

## Future Management: - I

### Statistics of Growth and Yield:-

**Statistics of Growth 5:-** No. reliable data is available to compute the statistics of growth in Chatra South Division. However, in the previous plan, Shri R. Prasad did compute this figure. He arrived at the conclusion that sal forests of Chatra South Division has quality of A/B. According to Mr. R. Prasad the average diameter of Sal crop at 30 to 40 years. of age would be 22.5 cms. and 27.5 Cms respectively.

**Statistics of Yield: -** The correct figure of yield from the forests of Chatra South Division could not be arrived at, because an almost entire forest is burdened with rights. The figure, regarding removal of forests produce by the right holders could not be ascertained. However, with the coming of state trading organization, the accurate figure are available for five years. I.e. 1983-84 to 1987-88.

### Coppice Yield:-

Year	Area Coppiced in hac.	Timber	Poles & Khunta No.	T/Lcoggin Fending Post No.	Fire wood In m.
1	2	3	4	5	6
83-84	638.47	1461.3731	79498	163489	11011.00
84-85	1294.57	3347.3154	107383	299213	23988.50
85-86	1803.29	5072.4013	109139	481573	40751
86-87	1586.04	2405.1276	98189	257004	19894
87-88	1824.00	1694.9027	112272	398011	12842
7146.3	13981.1190	506481	1599290	108486.50	

As per Additional Chief Conservator of Forests ( Development Letter No. 1813 dated 3-11-1978, the volume of pole etc. is follows:-

1 Pole = 0.042 M<sup>3</sup>

1 Coqqin/F.P./ Khunta = 0.14 M<sup>3</sup> 12 ft. Stack Volume of fire wood = 1 Quintal

3 Cft. of stack volume = 1 Cft. Solid Volume.

1 Cubic meter = 35.315 Cft. = 0.706 Tonne of wood.

Thus the total solid volume production from year 83.84 to 87-88 is 59161.032 M<sup>3</sup>. Thus the volume of forest produce obtained is 8.278 M<sup>3</sup> /ha or 20.4563 M<sup>3</sup> / acres. However, it must be noted that this figure does not include the produce removed by right holders and also the forest produce removed illicitly. Assuming that an equal amount is removed by right holders, the production on site is 20.4563x 2 = 40.9126 M<sup>3</sup> / acres, In this figure, yield from 15 standard trees of 4"-8" a.b.h. @ 1.4866 M<sup>3</sup> / acres should be added. Thus, the gross yield from one acre comes to 42.3992 M<sup>3</sup>. or 1497.32 Cft. Against this yield, the all India Sal Coppice yield table is as follows :-

Age Volume of main crop of Quality B.

10 years	460 Cft./acre
20 years	1070 Cft./acre
30 years	1510 Cft. acre
40 years	1900 Cft. acre.

It appears, that the yield figure tallies, more or less with quality B of Sal Coppice area. Out turn of Bamboos of Chatra South Division.

Year	Name of Felling Series.	Coupe No.	Area	No. of bundles of tona	No of Lagga.
1	2	3	4	5	6
85-86	Jaled	A	368.68	884	-
	Sanghari	A	396.91	13908	18840
	Hosir	A	570.36	2316	1835-Worked Partly only.
	Rimi	A	442.45	3186	4225.00
	Pasagam	A	194.68	3389	2447.00
87-88	Jaled	B	471.87	8804	-
	Sanghati	C	459.09	18165	1925
			2,909.04	50,652	29,242

20 = Bamboos = 1 bundle

50 = Bundle = 1 M.T.

Out turn of Khair of Chatra South Division

Year	Area of Harbested Coupe	Volume of Khair
83-84	1335.45	1100.1869
84-85	1054.99	1559.8055
85-86	1456.70	974.1394
86-87	748.00	1163.1714
87-88	N.A.	1053.0111
	4595.14	5850.3143 M <sup>3</sup>

Revenue Figure:- In the following table, the revenue realised from Sal of timber, pole fencing post, Tramline, Coggins, firewood by Chatra South State Trading Division, Piri range of Department Working Division Hazaribagh and revenue realized by Chatra South Division has been given.

Year	Gross Receipt of Chatra South State Trading Range of Departmental Working Division	Net receipt of Chatra South State Trading Range of Departmental Working Division.	Revenue Realesed by Chatra South Division.	Total Net revenue realised.
1	2	3	4	5

83-84	40,92,276.36	32,54,244.10	12,32,170.36	51,86,414.46
84-85	1,72,41,116.73	1,37,95,497.00	24,23,794.07	162,19,291.07
85-86	2,39,52,548.66	1,86,19,974.00	15,26,273.24	2,01,46,247.24
86-87	2,59,05,960.88	1,98,88,265.90	20,88,585.25	218,76,851.15
87-88	2,65,36,783.64	2,14,68,632.00	6,69,071.18	221,37,703.18
<b>G. Total</b>	<b>9,77,27,686.27</b>	<b>7,70,26,613.00</b>	<b>86,39,894.10</b>	<b>8,56,66,507.10</b>

## Part- II Basis of Proposals

**Object of Managements:-** The most pressing need under present circumstances is to maintain and improve the forests stand, so that the benefits form these forests accrue to the society. The immediate objects of management are:-

- (1) To maintain, improved and protect the forests Government, for times to come, for prevention of soil erosion, conservation of rain water and improved of water supply.
- (1) To classify the forests into two categories, namely village forests, the main aim of management shall be to ensure proper supply of requirement right holder. And at the same time to develop a since of belonging to the forests among villagers. Commercial forests, on the other hand, would be worked keeping in view the general requirement of the locality as well as industrial demands of various projects.
- (3) To work the forests scientifically by confining all feelings in correctly assessed and properly laid out annual coupes.
- (4) To constitute felling series, both in village and commercial forests, in such a way that right holders donot have to go more than 3-8 km. to obtain their requirements, the protective staff have a manageable number of units to look after and the area of annual coupe is neither too small or too large.
- (5) To encourage proper groth of plants and trees by low coppicing, cultural operations and artificial regeneration.
- (6) To ensure proper protection against fire and grazing, particularly to young crops.
- (7) Consistent with the above, to ensure highest possible regular financial yield for the state.

**Constitution of Working Circle :-** To achieve the above objects of management the following working circles are proposed.

- (1) Coppice selection Working Circle.
- (2) Village Working Circle.
- (3) Bamboo Overlapping Working Circle.
- (4) Khair Overlapping Working Circle.

- (5) Rehabilitation Working Circle.
- (6) Plantation Working Circle.
- (7) Wild-Life Working Circle.
- (8) Protection Working Circle.

**Area Statement:** - The range wise break-up of the total area into various working circle is given below:-

Name of Range	Total area in ha.	Coppice Selection W.C. (ha)	Village Working Circle	Plantation Working Circle (ha)	Rehabilitation Working Circle
Chatra	36,228.01	6,014.53	2,927.03	16,282.90	10,882.90
Simaria	22,352.92	6,401.77	749.05	12,143.26	1,952.45
Lawalong	27,083.41	17,739.24	1	1,632.04	1,526.31
Piri	16,228.19	12,442.31	2,092.60	5,75.31	1,117.97
<b>Total</b>	<b>1,01,892.53</b>	<b>42,597.85</b>	<b>5,768.68</b>	<b>30,562.51</b>	<b>15,479.63</b>

**General Constitution of working circle :-** This working circle comprise the bulk of the forests of the division having density more than 0.3. It includes both the right burdened as well as right free forests. The area of this working circle is 4259833 ha.

**Special objects of Managements :-** 103 (1) To exploit the forests in such away that forests cover is maintained for times to come.

(2) To ensure the regeneration of all species and to improve the stocking and quality of forests by regulating the cutting grazing and fire.

(3) To improve the stocking by artificial regeneration, where the regeneration has failed.

(4) Consistent with above, to meet the bonfire requirement of firewood, samll timber to right holders and to market the simplus to meet the industrial demand of forests produce.

**Silvi cultural system :-** 104. The forests of this division are of the dry peninsular type with the temperature in summer rising well beyond 43<sup>0</sup>C. The long spell of drought is a tough time for forests. Due to this reason, the establishment of regeneration is not as smooth, as it should have been. It has been seen the opening created by removal of trees has led to invasion of area by lantana and finally lantana does not allow any species to come up. Secondly there are about twenty four thousand house holds, (Which is entirely dependent on the forests of this division) whose demand for fire wood is met by the forests of this division. Considering all these factors, it appears that annual removal of forests produce should be on a conservative scale, so that the these cove is not lost. Hence it is being proposed that the forests of this working circle shall be worked under coppice selection system. This system has been proposed, because it has been seen that the coppice with standard system has resulted into large

Scale movement of area from coppice working circle to Rehabilitation or Plantation Working Circle. Basically, the reasons for failure had been that the area could not be closed to grazing, the local inhabitants did not allow the coppice growth to come to pole state and large scale removal of produce from the same stock depleted the capacity of rot stock to grow properly. In absence of natural regeneration from seed and mortality of stump, forest continued to be in derelict and busy growth. In the fire season also, the area could not be protected from fire resulting in desiccation of microbes and humus, and thus the forests department was deprived of the future crop.

There has been awakening among educated mass on environment and ecology. Although, we could raise plantation's in blank area at heavy cost, but even then it will be considered as environmental degradation in comparison to natural forests. Thus, preservation of natural forests is of paramount importance and we must stop movement of natural forest area plantation or rehabilitation working circle. But the August thinking alone shall not produce result. Thinking has to be tested on the firmament of local condition. A total ban on felling can't stop forest felling altogether. Thus a system has to evolve so that is maintained a favorable balance. This reason alone has laid to change the system from coppice with standard to coppice selection system, so that the main ingredient of coppice system remains, but by reserving removal of 8" and up trees, we will keep our forests green.

**Felling Cycle:-** The felling cycle will be of twenty years. However, it should be noted that from 1975-76 to 1988-89, the forests of this working circle were exploited under coppice with attended system having rotation of 30 years ( for Simaria and Chatra ranges) and 40 years ( for forests Piri and Lawa long ranges ). Keeping in view the objects of managements, from 89-90 the forests of this working circle shall be worked under coppice selection system with felling cycle of twenty years.

**Demarcation of annual coupes.:-** The management maps of all the felling series have been prepared on 4"=1 mile topographical maps. Coupes will be marked on the ground with the help of 5' wide lines from which all shrubs and under growth shall be cleared, trees on these lines would be marked with double coal tar rings at breast height at suitable intervals according to ground condition and visibility so that at least one such coal tarred tree can be seen on either side from any such trees. The corner trees should be suitably blazed and name felling series, number of coupe and its area should be written on it.

It has to be realised that proper demarcation of coupes is the first requirement of sound forest management having out coupe must be completed by June every year.

**Exploitable Diameter :-** 60 Cm. girth or 20 Cm d.b.h.(O.B.) shall be exploitable girth or diameter for all species.

**Area Statement :-** The area allotted to this Working Circle, range wise, is given below:-

Range	Area in Ha
Chatra	6014.53
Simaria	6401.77
Lawalong	17,739.24
Piri	12,442.79

**Method of Executing the fellings :-**

**Marking Rules:** - The following marking rules are prescribed.

1. All dry, dead or heavily diseased trees with negative increment shall be marked for felling.
2. Trees of Harra, Bahera, Mahua Khair, Kusum, Palas, Ber, Bamboo and Amra shall not be marked for felling.
3. No tree shall be marked where the slope exceeds 40<sup>0</sup>.
4. All climbers shall be cut at the time of marking.

**Execution of Felling :-** All marked trees must be felled.

2. Stump height should not exceed 6" from the lower slope.
3. Sharp cut shall be ensured.
4. In the right burdened forest the annual coupes are first to meet demand of right holders.
5. At the time of felling, all the pollarded stum shall cut.
6. No debris shall be left in the coupe.

**Supply to right holders. :-** Regulation of right in forests of this working circle is a bit difficult, because the right holders choice is limited marked of marked trees. It shall be responsibility of the territorial division to ensure that unmarked trees are not cut by right holders. The annual coupe shall be divided in to three sections and one section shall be handed over to right holder for meeting their demand. the rights of right holders shall be regulated as indicated in village working circle.

**Subsidiary Silvicultural Operations:-** In the year following the main felling, the following silvi cultural operations shall be carried out.

1. Cutting back of damaged stem.
2. Climber cutting and eradicating sporadic growth of lantana.
3. Those areas, where growth of lantana is high should be planted up with indigenous species like Siris, Khair etc. Similar steps are to be taken in such areas where the reg. has failed to come up or where young age classes are totally absent, creating a gap in the coupe.

**Yield:-** Yield shall be regulated by area.

**Protection from fire and grazing. :-** The entire felling series shall be protected from fire to help the establishment of regeneration and to improve the quality of soil. The annual coupe shall be closed to grazing for a period of five years.

**Statement of Felling Series. :-** It is being shown separately after this chapter.

**General Constitution of working Circle :-** Certain areas of coppice selection Working Circle has to face maximum pressure use of local population. These areas constitute the forest of village Working Circle. The area of this working circle is 5768.68 ha. The forests of community felling series of previous plan has been brought in the village working circle.

**Special object of Management :-** (1) The silvicultural system shall be coppice selection system.

**Exploitable Diameter :-** It shall be 15 cms. at breast height.

**Felling Cycle :-** It will be of twenty years. However it should be noted that coupe No. 11 to 23 were worked on a rotation of 30 years.

**Constitution of felling Series. :-** Those forests, over which the demand of right holder generally exceed the quantity of forests produce, have been grouped together of from a felling series. However, the ideal situation would have been make a single village as felling series, but this has not been done due to following reason :-

(1) The forests of this division have large numbers of villages and if a single village is made of felling series, then the number of felling series will be unmanageable.

(2) Due to poor stocking and varied crop composition, equitable distribution of forest produce between different villages may not be possible.

#### **Supply to right holders and association of people**

**with management & its protection :-** The community forests have fast deteriorated due to callous attitude of the community towards these forests. Although, the forest department is meeting the requirement of people from very beginning, the people could not develop sense of belonging to the forests. The free supply of forest produce to right holders has always been considered as routine matter by the people. It's a fact that with deterioration of forests, the people have started feeling the pinch of shortage of fuel wood but still they consider that forest can withstand all kind of maltreatment.

Following follows guidelines are given to regulate the forest produce supply to right holders and at the same time to make people feel that the proper management of forests is essential for their own benefit :-

(1) Each sub beat guard will prepare a list of households , with name of house holder, for those villages which form a felling series. This in term will be compiled at Bent officer level and Range level.

(2) In each village, a village forest committee comprising of 5 people, representing the social structure of village will be formed in this committee will be formed in consultation with mukhiya and the local sub-beat guard.

(3) After the coupe n laid out, it will be handed over to the village forest committee for exploitation. But. before handing over the coupe, the village forest committee will have to furnish written agreement on behalf of the villagers, that they will not graze their cattle for five years in coupe after exploitation and they will protect it from fire.

(4) It will be the responsibility of the village forests committee and forest sub beat guard to ensure that forests produce is equally distributed and it is not connered by an influential group.

(5) Some time, it may happen that a particular coupe may have forests produce in degraded stage and coupe may need rehabilitation works for establishment of natural forests. Under this situation, this coupe will be worked by territorial division and entire area will be cut back. Promising saplings below 6' D.O.B. shall be retained. This cut back produce will distributed among villagers free of cost and the coupe will be fenced. The protection work will be entrusted to village forests committee and sub beat guard, with help of committee shall protect if from grazing, illicit removal of sapling and fire. If the cut back produce is not sufficient to meet the requirement of people, then the advance coupe shall be opened for right holder. However, this option shall be applied, only after this point has been examined by the range officer.

(6) The right holder will start the cutting from one side. cutting will be done close to ground systematically. The stump shall not be more than six inches in height. The felled material shall be passed as per regulation and forests produce shall move out side coupe only on a transit permit, which will be issued by sub-beat guard.

(7) After the felling operations are complete, then cleaning operations will be done in same year in the month of October. This will consist of dressing down of high and pollarded stumps.

(8) After the coupe has been exploited, the sub beat guard will submit a statement to beat officer, quantifying there in the quantity of forests produce removed by right holder and number of right holders benefited. This data will be compiled at Range level and this will be reviewed every year in month of September by the territorial conservator.

**Statement of felling series :-** Range wise constitution of felling series have been prepared on 4"=1 mile topographical maps, advantage of physical features like roads, bridges, rivers etc. have been taken proposing the lay out of coupes.

Coupes will be laid out departmentally and coupe line will be cleaned of all shrubs in width of five feet. The coupes will be laid out as per prescription which has been suggested fro coppice selection working circle. Bamboo, Mahua, Semal, Khair, Kusum, Palas, Ber, Bhurkund, Amara, Anonla, Harra and Bahera shall be retained irrespective of their occurrence.

Except of subsidiary silvicultural operations suggested in para 8, nothing will done. The main effort will be to protect the exploited coupe from grazing for five years and fire.