are created in the canopy.

(c) In such dry and degraded areas, competition is not only for light but also for said moisture and nutrients. Hence it will be necessary to remove all shrubs and shrubby plants.

(d) Non-planted species, if not competing with the planted ones, may be left but thinning will done in them too.

(e) All climbers will be cut and removed.

SECTION- V, EXISTING PLANTATIONS.

190. Existing plantations will be tended according to he prescriptions given under the plantation working circle.

SECTION- VI, MISCELLANEOUS.

The entire working circle shall be rigidly protected from fire. The newly planted areas will remain closed to grazing for period of ten years.

CHAPTER - VI

PLANTATION WORKING CIRCLE

SECTION- 1, GENERAL CONSTITUTION OF THE WORKING CIRCLE AND CHARACTER OF VEGETATION.

191. This working circle consists of the areas of existing plantation and areas fit for plantation. The existing established plantations of Daltonganj North Division raised between year 1983 to 1994 have been included in this working circle. The existing plantations consists of Eucalyptus, Acacia, Chakundi, Gamhar, Khair, Sissoo and other species. In many area plantaion have been raised in past on plane to undulating open forests with poor growth and numerous blanks, which, due to adverse locality factors failed. These areas have also been included in this working circle. The existing plantation will be exploited as per a separate scheme for the exploitation of older plantations. Blank areas have also been included in this working circle for plantation.

OBJECTS OF MANAGEMENT:-

192. The objects of management for the plantation working circle are:

- (i) To ensure soil and moisture conservation while protecting the environment.
- (ii) To improve the stocking and quality of plantations by scientific management.
- (iii) To exploit the older plantations for meeting requirement of local people and wood based industries.
- (iv) To check the soil erosion in blank areas.
- (v) To restock the worked over plantation area by coppice regeneration supplemented by artificial regeneration whatever necessary.
- (vi) To prescribe for the future management of the area after the exploitation of plantation.

193. Statement of areas range wise is given below and detailed statement is given in appendix- II

Table No. 21

Sl no.	Name of Range	Area under plantation working circle (in acre)	
		Successful plantation	fit for plantation
1	2	3	4
1.	Chhatarpur East	2292.23	4263.54
2.	Chhatarpur West	272.40	5151.81
3.	Md. Ganj	-	829.07
4.	Patan	254.63	5177.67
5.	Manatu	624.26	2253.03
6.	Kundri	2574.44	11593.33
Total		6017.96	19,268.45

DISPOSAL OF DEBRIS:-

194. After cleaning the proposed area, all debris and scrub type vegetation will be burnt to ashes and should be spread over as much area as possible.

SOIL WORKING

195. (a) Pits of the size 30cm X 30 cm X 30 cm will be dug 2m apart for tree species and 4m apart for bamboo. The spacing will be of triangular planting to have full utility of the land. This will also help in checking soil erosion better.

(b) The heads or ravings will have to be increased and catch water drains will be provided. Gully plugging will also be done at suitable distance.

(c) Vitex negunda nettings will be fixed at the heads of ravines during the rains. This may be done along the sides also if fund permits.

CHOICE OF SPECIES:-

196. The species will be selected to suit the site. The following species are suggested and other suitable ones may be added to this list.

Eucalyptus, Dendrocalamus strictus, Acacia auriculiformis, Boswellia serrata, Acacia catechu, Tectona grandis, Dalbergis sissoo, Albizzia procera, Prosopis juliflora, Cassia siames, etc.

NURSERIES:-

197. Nurseries will be need to raise bamboo, teak and Shisham. For other species only germinations beds will be needed for when the plants will be about 7 cm. height they will be transplanted into polythene containers. Standard techniques for sowing, pricking out etc. will be followed for all these plants before planting the seedlings should not be less than 30 cm. tall and should not be too much accustomed to water. In the nursery stage they should be hardened against drought and sun.

PLANTING TECHNIQUE:-

198. One year old stumps of teak and shisham and one year old bamboo seedlings will be used for planting. Others spp. seedlings will be only a few months old at the time of planting. Standard technique for planting will be followed. Large plantation areas should be divided into sectors of about 10 ha size.

FERTILIZERS:-

199. At the time of planting fertilizers will be used as recommended by the forest research division in its research reports. It should be borne in mind that shisham and other leguminous plants having root nodules will require more nitrogen.

Second and heavier dose fertilizers will be given in the second year at the time of carrying out weeding at the beginning of the rains.

FENCING:-

200. Before the area is planted up fencing with 3 strands of barbed wire or by means of trenches must be completed. Fencing will continue for a period of at least 5 years. This period may be more if the plants take time to get beyond the reach of cattle.

TENDING:-

201. (a) Weddings and hoeing will be carried out thrice during the first year. The first weeding will be done moth after the plantation while the second weeding will be done towards the close of the rainy season in September, October. The third weeding will be done in February-March just after the winter rains.

(b) Hoeing will be done within a radius of 45 cm. from each plant along with scraping within a radius of 1 m. such hoeing and scrapings will be done at the time of the first and third weeding in the first year. The second weeding will only consist of scraping within a radius of 1 m. of each plant.

(c) Coppice shoots trying to overtop planted species will be removed at the time of each weeding.

(d) Beating up of causalities will be done at the time of the first weeding.

EXPLOITABLE DIAMETER:-

202. There are very few pure plantation in this division the following species have been generally in Mixture, Khari, Siris ,Gaamhar, Sissoo, Eucalyptus, Bamboo etc. Natural species occurring in the plantation consists mostly of Sal, Asan, Sidha, etc. their minimum exploitable diameter at breast height is given below:-

Eucalyptus and Acacia auriculacformis	-	4 "	d.b.h
Naturally grown miscellaneous species	-	6 "	d.b.h
Gamhar and Khair	-	12 "	d.b.h
Teak and Sissoo	-	24 "	d.b.h
Any other species	-	6 "	d.b.h

Note:-

Exploitable diameter of khair is kept at 12" because of good heartwood formation at the size. Where bamboos of the new plantations will attain exploitable size they will be cut at 4 year cutting cycle. The Territorial Divisional Forest Officer will review this matters at proper time and send an information to the working plans officer.

ANNUAL COUPE:-

203. Each felling series has been divided into 20 annual coupes. The area of each coupe could not be made equal because the plantations have not been raised uniformly and in continuity each year. Efforts have been made to include total area of a plantation in coupe.

Statement of annual coupes has been furnished in Appendix- III. The Territorial Divisional Forest Officer shall hand over the plantation coupes

to the state trading division latest by the end October of each year for their working.

METHOD OF EXECUTING FELLING:-

204. (i) Felling operations will be regulated by the Divisional Forest Officer. Coupes may be divided into two or more sections as per convenience in working. The felling will start from one section and it will proceed in systematic manner to the last section of the coupe.

(ii) Lanky, hollow, cracked and malformed saplings or poles below the exploitable diameter will also be coppiced.

(iii) Coppice shoots need to be attended properly to get new shoots which shall from the future crop of the area. Fencing of the coupe after working is suggested.

(iv) In case of pure plantation of Acacia 1' deep trenches in between lines of plants would be dug two years in advance so that natural regeneration of Acacia is also available before cutting the available trees in the plantation coupe.

(v) Felling should be completed in the coupe by the end of March in any year so that the coppice may be vigorous.

(vi) It will be the responsibility of the territorial divisional forest officer to protect the area immediately after felling. For this purpose it has to be planned and make funds available one year in advance.

(vii) Lops and tops i.e. materials below 2" in diameter would be provided to the villagers free of cost. This will help them to have some affection for the plantation crated in their area.

(viii) Bamboo is not worth exploitation in near future. When they are worth exploitation they will be cut as per standard rules.

Following are the list of old plantation survival more than 50%

Name of Range : Kudri Name of beat: Panki					
Sl No.	Name of Range	Year of Plantation	Thana & Thana No.	Plantation area survival more than 50% in acre	Remarks
1	2	3	4	5	6
1.	Sorth	-	Panki 519	73.00	
Name of beat: Panki					
2.	Dabra	1994	Lesliganh 288	242.00	
3.	Salgash	-	Panki 420	95.00	
4.	Baldubar	-	" 422	81.00	
5.	Konbai	1989-90	" 425	130.00	
6.	Saraiya	-	" 421	175.00	
Name of beat: Polppol Beat					
7.	Gankey	-	Lesliganh 207	445.00	
8.	Jorkat	-	" 208	38.00	
9.	Kundlwa	-	" 221	122.00	

10.	Polpol kalan	-	"	232	281.00	
11.	Karma	-	"	234	142.00	
12.	Sons	1989	"	322	99.54	
13.	Purnadih	1994	"	332	650.00	
Total					2573.54	
Name of Range : Patan, Name of beat: Nawakhas						
1.	Rudidih	-	Patan	305	135.00	
2.	Paceria	-	Patan	310	119.63	
Total					254.63	
Name of Range : Manatu, Name of beat: Manatu						
1.	Nawadiha	1989	Patan	346	331.00	
2.	Rabda	364	Patan	310	62.41	
Name of beat: Polppol Beat						
3.	Selari	1989	Manatu	427	98.00	
4.	Delha	1993	728.00	208	132.85	
Total					624.26	
Name of Range : Chhattarpur East, Name of Beat: Chhattarpur						
1.	Sinje	-	Bishrampur	150	161.00	
2.	Arar	1994	Chhattarpur	264	80.00	
3.	Okraha	1994	"	272	255.00	
4.	Sharma	1994	"	291	489.20	
5.	Bardiha	1994	"	294	213.20	
6.	Murumda g	1990	"	276	160.00	
7.	Dibnadag	1989	"	206	40.00	
8.	Saharswa	1989	"	334	50.00	
9.	Dali	1994	"	274	324.00	
10.	Akabasa	1992	"	272	303.83	
11.	Sahi	-	"	275	216.00	
Total					2292.23	
Name of Range : Chhattarpur West, Name of Beat: Hariharganj						
1.	Marwa	1992	Chhattarpur	53	5.00	
2.	Karupa	1992	"	215	200.40	
Name of beat: Latheya						
3.	Bhalubar	1992	Chhattarpur	240	17.00	
4.	Tardih	"	"	241	50.00	
Total					272.40	

Abstract:-

Sl no.	Name of F.S.	Area Plantation	No. of coupe
1.	Kundri	2574.44	20
2.	Patan	254.63	20
3.	Manatu	624.26	20
4.	Chhattarpur East	2292.23	20
5.	Chhattarpur West	272.40	20
Total		66017.96 AC	

CHAPTER- VII

Miscellaneous

Section- I, Irregular Exploitation

205. 1. No irregular fellings of green timber will be permitted except department works for which also attempts should be made first meet the requirement from older incompletely felled coupes of the current or next year's coupe. The stumps will invariably be marked with hammer to indicate such removal.

2. Removal of dry timber, dry firewood, dry bamboos, brushwood, thorns covered by this working plan will be regulated by the Divisional forest officer

3. In areas outside the Bamboo working circle bamboo may be removed under the same felling rules as have been prescribed in Para168 provided that where the clumps require rest the divisional forest officer may stop all cutting. Bamboo rhizomes will not be cut in any area except for departmental plantations.

Section – II, Kendu Leaf

206. Kendu leaf is an important sources of revenue for this division. Recently its trade has been taken over by the state forest development corporation. It also has been entrusted with responsibility to collection of other minor forest produce. Its working will be regulated by the divisional forest office according to the instructions issued from time to time.

Section – III, LAC, KUNDRI LAC ORCHARD.

207. Kundri R.F. having an area 421.00 acres, is being managed for Lac cultivation and research by the forest research division of the forests department Bihar. The work is done by instructions issued by the forest research officer Bihar.

Section – IV, GRAZING

GENERAL:

208. The villagers keep a large number of cattle most of which are unless except for yielding a little dung used for manuring. These cattle roam

about in the forests and eat whatever little they can get. Due to overgrazing the quality of grasses is poor and their incidence is low. To supplement the feed lopping is done stealthily by the grazier and this destroys the trees. Trampling by heard of cattle leads to erosion and interferes with infiltration of rain water. The surface soil gets compact and regeneration of vegetation is hampered. Soil moisture also diminishes affecting the growth of trees and often resulting in their top drying. It is, therefore, essential to decrease the pressure of grazing. People will not part with their cattle because they do not have to spend a single paisa over their maintenance while they get some dung for manuring. Control and regulation of grazing are the only methods to save the forests. If the breed of the cattle be improved, the people may think of resorting to stall feeding which in the present circumstances is uneconomical. It is not possible to control grazing over all the forests at present, hence grazing will be controlled only in coppiced coupes and older plantation areas.

Section – V, FOREST ROADS

GENERAL:

209. Roads are a necessity for proper forest protection. Full utilization of forest produce and frequent inspection are facilitated if forest roads are in good condition. In Daltonganj North Division there are 34.8 Kms. of good forest roads termed as class I for the purpose of maintaining at a standard higher than class II roads which have a total length of 56 Kms. for the present no new roads are considered necessary. However, it is essential to maintain the existing roads in perfect order and adequate funds should be provided for that. Special precautions, like construction of side drains, cross drains, catch water drains etc. would be necessary during the rainy season.

210. A list of roads existing in the division is mentioned below:-

TABLE NO 23

Range	Name of Road	Class	Length (Km.)
Kundri	Circular	I	44.8
	Satbarwa – Tal	I	36.8
	Saraiya – Nagri	I	160.0
	Sarath- Tal	I	4.8
			102.4
1. Lesliganj- Chinki		II	11.2
Manatu	Manatu- Baliari	I	208.
	Sikni- Arar	I	20.8
	Manatu- Tandwa	I	11.2
	Gidhani- Gorho	I	12.8
			65.6
Manatu	Padma- Bansi	II	4.8
	Gidhani- Baliari	II	4.8
	Bansi – Balira	II	9.6
			19.2

Manatu	Barhi-Tandwa-Patan	1	17.2
	Chetma-Hulsi	I	4.8
	Patan- Salaiya	I	22.4
			44.4
Chhattpur East	Gorho-Kubra	1	9.6
	Nawa- Saraidih	I	28.8
	Hulsi- Gorho	I	12.8
	Chhattarpur- Salaiya	I	19.2
			70.4
	Nawa-Kurkutta	II	9.6
Chhattpur West	Gaitha- Chorpahra	II	16.0
Md. Ganj	Bishrampur- Itko	1	19.2
	Hahugaih-Chhocharia	I	11.2
	Mohammadganj- Bishrampur	I	35.2
			65.6
Total		I Class	348.8 Kms
		II Class	56.0 Kms

Section 0 VI, Buildings:-

General:-

211. Buildings are necessary for residential and office purposes. They are also necessary for staying while on tour. Over the years a large number of buildings were constructed but some more are still necessary. They may be constructed as and when funds are available.

2. List of Buildings:-

A list of existing buildings is given below:-

- (1) R.C.C.F Office Incomplete
- (2) C.F. Western Circle, Residence
- (3) W.P.O Western Circle, Residence
- (4) D.F.O Daltonganj North
- (5) D.F.O. Sone Soil Conservation Division Residence.
- (6) A.C.F. Daltonganj North Residence.
- (7) Van Bhawan, Daltonganj
- (8) Clerk, s Quarters 25, Daltonganj
- (9) Clerk, s Quarters 4, Chainpur
- (10) Lac Godon, Kundri
- (11) Peon Quarters 16, Daltonganj
- (12) Peon Quarters 2, Chainpur

B. Forest Rest house.

- (1) Seoti
- (2) Saguni (Patan)
- (3) Kundri

C. Range Officer's Quarters.

- (1) Kundri
- (2) Manatu
- (3) Patan
- (4) Chhattarpur East
- (5) Chhattarpur West

(6) Mohammadganj

D. Beat Officer's Quarters.

- | | | | |
|-------------|-------------------|-----------------|-----------------|
| (1) Kundri | (2) Panki | (3) Seoti | (4) Manatu |
| (5) Patan | (6) Nawakhas | (7) Chhattarpur | (8) Hariharganj |
| (9) Latheye | (10) Mohammadganj | (11) Bishrampur | |
| (12) Pandwa | (13) Polpol | (14) Saraidih. | |

E.R. Hut.

- (1) Nawakhas (2) Seoti (3) Panki and (4) Latheya.

F. Forest Guard's Quarters:-

- | | | | |
|---------------------------------|-----------------|-----------------|------------------------|
| 1. Kundir | 2. Mohamadganj | 3. Nawa | 4. Patan |
| 5. Chhatarpur | 6. Kamar | 7. Seoti | 8. Panki |
| 9. Pachrukhai | 10. Mitar | 11. Pandwea | 12. Loharsi |
| 13. Kunwai | 14. Hariharganj | 15. Latheye | 16. Arra |
| 17. Kudilpur | 18. Nawakhas | 19. Karma | 20. Bishrampur |
| 21. Saraidih | 22. Sigsigi | 23. Jorkat | 24. Hurlong |
| 25. Sonya | 26. Khajuri | 27. Angara | 28. Saguni |
| 29. Baliari | 30. Mahudand I | 31. Mahudand II | 32. Chrin |
| 33. Telari | 34. Bardihan | 35. Utari | 36. Tandwa |
| 37. Seoti-II | 38. Sildilia | 39. Kundri- II | 40. Naka Shed (Manatu) |
| 41. Kendu leaf godown, (Manatu) | | | |

SECTION – VII, WELLS
GENERAL:

212. Wells are necessary for providing water for general use and for drinking. Wells in forest quarters are used by villagers also, it appears that there are not enough wells in this division. Need for having more wells can hardly be overstressed. Good drinking water helps in maintaining good health which is a must for the field staff.

There are wells at the following places:-

- | | | | |
|-----------------|-----------------|-------------|-----------------|
| 1. Daltonganj | 2. Nawakhas | 3. Lathey | 4. Arra |
| 5. Pandwa | 6. Mahur | 7. Sildilia | 8. Bishrampur |
| 9. Sigsigi | 10. Shikarpur | 11. Hurlong | 12. Kuba |
| 13. Kanda | 14. Hariharganj | 15. Karmahi | 16. Urur |
| 17. Chhattarpur | 18. Kasmar | 19. Nagad | 20. Goradih |
| 21. Mahudand | 22. Kunwai | 23. Cherain | 24. Mohamadganj |

Section – VIII Head loaders

213. Hundreds of people mostly landless draw their sustenance from the sale of headloads of firewood. Since they cannot get so much of dry firewood everyday, they use their axes in cutting dry firewood. Not less than fifty percent of such persons are female.

2. On an average every headloader carries about 20 kg. of firewood. A modest estimate has been made that their about 90,000 tones of firewood are taken out annually in this way. The loss of revenue every year is about Rs. 5, 40, 00,000.00 (Five crore forty lakhs) at the rate of Rs. 60.00 per quintal.

In a way government is giving an annual grant of Rs. 5, 40, 00,000.00 to these headloaders for their substance, and at the same time the forests are also being ruined. It is high time to stop this wasteful expenditure and utilize the amount in some constructive way so that the conditions of these professional headloaders is improved and the forests are also saved.

PROBLEM IDENTIFICATION

214. These headloaders have been selling firewood like this for decades. Their children have also picked up this very trades. They have no or little land of their own and do not know any other trade. They are unskilled, illiterate and very poor. The dwindling forests make it a little strenuous for them to bring fire wood to the market, but the scarcity of firewood and the affluence of a few who can pay for firewood brought to their door have been sustaining this baneful trade. Some times some of this person does get some job at the time of harvesting paddy or plucking kendu leaves but that is hardly for a month or two. In the final analysis this socio economic problem of headloaders can be attributed due to the following factors:-

- (a) Poor economic conditions of the headloader, &
- (b) Ready market for headloaders of firewood.

REMEDIAL MEASURES:-

215. The problem has to be tackled in right earnest and a two pronged attack has to be launched to check the menace of the tow factors mentioned above. It has to be realized that any disinclination to solve this problem will go on ruining the forests, will create environmental imbalance and will prevent Government from realizing the full benefits of the land within forest boundary.

(a) Raising the economic condition:-

Since these people have no land, their economic conditions can only be improved by providing them with employment. Employment opportunities can be created in the following ways:-

(i) Forest labourer's co-operative societies can be formed with these headloaders as members. The society may be allowed to take one or two coupes where these persons will work. The price of the coupe may be fixed as the case of those worked by departmental working divisions.

(ii) The co-operative societies may be allowed to purchase kendu lea lots also there these very persons will work.

(iii) These co-operative can further augment their income by poultry and piggery farms. In these also a few persons can find employment. Bee-keeping can also yield some profit without consuming much time.

(iv) These headloaders can be trained in spinning and weaving and may find a whole time employment in that trade. A centre will have to be opened where they can come and do spinning and weaving and get their wages. This can be taken up by the same co-operative society.

(v) Forest based cottage industries, like making dona, pattal umbrellas, etc. of mahulan leaves, making baskets out of Saccharum munja (for this purpose this grass will have to be planted), Sheetalpati of the same grass, chick (door of bamboos, door curtain of khus vetiveria zizanioides to be planted) etc; may also be taken up.

(vi) Collection of mahua fruits, sal seeds kusum fruits, myrabolans, chironji, etc. through the above mentioned co-operative societies.

(vii) To prevent a second generation of headloaders coming up, special attention will have to be paid to the children. They must be weaned away and educated.

(b) Market:-

To prevent attraction in the sale of headloads of firewood, the market has to be plugged. This can be done by flooding the market with cheap firewood and coal. These can be provided at centrally located depots, at subsidized rates if need be. The forest labourers co-operative can be asked to open depots at these centres. This will make the same headloaders to sell firewood in a useful way.

SECTION- IX, FOREST FIRES:-

GENERAL:-

216. These forests are subjected to fire every year with the result that the forest floor is clean. Not only grasses and humus but seedlings and young saplings are also burnt. The structure of the surface layer of the soil is destroyed affecting infiltration of rain water adversely. Regeneration of grasses, shrubs and trees is hampered and only a few fire hardy species survive.

CAUSES:-

217. Forest fires, in this division are causal because of the following:-

(a) There are several mahua trees in the forest; people collect mahua flowers after burning the floor under the tree. They do not take precautions to extinguish the fire which spread and burns the forest.

(b) Passers by throw unextinguished biri and cigarette butts which causes forest fire during the dry season.

(c) People who go to collect honey take burning torches with them and after collecting honey they leave the torches burning in the forest.

218. REMEDIAL MEASURES

Protecting all the forests from fire is a difficult job and the difficulty is increased because of limited funds at the disposal of the Divisional Forest Officer. One would wish to prescribe modern methods of fire fighting involving the use of wireless sets and fire extinguishers but even the fund for conventional methods mostly used to prevent the spread of fire is not made available. For protection against fire following measures will be taken. The forest of Manatu Range and Panki Beat of Kundri Range need special attention. The plantation should also be rigidly protected from fire.

SECTION – X, MAINTENANCE OF BOUNDARIES.

PROBLEM IDENTIFICATION:--

219. As mentioned the total length of the boundary lines maintained artificially is 3,112.32 km and the total number of pillars is 43,569. This length of the boundary line is distributed over 689 forests. Earthen pillars are gradually washed away by rainfall unless they are repaired frequently. Vegetation soon grows on boundary lines or sometimes even though there is no vegetation it becomes difficult to find out the exact line and its direction in the absence of pillars. Sometime some unscrupulous villagers also damages or removes a pillar or two for encroachment. Wooden posts used as pillars are removed by villagers. Clearing all the boundary lines and repairing every pillar every year is not practically possible because it would involve a huge expenditure hence it is suggested that cement pillars should be provided to minimize recurring expenditure.

MAINTENANCE SCHEME:-

220. (a) The boundary lines requiring clearing will be cleared of all shrubs and trees for a width of 4.5 m.

(b) Before clearing the lines, the position of boundary pillars will be checked with the map of the forest and any pillars requiring rebuilding will be rebuilt using R.C.C. according to budget provision. (PCCF, Bihar's notification's copy is given in the appendix)

(c) As most of the boundary pillars are in very dilapidated condition constructed of R.C.C. boundary should be taken up on priority basis within five years. Due to poor maintenance of boundary pillars cases of forest land encroachment have multiplied manifold.

(d) Size of each pillar should 1.5 m.x. 0.6 m with pointed top, about 0.5 mt of boundary pillars should be embedded into the ground below earth level.

(e) Agaves plants will be planted throughout the boundary line at 2 m in gravel.

(f) The direction of the contiguous pillars and boundary line should be indicated by means of arrows painted with on pillars.

ESTABLISHMENT AND LABOUR:-

ESTABLISHMENT:-

221. 1. For general territorial work the staff appears to be adequate. If plantations & other development of activities are taken up on a large scale additional staff will have to be posted depending upon the volume of work.

LABOUR:-

There is no dearth of labour in this division. In fact, employment oriented scheme are needed to give adequate employment to the existing labour force. The landless labourers and the headloaders call for special attention as they destroy forests. Palamu has been rightly classified as one of the chronically drought prone areas of the state and some extra funds are available for providing jobs and trying to ameliorate the vagaries of nature. Such funds can be utilized for plantation work and also for soil conservation measures.

1. Cost of the plan:-

The expenditure involves in the preparation of the plan with in a span of about two years 1996-97 and 1997-98 has been computed as below:-
Establishment Cost:-

This included the proportionate pay, D.A. and Traveling expenses of he field as well as office staffs.

Rs. 9,36,916.78

2. Work:-

This included the cost of materials

Wages etc.

Rs. 57,260.33

Total :- 10,94,177.11

These overall cost of the plan comes to Rs. 10, 94,177.11 Total area covered by this plan is 3, 21,422.90 Acres or 1, 29,350.70 Hact. There for the cost of the plan comes to Rs. 3.40 per acre and Rs. 8.45 per hectare.

FOLLOWING OF THE YEAR WISE FINANCIAL REQUIREMENT FO CARRYING THE PLANTATION ACTIVITIES IN THE DIVISION

Sl. No.	Year	Blank area in Ha.	Financial requirement for Block plantation in Rs.	Area suitable for rehabilitation in ha.	Financial requirement for R.D.F. in Rs.	Remarks
1.	1998-99	600	8857680.00	1800	15741000.00	
2.	1999-00	600	8857680.00	1800	15741000.00	
3.	2000-01	600	8857680.00	1800	15741000.00	
4.	2001-02	600	8857680.00	1800	15741000.00	
5.	2002-03	600	8857680.00	1800	15741000.00	
6.	2003-04	600	8857680.00	1800	15741000.00	
7.	2004-05	600	8857680.00	1800	15741000.00	
8.	2005-06	600	8857780.00	1800	15741000.00	
9.	2006-07	600	8857680.00	1800	15741000.00	
10.	2007-08	600	8857680.00	1800	15741000.00	
11.	2008-09	600	8857680.00	1800	15741000.00	
12.	2009-10	600	8857680.00	1800	15741000.00	
13.	2010-11	600	8857680.00	1800	15741000.00	
14.	2011-12	600	8857680.00	1800	15741000.00	
15.	2012-13	600	8857680.00	1800	15741000.00	
16.	2013-14	600	8857680.00	1800	15741000.00	
17.	2014-15	600	8857680.00	1800	15741000.00	
18.	2015-16	600	8857680.00	1800	15741000.00	
19.	2016-17	600	8857680.00	300	2623500.00	
20.	2017-18	449.57	6456912.00	307.45	2688650.25	
		11849.57	194712832.00	33007.45	288650150.25	

Cost has been calculated on the basis of rates decided by C.C.F. Development, Bihar; vide his letter No. 63 dated 30-04-1996 and letter no. 67 dated 2-5-1996