

## FUTURE MANAGEMENT DISCUSSED AND PRESCRIBED

### CHAPTER-I

#### BASIS OF PROPOSALS

##### OBJECTS OF MANAGEMENT.

(235) The main object of management is to maintain, protect and improve the existing forests of Garhwa south division to maintain the ecological balance of the less developed area.

- 1- To protect the hill top and steep slopes to minimize soil erosion.
- 2- To regulate the local water supply by conservation of rain water.
- 3- To accelerate the afforestation by improved technique and community participatory method to increase. The capital value of the forests with amelioration of the environment.
- 4- To promote the concept of social forestry.
- 5- To improve the degraded sal and miscellaneous forests in the shortest possible time.
- 6- To meet the bonafide requirement of the right holders for timber, fuel, fodder and other forests produce to the extent possible and to market the surplus for consumption of non-right holders and export if possible.
- 7- To associate the local population in the protection and scientific management of the forests and to promote a sense of community ownership.
- 8- And consistent with the above, to have sustained yield of timber, fuel and other forests produce in perpetuity.

(236) Association of community in protection, conservation and management of the forest can be achieved by the development of the protected forest and sharing of the produce with the villagers. Govt. of Bihar in its department of forests and Environment has made a resolution no.5244 dt. 8.11.90 named for this purpose. A copy it is being given to be implemented by the divisional forest officer.

##### (238) METHOD OF TREATMENT :-

To attain the above objective the forests of this division have been divided into different working based on the composition, density, situation and silvicultural needs of the forests.

The working circles are :-

- 1- Coppice with standard working circle.
- 2- Coppice selection working circle.
- 3- Rehabilitation cum afforestation working circle.
- 4- Plantation working circle.
- 5- Khair (overlapping) working circle.
- 6- Bamboo (overlapping) working circle.

### CONSITUTION DISTRIBUTION AND AREAS OF EACH WORKING CIRCLE

#### COPPICE WITH STANDARD WORKING CIRCLE :-

(239) Some of the forests allotted under coppice with reserve working circle in Roy's plan have been included in this working circle. These forests are fit to be regenerated satisfactorily under coppice with standard system of management. There are three types of felling series in this working circle as in Roy's Plan namely (i) community felling series, (ii) Community cum-commercial felling series and (iii) commercial felling series. Provision has been made for meeting the demands of the right rotation and regulation of yields have generally been retained in Roy's Plan but the retention of reserved trees in a coupe has been changed to the retention of standard trees which will be uniformly distributed all over the area.

The forests may be managed under the participatory community management as envised in the recently published Govt. implement this resolving.

(240) Yield has been regulated by area. Khair trees falling in the coupe will be worked under separate felling series under khair overlapping working circle but salai trees will be worked in the coppice coupe. Minimum exploitable diameter of salai has been prescribed.

Range wise distribution of forest areas under this working circle is given below :-

<u>Name of Range.</u>	<u>AREA ALLOTTED UNDER THE COPPICE WITH STANDARD WORKING CIRCLE.</u>	
	Ac.	Ha.
1. Chainpur	: Nil	Nil
2. Bhandaria	: 24,170.37	9,781.61
3. Ranka East	: Nil	Nil
4. Ranka West	: Nil	Nil
5. Kutku	: 56,330.25	22,796.54

### COPPICE SELECTION WORKING CIRCLE :-

(241) It is a new introduction in this plan. In sinha's plan the coppice forests were worked under coppice with standard system. In Roy's plan they were worked under coppice with reserve system. The results of past working shows that these forests have further degenerated over the years due to administrative problems and non-cooperation of local populace. It was, therefore, thought necessary to allot such areas under coppice selection working circle. In this working circle it has been prescribed to remove only such forest produce which will not produce permanent blanks. Minimum explitable diameter of all the available species have been prescribed to acheve the above objective. The yield will be regulated area. The coppice selection working circle may be worked under the provision of the recently published Govt. resolution of participatory management. No right holder or community will fell trees below 4" dbh.

Under Roy's Plan the forests of this Division were classified into three categories viz. :-

- 1- The Commercial Forests.
- 2- Community cum commercial forests
- 3- Community forests

These three categories have been retained as such although while constituting the felling series the forest areas have been altered depending upon the nature of the growing stock. Provision has been made to meet the demands of the right holders from the annual coupes.

(242) Range wise areas allotted under coppice selection working circle is given below :-

Range	Area Under coppice Selection Working Circle.	
	Ac.	Ha.
1. Chainpur Range	: 30,747.35	12,434.31
2. Bhandaria Range	: 5,601.66	2,166.96
3. Ranka West	: 48,649.14	19,688.04
4. Ranka	: 39,540.79	1,6001.45
5. Kutku Range	: 4,517.16	1,828.07

### REHABILITATION CUM AFFORESTATION WORKING CIRCLE :-

(243) Most of the forests of Garhwa South Division have become rooted wastes because of ruthless and rampant destruction during the last few decades. Uncontrolled grazing did not allow new shoots to grow and frequent fires had added to the injury resulting in further deterioration of the forest vegetation. Such degraded areas and blank patches have now been included under rehabilitation working circle. The approach is to treat them by coppicing of high stumps and fencing of areas to augment growth of the new shoots from grazing and trampling.

The blank areas in such forests will be planted from nursery raised stocks of seedlings of economically important species which are not grazed. Preference will be given to the local and indigenous species. Soil and water conservation measures will be adopted to check erosion in these forest areas.

(244) Range wise, area allotted under this working circle is given below :-

	Range		Area under Rehabilitation working Circle.	
			Ac.	Ha.
1.	Chainpur	:	10,697.93	4,329.39
2.	Bhandaria	:	5,418.02	2,192.64
3.	Ranka East	:	9,683.92	3,981.87
4.	Ranka West	:	4,969.51	2,011.13
5.	Kuttku	:	1,036.15	4,019.32

### PLANTATION WORKING CIRCLE :-

(245) Some of the forest areas have become completely blank during the last few decades. Simple closure and protection have not been sufficient to bring back such areas under vegetation.

It was necessary to afforest the blank areas by artificial regeneration. Efforts have been going on to raise plantations in such areas but the pace needs to be accelerated in the interest of the forest and the land resources. The existing plantations will be included under this working circle. The existing plantations will be exploited in 10 years for which a sequence has been furnished in this plan.

(246) Range wise figures of existing plantations is furnished below :-

Range	Area under plantation working circle.	
	Existing plantations.	
	Ac.	Ha.
1. Chainpur	11,984.71	4,850.14
2. Bhandaria	22,514.44	9,111.47
3. Ranka East	18,981.88	7,681.88
4. Ranka West	5,963.53	3,413.40
5. Kutku	2,213.23	895.68

KHAIR OVERLAPPING WORKING CIRCLE. :-

(247) Khair trees are present almost everywhere in the forests of Garhwa South Division. This is one of the economically important indigenous species of the area. It has therefore been decided to work khair in an overlapping working circle.

Range wise felling series have been constituted for the exploitation of khair, rotation and minimum exploitable diameter has been fixed as per data available in Roy's Plan. Yield has been regulated by area subject to the restriction of the number available trees.

(248) Range wise areas of khair ( *Acaia catechu* ) of this division is given below

<u>Range</u>	Area under Khair overlepping Working circle.	
	Ac.	Ha.
1. Chainpur	8,654.21	3,502.31
2. Bhandaria	10,306.02	4,170.79
3. Ranka East	16,587.97	6,713.03
4. Ranka West	9,749.10	4,687.42
5. Kutku	9,458.01	3,827.60

Bamboo Overlapping Working Circle :-

(249) Bamboos were worked under Roy's Plan in Bamboo overlapping working circle. The same system has been adopted in this plan. Now this species too is being worked by the state trading division. Quality of Bamboo clumps will be improved by the application of fertilizers

wherever necessary. Such bamboo bearing areas which have very much deteriorated due to heavy felling by the right holders and by the general public during illicit removal will be treated also by artificial regeneration It will boost up the production of this important forest produce.

The Range distribution of Bamboo under this working circle is given below :-

Range.	Area under Bamboo overlapping Working circle	
	Ac.	Ha.
1. Chainpur	15,899.40	6,434.40
2. Bhandaria	4,032.00	1,631.72
3. Ranka East	10,454.69	4,230.95
4. Ranka West	11,582.63	4,687.42
5. Kutku	8,149.00	3,297.85

BLOCK AND COMPARTMENTS. :-

(251) Village is the unit of these forests. No block or compartment has been constituted for these forests. Forest areas in each village have been delineated by boundary pillars on the ground and the same has been shown on cadastral maps of 16"=1 mile scale. Prescription has been given in the plan for the maintenance of the boundary lines and boundary Pillars.

(252) Encroachment, however is common in these forests and the earthen boundary pillars gets obliterated from the ground. It is, therefore, essential that masonry boundary pillars be constructed on the ground to save forests areas from future encroachment.

#### COPPICE WITH STANDARD WORKING CIRCLE.

##### CHAPTER-II

#### WORKING PLAN FOR THE COPPICE-WITH-STANDARD WORKING CIRCLE.

(253) This working circle covers all the sal forests of Garhwa south division where regeneration of sal and other associate species is adequate and the area is expected to regenerate adequately after coppice felling without much external help. The areas treated under sal development scheme by Bihar state Forest Development corporation is also included under this working circle.

(254) The total areas in the working circle is 80,500.62 acres. The distribution of area in the range is given below.

Sl. Name of Range.	Area under coppice with standard working circle.	
	Ac.	Ha.
1. Chainpur	56,330.25	22,796.54
2. Bhandaria	24,170.37	9,781.61
3. Ranka East	-	-
4. Ranka West	-	-
5. Kutku	-	-
Total :-	80,500.62 Ac	32,578.15 Ha.

(255) As explained in Chapter- I paras. The forests area of this working circle has been divided into three categories to fulfil the general objects of management. The three categories are given below :-

(i) ENTIRALY COMMERCIAL WITH OUT RIGHTS :-

Large compact blocks of forests with better quality crop but having no or little rights have been grouped together to form felling series setting apart from these the right-holder share forests, where rights exist, for exercise of rights separately so that exploitation of the commercial portion of the forests in this category is affected without let or hindrance by the community of the locality and without any political pressure on these. The exercise of rights will be confirmed to only the right holder's share of forest get apart, and not throughout the whole forest, hitherto in vogue, by allowing the right holders to take out their requirement from a coupe first of all and there after, in the next year, the rest of the produce in the coupe disposed of by sale. This will afford simultaneous exploitation in both the commercial and community portion every year instead of two years and there by on year's coppice growth after exercise of rights, lost in the past, would be preserved.

A statement of annual coupes range wise in each Felling series is given in appendix-III.

(ii) ENTIRELY FOR COMMUNITY (R.H.F.S) :- In the commercial Felling Series, Where rights exist, sufficient forests have been set apart exclusively for the right holders to exercise their rights, The selection of right holder's share of forest had been allowed to

be made by the right-holders themselves during Roy's plan. The right holders portion of forest has generally been retained as such in the felling series with a few exception where the area of the F.S. has suffered major change. All the right holder's the Felling series histories.

As all these forests were originally private protected forests, which became protected forests on vesting of the estates to Govt. the extent to which rights can be allowed has been decided on the principles laid down in rules 17 (3) under section 77 of the B.P.F Act published under Notification No. 2924-VIF-96/48-R dated 30<sup>th</sup> March, 1948.

The maximum quantity of timber and fuel that a right-holder may remove in year is 9cft. Of round timber and 168cft. Of fuel subject to availability. Provided that in any forest the share of right holder shall be limited to the one-half of the total available produce.

The houses in each village had been counted and listed during preparation of working plan by Mr. Roy. Their requirements were estimated on the above principles according to which, and based on yield table of sal quality "B" and taking the present average crop age at the time of felling to be 40 years and allowing margin for short-fall of yield due to density, quality etc. to the extent of 40% of the total yield given in the sal coppice yield table, the area allotted for annual coupe has generally been kept at 1 acre for 10 houses. As the selection of right-holders share was left to them, the best and the most suitable areas have been selected and so the yield is expected to conform with that approaching the yield table figures. It is also decided that if a right-holder enlarges his house or increases the number of houses later on, he cannot claim produce more than before.

(iii) COMMUNITY-CUM COMMERCIAL :-

Small scattered blocks of forests, not fully stocked but having heavy rights, have been grouped together to form felling series on the principles laid down in this plan. The right-holder's share in these is to be limited to their actual requirement subject to a maximum of one-half of the annual coupe as laid down in the rule 17(3) of the rules under B.P.F. Act published in the notification No. 2924-VIF-96/48-R dated 30<sup>th</sup> March 1948, as originally the forests were private protected forests and the rights were regulated according to these rules. The rest half of the annual coupe may be commercially exploitable through the agency of state trading.

A tabular statement of Range-Wise annual coupes in each Felling series is given in the appendix-III.

## SPECIAL OBJECTS MANAGEMENT :-

(256) The special objects of this working circle are:-

- (i) To meet the bonafide requirements of the right-holders as fully and conveniently as possible with due regard to the conservation of forests.
- (ii) To bring about improvement in the health and stocking of the crop so that the forests will continue to give a sustained yield and will be in a position to meet the demands of the villagers and feed the local and export markets with medium sized timber, poles and fuel and to provide fodder and grazing to the maximum extent.
- (iii) To supplement the growing stock by sowing and planting in blanks.
- (iv) To associate the local right-holders with and to gradually assign to them the responsibility of protection management of their share of forests.

## CHARACTER OF VEGETATION: -

(257) The forests of this working circle are broadly composed of sal with varying proportions of its common associates in the plains and lower slopes of the hills viz.

Asan (*Terminalia tomentosa*), Bija (*Pterocarpus marsupium*), Gamhar (*Gelina arborea*), Siris (*Albizia lebbek*), Ginjan (*Lannea grandis*), Kaji (*Bridelia retesa*), Kekar (*Zizyphus xyklopyra*), Jamun (*syzygium cumini*), semal (*salnealia nalabaria*), Kend (*Diosyros melanoxyton*), Bori (*Mallotus philippinensis*), Keonjhi (*Sterculia usens*), but changes to dhaura (*Anogeissus latifolia*), Sidha (*Lagerstroemia Parviflora*), karam (*Adina cordifolia*), Salai (*Boswellia serrata*)m etc. On the higher slopes.

## ANALYSIS AND VALUATION OF THE CROP: -

(258) Stock maps to show ocular estimate of the growing stock in respect of crop-composition, crop distribution crop age, etc. have been prepared after a field survey topo maps on a scale of 4"=1 mile obtained by enlargement of 1"=1 mile topo maps by statfile recorder. These enlarged topo maps were helpful in making a fairly correct estimate of the distribution of various types of forests such as sal miscellaneous, bamboo, salai and khair. The average sal may be taken to be of standar b-quality and in a few forests sal of seedling origin showed the standar Q II/III e.g. Lahda.

## SILVICULTURAL SYSTEM: -

(259) The silvicultural system prescribed is coppice with-standards. The reasons are that all the species as mentioned in para 240 under this working circle coppice well up to pole stage and the poles of all such species are in great demand by the right-holders and the general rural and urban population. The high stumps and malformed stumps have to be cut down as quickly as possible. Standards will be retained as aid in filling the blanks and in supplementing the stock through seedling regeneration. The standards will give larger sized timber in the next rotation. The standards will further act as seed bearers and will afford shelter to younger regeneration against isolation and damage from frost and will also prevent erosion along streams and on sleeper slopes.

Rotation: -

(260) The condition of forest varies widely from place to place depending upon the factors of the locality. Certain distant forests escaped ravages by man and are still maintaining growth and healthy conditions, while certain others have been reduced to scrub stage. There are also areas in-between the two extremes mentioned above and partly degraded. Heavy mortality of trees of 2' to 3' girth occurred in some well grown forests due to extreme drought condition as reported by the F.R.I . Dehra dun. Therefore, one uniform rotation will not suit all kinds of crop even though all are to be worked under the same silvicultural system, physically and financially the rotation should be direct relation to the increment until it is halted and also to the demand of right-holders and the market. Three different rotations have been adopted for the different forests as described below: -

- (i) 60- Year rotation:- This rotation has been applied to some of the better quality distant forests covering 4 Felling series of Hesatu, Tehri, Madgari and Kutku, which are entirely commercial with the ultimate object of producing trees of "B-quality" sal of an average girth of about 3 feet.
- (ii) 40-Year rotation:- This rotation has been applied to the rest of the forests covering..... Community-Cum-Commercial and .....Entirely Commercial Felling Series excluding areas set apart exclusively for the right-holders as Right-holder' Felling Series (R.H.F.S.)

The rate of growth in these forests is slow and the management aims at production of poles and firewood mainly, and timber partly, The average diameter is intended to be 7"-9".

(iii) 20- Year rotation: - This rotation exclusively intended for the right-holder's share of forest set apart and grouped into ..... Right- holder's Felling Series along side the commercial forest. The sole object of fixing this rotation is to satisfy the requirements of the right-holders which confine to small poles and firewood.

#### YIELD:-

(201) The yield is fixed by coupes of equal area. The average area of the annual coupe will, there fore, be equal to the area of the Felling Series divided by the rotation, coupes have been shown in the management maps in all the felling series. The coupes in the "Community" felling series will be laid out by the right-holders share of forest has been indicated on the management maps of each felling series history which should be demarcated on the ground by the right-holders under guidance of the local R range Staff.

#### FELLING SERIES: -

(262) One or more villages have been grouped together while constituting a felling series. In making these regroupings the reasonable convenience of the right-holders has been looked into.

(263) Coupes have been laid out on the Felling series maps on 4"=1 mile scale for (i) the commercial, and (ii) the Community-cum-Commercial Felling Series. In the right-holders' share of forest (R.H.F.S.), Set apart in the felling series maps, no coupe has been laid out though areas of annual coupes in these have been indicated in the appendix-III. The lists of the Felling Series have been furnished in Appendices III for all the three categories of Felling series showing the details of area, rotation, annual coupe area, etc. of each Felling series.

(264) The following table shows the areas under different categories of F.S constituted in this working circle.

### **Table Not Created**

#### METHOD OF EXECUTING THE FELLINGS: -

(265) Simultaneous exploitation in the coupes of all the three categories of felling series, Viz.- "Commercial" "Community" and "Community-Cum-Commercial" series is envisaged in this plan.

In commercial coupes the entire work of demarcation of coupes, marking of reserves, putting up of sing boards etc. Will be done departmentally while in community-cum-Commercial Coupes, to which the right-holders are entitled to half the produce as maximum, the right-holder will either do the above work-within half he coupe or it may be arranged with the divisional forest officers that the right-holders will do the work entirely in every alternate year. In the coupes exclusively for the community, the entire work shall be done by the right-holders. The supply of coal tar will, of course be made departmentally in all the three categories.

(266) Demarcation of coupes:- The coupe shall be demarcated by means of 5 feet wide cleared strips and by putting conspicuous double rings of coal tar on trees at breast height 3” apart at such interval as to enable any body standing in the cleared strip against one such market tree to see clearly the one in front of him and another behind him. The sole object is to demarcate in such a way as to enable one to move round a coupe independently once he is shown the cleared coupe line and a double ring coal tar-marked tree on it. For section line half double ring coal tar mark shall be given as in the coupe line.

(267) Sign boards should be nailed to the trees at corners and at crossings of the coupe line with roads and foot-paths on which the name of the Felling Series, coupe number year of felling etc. Shall be written. This will enable the coupes to be known to all concerned. Where bare rocks are available close to coupe lines the above information may be put down on it.

(268) All the Commercial coupes shall, at least, be divided into three section and those of Community-Cum-Commercial ones into two sections. Larger coupes may have more.

(269) When a combined coupe for the right-holders of two or more villages is formed the coupe may be divided into as many sections as there are villages, with areas roughly proportional to the number of houses in the villages. This action should only be taken when the right-holders of different villages do not have unanimity inspite of efforts for it. The combined coupes have been formed with the willing consent of the right holders of the constituent villages.

#### MARKING AND FELLING RULES: -

(270) In Commercial and Community-cum-commercial coupes the following marking rules shall be followed.

- (i) 20 Standards per acre including fruit bearing trees of mohua, kend and char of 6”-12” diameter in order preference to be retained. These need not be uniformly

spaced. Where the stocking is good the standards may be widely spaced than places where the stocking is poor. Standards must be retained even if they are of under size.

- (ii) In addition to the standards mentioned in and char, in order of preference, to be retained wherever such trees occur. The rest of the fruit bearing trees shall be felled.
- (iii) Preference in retention of standards shall be given in order of economic value of species, e.g. sal, bija, asa, sandan, gamhar, karam, siris, dhaunta, etc.
- (iv) The standards should be sound, straight vigorously grown as far as possible.
- (v) Climber cutting shall be done along with marking.
- (vi) The standards retained as mentioned in (i) above will be conspicuously marked with one coal tar ring at breast height and another at the very base, they will be serially numbered and recorded in the prescribed.

(271) In the community coupes the same marking rules as mentioned above will be followed except that the size of the standards shall be 4"-8" diameter at breast height.

(272) Felling will be regulated in the following manner: -

- (i) Felling must start from one end of a section and proceed with and even front thereafter from section to section.
- (ii) All semal, khair, bhurkund, and bamboo felling in the area shall be retained.
- (iii) No felling shall be made in a strip of 25 feet on either side of a road, stream or ravine.
- (iv) Trees in sacred groves (known as sarna or jahira) shall not be felled.
- (v) Felling should be done in such a way as to cause no damage to the standards trees.
- (vi) All trees to be felled must be cut with sharp implements clean at height not exceeding 6" from the ground. Meticulous dressing of stumps is not necessary.

#### RIGHT AND OBLIGATIONS OF RIGHT-HOLDERS

(273) Since the scientific management of forests, set apart exclusively for the right-holders, require heavy expenditure in order to make supplies available to them, the experience shows that

the felling “what is got for nothing is good for nothing”, may aptly be use in respect of the right-holders as seldom any sense of economy exists, and what is advantageous to all generally leads to no body attending to it. Rights must, therefore, involve responsibility and obligations for the perpetual enjoyment of rights. This dictum should be followed by way of corporate life and public spirit rather than be treated as measure of compulsion-largely in the interest of the state in general and that of the right- holders in particular for the betterment and upliftment of the right-holders themselves. The following special rules are, therefore , laid down for the coupes to be worked by the right-holders :

- 1- The right-holders share of forest, entirely for community, has been shown in the management map of the Felling series history on a scale of 4”=1 mile which should be demarcated on the ground by the right-holders under guidance of the local Forest Department staff. A 5-foot-wide clear line shall be maintained where necessary.
- 2- The right-holders will do all the works themselves in connection with the demarcation of coupes, marking of standards and clearing of coupe-line under the supervision of the Grampanchayat or its representative duly authorized and the local staff of the Forest department will give req guidance. Failure on the part of the right-holders or the panchayat to co-operate in the matter will result in the delay of laying out coupes and distribution of produce to them will suffer.
- 3- The entire produce of a community coupe will be distributed to the right-holder by the Grampanchayat in the jurisdiction of which the coupe falls, or by a representative of the Grampanchayat and duly authorized by the latter.
- 4- In community-Cum-Commercial: - Coupes, the right-holders’ share of produce is limited to their actual requirement subject to a maximum of one-half of the total and so the works mentioned in (2) above will be done by the right-holders to the extent of one-half annually or in the alternative complete work has to be done by them every alternate year. The distribution of produce to the right-authorized representative.
- 5- It, for any reason, the right-holders fail to get their coupe in community-cum-commercial F.S. laid out within two months of receipt of written notice to the

Grampanchayat by the range officer, then such coupes may be laid out departmentally and the entire produce will be the property of the state Trading.

- 6- The removal of produce by the right-holders from the community coupes or from their share of Community-Cum-Commercial coupes, shall be allowed only after inspection by the grampanchayat or its duly authorized representative along with the local staff of the Forest Department, to ensure that felling has been done according to the rules or specific orders issued from time to time. A declaration to the effect to be given in writing by the grampanchayat or its authorized representative which shall be countersigned by the local staff of the forest Dept and submitted to the range officer for record. If in course inspection breach of felling rules is observed, of which cutting at heights higher than 6" is common, the extraction shall be permitted after rectification.
- 7- Any dispute in the matter of equitable distribution of produce to the right-holders will be settling by the Grampanchayat or its authorized representative.
- 8- The Grampanchayat or its authorized representative shall issue permit bearing stamps of the Range-office and of the Grampanchayat concerned with dated signature of range officer on the permit book for extraction of forest produce. The permits should be collected by the beat guard and submitted to the beat officer. The counter foils of the permit, book when completely used up, shall be submitted to the range-office for record.
- 9- Each right-holding village shall keep clear the boundaries of forest within It, erect and repair boundary pillars according to Forest Department specification, prevent grazing in forbidden areas such as in felled coupes for 5 years, also prevent occurrence of fire in forests, promptly take steps, on its own, to extinguish fire if it does occur, and inform the nearest forest department staff about forest offences.
- 10- For deliberate breach of rules in executing felling in coupes, in the extraction of forest produce, in felling outside the coupe, in felling or damaging reserves and in the failure to discharge the responsibilities assigned in the item (9) above, which may jeopardize the principles of maintenance, preservation and exploitation of forests, a report may be made by the divisional forest officer concerned to Government through proper channel and Government may suspend the rights

individually or collectively of the whole village for such period as they may think fit.

- 11- No removal of dry fallen firewood from the commercial forests shall be allowed form sale or barter.

(274) Some of the community-cum-commercial felling series have large extents of rooted waste and poorly stocked forests for plantation, which have been put under rehabilitation cum Affore station and plantation working circles. The rest of the area of these felling series have been put under coppice-with standard working circle with annual copes of less than 10 acres. These, at the discretion of the divisional forest officers, may be entirely thrown open to the right-holders when the produce is insufficient for commercial exploitation. After successful rehabilitation, these felling series are expected to yield sufficient produce both for commercial exploitation and for the community.

#### CULTURAL OPERATIONS: -

(275) In the coupes entirely for the community no cultural operation need be done as the object is to produce small sized poles and fuel.

In the year following the main felling the following cleaning operations will be carried out in the commercial and community-cum-commercial coupes, preferably in winter so that advantage of growing season may be had: -

- (i) All damaged tress left standing will be cut back or girdles in case of large sized inferior species, and high stumps wherever found shall be cut close to the ground.
- (ii) Young shoots of sal or valuable miscellaneous species like bija, asan. Gamhar, etc. shall be freed from inferior species or grasses suppressing them.
- (iii) All climbers shall be cut.

#### THINNIN: -

(276) No thinning is prescribed for the coupes in the community and community-cum-commercial felling series. If however, the territorial divisional forest officer, in course of his inspection, finds the yound crop very congested then a thinning may be carried out in-between 5<sup>th</sup> and 7<sup>th</sup> year of the year of the main felling to get an average spacement of 5'x5' in the crop by reducing to one or two stems per stool. The work shall be done free by the right-holders and the

materials felled shall be distributed to the right-holders, who do the thinning, by the grampanchayat or its representative duly authorized.

(277) In commercial coupes thinning in the third year of the main felling followed by another in the fifteenth year shall be done. The sole object is to give the healthy straight and vigorously growing stems of the ultimate final crop more and more growing space gradually to enable it to put on rapid increment without being branchy. Thinning will be confined to better crop on the lower slopes and in valleys where soil and moisture conditions are favourable. On higher slopes this will be rarely necessary.

(278) In the first thinning an average spacement of 5' x 5' shall be aimed at by reducing to one to two stems per stoo. In the second thinning the average spacement be increased to 10' x 10' round the six selected stems of valuable well-grown healthy stems.

(279) In carrying out the second thinning the best stems of valuable species are to be selected which should be freed from suppression or interference by surrounding trees. Dead, dying and diseased trees shall be removed and damaged poles cut back. No permanent opening in the canopy shall be made in carrying out the thinning. The thinning materials may be sold.

(280) SEQUENCE OF THINNING: - The sequence of first thinning should be decided well in advance by the territorial divisional forest officer. No turn of second thinning will come during the 10-year period of this plan in any of the coupes of his plan.

(281) PALNTING BLANKS: - There exist several blanks particularly in plain forest due to repeated cutting, excessive grazing and fire. Efforts to reforest these blanks, occurring in the coupes felled, will have to be made to improve the stocking.

(282) The following steps shall be taken as a part of the operation in plantation working circle and combined with it.

- (i) The blanks will be stock-mapped at the time of laying out coupes on 4"=1 mile scale.
- (ii) In the year following the main felling the left over slash in the coupe and that obtained by felling trees not felled at the time of main felling, shall be collected over the blanks either broadly or when the quantity is less, in lines of planting, and burnt and then the pits for planting dug and the area fenced. The operation should be completed by April or middle of may. Healthy Khair, semal, bhurkund, bamboo, should be left over to form a part of the future crop.

- (iii) Planting of species that grow naturally in the environment shall be done or those successfully grown in afforestation areas in the locality may be tried. Line sowing of seeds of suitable species may be tried to keep down plantation work should always be use as guide.
- (iv) After-care for success of the plantation is vitally important and so attention for weeding and cleaning and protection against grazing shall be given for at least 3 years.
- (v) A plantation journal with the maps of plantation sites must be maintained felling series-wise, giving all details of operations with costs and observation of growth year to year.
- (vi) Grass cutting in the planted area may be allowed to the villagers free of charge and for this free permit shall be issued individually or collectively.
- (vii) Blanks of 2.5 acres and over in extent shall be tackled under this prescription.
- (viii) The whole operation is to be treated as part of work under plantation W.C. in which such blank areas has not been included and the technique of nursery work and plantation, followed under the plantation W.C. will also apply here.

Grazing: -

(283) Grazing will be allowed subject to the following rules:

- 1- No browsers will be allowed to graze in the whole of this working circle except as prescribed under miscellaneous regulations (Chapter-VIII)
- 2- No grazing will be permitted in coupes of less than 5-Year old.
- 3- The Divisional forest officer may close any portion of the working circle to grazing, for silvicultural reasons, for a period not exceeding 30 years leaving sufficient grazing ground for the grazing of cattle of the villagers in the neighbouring forests.
- 4- In order to see that incidence of grazing is well distributed over the whole area open to grazing periodical grazing blocks may be arranged by the Divisional Forest officer.
- 5- Cattle may not graze unless accompanied by grazier.
- 6- The lopping of branches for fodder is prohibited.

#### FIRE PROTECTION: -

(284) The forests should be protected from fire, special attention being given to the regenerated young coppice and young plantation of less than 5 years. The detailed fire-protection measures as laid down Chapter-VIII will also apply to this working circle.

#### CHAPTE-III

#### WORKING PLAN FOR THE COPPICE SELECTION

#### WORKING CIRCLE

#### CENERAL CONSTITUTION OF THE WORKING CIRCLE

#### AND CHARACTER OF THE VEGETATION: -

(285) This working circle includes those forests which were allotted coppice with reserve working circle under Roy's Plan (1964-65 to 1973-74). These forests have deteriorated during the last two decades and there fore the system of management has been changed to coppice selection system. It is due to the deterioration in the crop that a sizable area of these forests had to be included in rehabilitation cum afforestation working circle in this plans. Selection system has been introduced to save the future forest crop form further degradation. It is of interest to note that prior to Mr. Roy's plan these forests were worked under the coppice with standard system. Mr. Roy had introduced coppice with reserve system for improvement of the forest. But his system too failed to produce the desired result due to administrative problem, non-co-operation from people felling standards of public service and public co-operation. Therefore coppice selection system has been introduced in this plan.

(285-A) The paragraph-87 and 88 shows that the illegal flow of the forest produce daltonganj via chainpur is the yield of more than the mean any increament of forest area of chainpur therefore, no exploitate of the forests of chainpur range is allowed till this followed.

(286) Paragraph **is not complete**

(287) The forests under the coppice with reserve working circle in Roy's plan were divided into three categories viz (i) Commercial (ii) Community (iii) and community-cum-commercial. These categories have been retained in the constituted felling series under the coppice selection working circle.

(288) Forests with better quality of crop but having no or little right, have been grouped together to form commercial felling series. A portion of forest in the commercial felling series has been set apart for the holders for exercise of their rights separately, these forest areas constitute community felling series. The exercise of rights will be confined to only the right-holder share of forest set as part in the felling series.

(289) Small scattered blocks of forests, not fully stocked and burdened with right, have been grouped together form community-cum-commercial felling series. The right holders share in these felling series is to be limited to their actual requirement subject to maximum of one haj of the annual coupe as laid down in the rule-17(3) of the rule under B.P.F. Act published in the notification no. 2924-VIF-96/48-R dated the 30<sup>th</sup> march, 1948 as original the forests were private protected Forests and the right were regulated according to these rules. The rest has annual coupe will be commercially exploited department.

#### SPECIAL OBJECTS OF MANAGEMENT: -

(290) The special objects of management of this working circle are: -

- 1- To bring about improvement in the health and stocking of the forest so that they may continue to give higher yield and be in a position to meet the increasing demands of the local population and fulfill the requirement of local markets with respect to medium sized timber, poles and fuel wood and to provide fodder.
- 2- To protect the forest land from dessication and soil erosion and to augment conservation of moisture to provide good depth of wate table.
- 3- To supplement the existing growing stock by sowing and planting.

#### METHOD OF TREATMENT: -

(a) Stock Map: -

The forests have been stock-mapped on 4"=1 mile scale map. Different colours and symbols show the sal forest, miscellaneous forests, rooted waste, state of erosion, density, regeneration and girth of the crop on the map. From the information obtained from the stock maps and descriptions, the forests have been allotted under coppice with standards, coppice selection, rehabilitation Cum-Afforestation and plantation working circle.

(b) Silvicultural system: -

(292) This working circle will be managed under coppice selection system. Coppice selection system is defined as a silvicultural system in which felling are carried out on the principles of selection system but regeneration is obtained by coppice. In order to carry out felling on principles of selection, an exploitable diameter or girth is fixed according to the size of material and a felling come in decided.

(293) This system aims at the removal of only silviculturally available trees with the regeneration by coppice which will help in maintaining and improving the soil cover for the purpose of environment. A green and healthy tree is silviculturally available when it fulfills the following conditions -

- (i) It forms part of a congested crop and the principal of improvement felling warrents its removal.
- (ii) Saplings or poles or estaboshed regeneration of the same of equally valuable species exists to take their place and/
- (iii) Its removal does not create permanent gap in the canopy.

#### 4. EXPLOITABLE DIAMETER: -

(294) Khair and bamboos will be worked under overlapping working circle. Sal, Asan, Sindha, Dhaw, Salai, and other miscellaneous species will be worked under this working circle. The minimum exploitable diameter will be 8” or 20 cms at breast height for all the species except salai. The minimum exploitable diameter of salai will be 12” or 30 cm. This will be applicable for the commercial and community cum commercial felling series which will be worked by the government agency. In community fellin series however the minimum explitable diameter will be 6”or 15 cms for all the species except salai which shall not be explited below 12” or 30 cm. Diameter at breast height.

#### FELLING CYCLE: -

(295) Felling cycle for all the three types of felling series shall be 20 years. Felling cycle for the commercial and community cum commercial felling series is only of academic interest in this plan. It will have its use in the next revision of theworking plan. In Roy’s plan these forests were allotted under coppice with reserve working circle with a rotation of 40 years. Out of this 40 years, 10 years have passed during Roys’s plan (1964-65 to 1974-74) and 15 year since 1974-75 to 1988-89. The present plan has been prepared to last up to 2003-04 which is 15 years from now i.e. 198-90. 15 coppice selection coupes with be laid out during the plan period in the remaining

unworked areas of the felling series. Coupe lay out will be started fresh after the expiry of the plan. Therefore the period of felling cycle is of academic interest only so far as the commercial and community-cum-commercial felling series are concerned.

#### REGULATION OF THE YIELD: -

(296) Number of trees for removal could not be prescribed for lack of detailed enumeration. This was also not necessary because coppice selection system has been introduced here for the first time and yield has so far been regulated by area in this working circle subject to the restriction that all silviculturally available trees will be marked for felling.

(297) This restriction is necessary because these felling series have been worked under 40 years rotation under coppice with reserve system out of which 10 years have passed during Roys' plan (1964-65 to 1973-74) and 15 years (1974-75 to 1988-89) during the extended period of the plan.

The rest of the area is to be worked in 15 years to make up the rotation period of 40 years and it has been decided to work the rest of the area in 15 years to correspond the period of expiry of this plan (2003-04). Thus yield is for 15 years out of which 15 coupes will be laid out during the period of this plan. Therefore proportion of explitable trees will be 15/15 or 1/1. Therefore all explitable trees will be marked for felling. In case of salai too the same principle shall be followed.

#### CONSTITUTION OF FELLING SERIES: -

(298) One or more P.Fs either in whole or part constitute a felling series under this working circle.

Where more than one P.Fs. have been grouped together in the felling series, the P.Fs. are adjacent to each other. The right holders will have no difficulty to meet their requirements from the right-holders coupe.

(299) All the forests of this division are heavily burdened with rights. The present condition of most of the forest are poor and therefore the constitution of felling series of Roy's plan had to be revised in this plan. In most of the cases the area of felling series have been reduced because some area of these felling series had to be allotted to the rehabilitation cum Afforestation or in the plantation working. The details of the constitution of felling series have been given in appendix-IX.

#### DIVISION INTO COUPES FROM 1989-90 TO 2003-04

(300) As stated earlier the balance area of the felling series has been divided into 15 annual coupes for coppice selection working. Area already worked under Roy's plan and during the extended period of the plan have been shown on the management map. Unproductive and blank areas have not been included in the coupes. Area of each coupe under each felling series have been given in appendix-Ix-IV.

#### DEMARCATION OF COUPES.

(301) Coupes will be demarcated on the ground strictly in the same sequence as shown on the management map. 5' wide clear line will be given all round the coupe. Trees felling along the coupe lines will be given a double ring of coal tar at breast height. Each coupe in the right free felling series shall be divided into two sections by cutting internal lines to ensure efficient control over felling. Right-holders may also be divided into two or more sections. The internal lines need not be very wide but must be clearly distinguishable. The coupe lines must always, during the currency of the coupe, be maintained by repainting the coal tar ring mark wherever necessary. Suitable signboards indication the number of coupe, year of felling etc. shall be put up at coupe corners or at the crossing of important roads and footpaths.

#### PRIORITY IN COUPE LAY OUT AND ALLOTMENT OF FUNDS: -

(302) Coupes will be laid out one year in advance of the actual felling. Necessary estimate has to be made well in advance for the lay out of course and for the subsidiary silvicultural operations. The Divisional Forest Officer is advised to press for funds to meet these expenses. If the bare minimum requirement of funds is not available it is advisable to stop felling in such felling series where coppice regenerations is almost sure to fail and the process of retraction of blanks will get accelerated. A list of such coupes may be sent to the conservator of Forests before handing them over to the state Trading Division.

(303) The Maximum quantity of timber and fuel that a right-holder may remove in a year is 9 cft. Of round timber and 168 cft. Of fuel subject to availability, provided that in any forest the share of right-holders shall be limited to one half of the total available produce.

(304) The coupes in the "community" felling series will be laid out by the right-holders under the guidance of the local range Staff. The right-holders share of forest has been indicated on the management map of the felling series histories which should be demarcated on the ground by the right-holders under the guidance of the local range Staff.

(305) In commercial coupes the entire work of demarcation of coupe, marking, putting up of signboards etc. will be done departmentally while in community cum commercial coupe where the right-holders will either do the above work within half the coupe or it may be arranged with the Divisional Forest officer that the right-holders will do the work entirely in every alternate year. In the coupes exclusively meant for the community the entire work shall be done by the right-holders themselves. The supply of coal tar will, of course, be made departmentally in all the three categories.

#### METHOD OF EXECUTING FELLING.

(306) The following marking rules are prescribed for coppice selection working circle.

- (i) All dead, dry and diseased trees with negative increment shall be marked for felling.
- (ii) Sal and miscellaneous trees that have attained the exploitable diameter will be marked for felling on the principle laid down under the regulation of yield. Silviculturally available trees will be marked for felling.
- (iii) No trees will be marked where: -
  - (a) The crop density is low.
  - (b) The regeneration is absent.
  - (c) And where the slope exceeds 60 dig
  - (d) Nearer to nala or banks of river.
- (iv) A well grown stem will be preferred to a badly grown stem even if the former is of inferior species and the latter of a more valuable species.
- (v) Other species will be marked on the principles of improvement felling.
- (vi) Trees will be retained on the edge of blanks.
- (vii) All climbers will be cut at the time of marking.

#### EXECUTION OF FELLING: -

(307) Coupes entirely meant for the right-holders will be worked by them under the supervision of the range staff. In community cum commercial coupes the right-holders shall work first in the first section and if their requirements are not met they will work in 50% area of the coupe.

(308) Working of coupe should proceed systematically from one section to the other. Market trees should be cut as close to the ground level as possible but the numbering mark of the tree

should be kept intact. All the stumps should be properly dressed during working of the coupe preferably at 6" from the ground level.

(309) Fruit trees such as Mango, Mahua, Piar, Kend and Kusum and trees under sarna and jakhira shall not be cut in the coupe. Khair trees will not be market in the coupe because it will be worked under a separate overlapping working circle.

#### DISPOSAL OF FORESTS PRODUCE: -

(310) The coupes will be worked by the state trading Division. They shall transport the materials at their depots where they will be sold by them as per their established norms and procedure. Sale of any forest produce right in the coupe or during transit to the depot must not be permitted.

(311) Coupe layout, marking of trees and passing should be done by the territorial division. Any deviation from this prescription may however be done on the instruction of the chief conservator of forest (management), Bihar.

#### SUBSIDIARY SILVICULTURAL OPERATION: -

(312) The following subsidiary silvicultural operations will be carried out in the year after the main felling.

- 1- Any high stump left over over during working of the coue shall be dressed at 6" from the ground levels. The divisional forest officers of territorial division and state trading division should jointly visit coupes to ensure proper coppicing.
- 2- If there be a number of coppice shoots from a stool their number shall be reduced to three or four. Congestion of sapling, poles or trees wherever present shall be removed.
- 3- Trees damaged during the coupe working shall be cut back at 6" from the ground level.
- 4- Climber cutting shall be done throughout the coupe.
- 5- The coupe shall be fenced if funds are available and the fencing shall be maintained for five years. This will help the natural regeneration and the coppice shoots to grow free from grazing.
- 6- The blank areas of the coupe shall be planted by nursery raised seedling preferably of indigenous species as per usual practice in the afforestation programme.

OTHER REGULATION: -

(313) Although the felling cycle and the minimum explitable diameter of trees has been lowered in case of community felling series, the procedure adopted for working these coupe shall remain the same.

(314) In community cum commercial felling series the minimum exploitable diameter for the right-holder's portion shall not be reduced because it will lead to unmanageable complications.

(315) The worked over coupes shall be protected for five years against fire, grazing and illicit cutting.

CHAPTER- IV

WORKING PLAN FOR THE REHABILITATION CUM  
AFFORESTATION WORKING CIRCLE.

(316) GENERAL CONSTITUTION: -

This working circle has been constituted with all the degraded forest areas of Garhwa South Division. They consists of sal and miscellaneous rooted wastes. Percentage of sal rooted waste. Is low as compared with the areas under miscellaneous rooted waste. Total area allotted under rehabilitation cum afforestation working circle comes to \_\_\_\_\_ acres which is \_\_\_\_\_ % of the total forest area of the division.

(317) The areas allotted under this working circle are generally very refractory. Gully and sheet erosion are seen every where. They need immediate attention and there fore soil-conservation measures have been suggested which will conserve moisture and provide perennial source of water in the river system.

(318) The rooted wastes have been grouped under two categories, viz (i) sal rooted waste where sal occurs to the extent of 25% and over in the crop and (ii) miscellaneous rooted waste where the crop consists of miscellaneous species with few sal, less than 25% in the composition. These two categories of rooted wastes have been shown on the stock maps in 4"=1 mile scale. A range-wise statement of the villages containing sal and miscellaneous rooted waste, is given in Appendix-V.

(319) CHARACTER OF VEGETATION: -

The rooted waste, as envisaged in this plan is that kind of degraded forest, with extent of blanks and erosion which owe its origin as a result of exposure of soil to the denuding

action of rain and storm, due to repeated high cutting of trees and their early lopping, aggravated by fire and heavy grazing and the growth has been stagnated and form of the crop distorted to such an extent as to render it incapable of yielding straight poles and sound timber of high value, if left as such.

**SAL ROOTED WASTE: -**

(320) Areas containing sal to the extent of 25% and over have been grouped under this category. Repeated pollarding of stems is a general feature. The associates of sal such as kend, Asan, piar, Pandan etc. have also been pollarded along with sal. The whole crop has now become bushy. Heavy grazing prevented natural regeneration to come up except the thorny species of ber, kanauda, dithora etc. which are gaining ground. Patchy blanks, impoverished of top soil also exist at places.

**MISCELLANEOUS ROOTED WASTE: -**

(321) Such areas which are degraded with less than 25% of sal have been grouped under this category. Salai is the predominant species under this category particularly on hilly regions. Other associates are Kend, Dhauta, Piar, Pandan, Karam, Kari, Mahua, Amla, Khair, Galgal and degraded Bamboo which are typical of dry deciduous type incidence of thorny scrub like Ber, Kanauda and Dithora is common. Varying extent of blanks also exist here. Kend occurs in gregarious form particularly in heavily grazed areas. On hilly and exposed areas gully formation are noticeable which urgently needed antierosion measures and afforestation.

**OBJECTS OF MANAGEMENT: -**

(322) The objects of management are : -

- (i) To remove gradually all the unhealthy and deformed stems and bring about conditions favourable for healthy, vigorous and straight growth of trees of timber value and for soil and moisture conservations.
- (ii) To rehabilitate the area by coppicing and cut back operations supplemented by sowing and planting of suitable valuable species.
- (iii) Consistent with the above to satisfy the local demand of small timber and fuel from the rehabilitated area.

**AREA: -**

(323) All the areas under rehabilitation cum afforestation working circle have been shown below: -

Sl. No	Range	Areas	
		Ac.	Ha.
1.	Kutku	Nil	Nil
2.	Bhandaria	5,418.02	2,192.64
3.	Ranka east	9,683.92	3,919.02
4.	Ranka west	4,969.51	2,011.13
5.	Chainpur	10,697.93	4,329.39
Total :-		30,769.38	12,452.20

(324) Special efforts has to be made to make funds available for the treatment of such large areas. Beat wise rehabilitation blocks have been prepared so that concentrated efforts for their treatment are made throughout the division. All the areas have been proposed to be treated in a period of twenty years. Any portion left untreated in a particular year should be treated in the following year or there after it will not be difficult as the social forestry division, Garhwa and the Palamau Afforestation Division, Daltonganj may extend their work in the territorial jurisdiction of Garhwa South division. Co-ordination in selection of areas for treatment in a sequence is essential to attain the above objective.

(325) It should be noted that most of the rooted waste areas are seen in the vicinity of the populous villages, where the pressure for grazing, for small timber and fuel wood is common. The immediate need is to satisfy the local demand by rehabilitating these areas as quickly as possible.

(326) Rooted wastes are of varying nature because the extent of blanks and erosion conditions etc. vary the treatment of the rooted wastes thus becomes a complicated affair and requires skills which shall depend on the prevailing site conditions. Cut back of all malformed, crooked, dead, dying and diseased stems together with the coppicing of high stumps shall be carried out in the area. The area shall be fenced to protect it against grazing. Stone all fencing, trench fencing and barbed wire fencing, may be done depending on funds but it should be effective whatever type is adopted. It shall be maintained for five years that the coppice shoots and planted seedlings get established beyond grazing height.

(327) Planting in blanks shall be done as per the norms and procedure adopted in afforestation works in the Bihar Forest Department. An area below 0.25 acres need not be planted. The net

area of planting in rehabilitation blocks will be computed on the basis of number of pits dug for plantation purposes. A rehabilitation cum plantation journal has to be maintained in each range indicating the details of area giving thana no. plot no, details of treatment, species and cost. Officers supervising the work should write inspection notes in this journal indicating the progress and achievements.

(328) The lower slopes of hills have rarely been given respite to grow large sized trees rather they have been denuded sharply. It is only on tops of hills that a few large sized trees are noticeable. Coppice growth from small sized trees would restock such areas partly. An approximate of 30% of the rooted wastes will need planting and on this basis planting stock and nursery area may be fixed by the divisional forest officer in accordance with the provision of funds and need of the site.

(329) As the areas for rehabilitation are large profuse sowing of seeds of indigenous species in majority of the rehabilitation areas is suggested. Loosening of the surface top soil or ploughing by tractor or contry plough will be effective where sowing will be done so that seeds are not wasted. Good quality seeds of preferably indigenous species such as Khair, Neem, Karam, Gamhar, Sidha and Asan, should be collected from selected plus treesfor this purpose. Planting should be done where the area is large preferably on plains and gentle lopes and where protection will be possible. Details of soil working, gfencing, nursery raising of seedlings and planting will be the same as practiced in afforestation works of the Forest Department. Bamboos should be planted in those areas where bamboos are present in deteriorated condition. The current pratice of 2m X2m. Spacing in plantation should be adopted. Bamboos, however, should be planted in spacing of 5m x 5m.

(330) The general approach to tackle rooted wastes are given below: -

- (i) The treatment area will be selected block wise and surveyed on the ground and also show on the block map by November every year.
- (ii) The annual area of operation in each block should follow a sequence so that the future exploitation programme may provide coupes in sequence.
- (iii) All high stumps and pollarded stems shll be cut back between December to march every year so that full growing season may be availed of from April on wards.



- (d) Sisso, *Acacia auriculiformis*, Riverine soils, from grazing area  
*Cassia siamea*. And on gully heads and recently  
exposed new sites.

(333) Sal, Bamboo, Teak and Bija need well drained soil. In case of sal, the site having limonite, bauxite, laterite and haematite as under laying rock, will suit well. Even sowing of sal seeds on such sites may be effective if honestly done after making furrow. Line sowing of khair babul, asan and arjun seeds may be useful.

(334) Thinning will be carried out in the fifth year so as to remove the congestion by spacing saplings at 2m x 2m. The thinning will be mechanical. It will only be done when there is no damage by grazing or dying of the plants. In case of grazing, efforts of thinning will be limited to coppice the grazed browsed saplings. Side by side natural species that have come up will also be thinned to make them available enough food and light. All the climbers will be removed from the plants.

## CHAPTER-V

### WORKING PLAN FOR THE PLANTATION WORKING CIRCLE.

#### GENERAL CONSTITUTION AND CHARACTER OF VEGETATION

(335) The existing plantations of Garhwa south Division rised from 1974 to 1990 have been included under this working circle. The existing plantation consists of Eucalyptus , Gamha, Acacia, Khair and other species. They have been raied on plain to undulating open forests with poor growth and numerous blanks which, due to adverse locality factors failed to stock inspite of favourable soil conditions. The existing plantations will be exploited as per a separate scheme for the exploitation of older plantations. Accordingly the sequence I furnished in Appendix-xiv. Worked over plantation coupes will be fenced to protect them from grazing type of fencing will be decided by the divisional forest officers. Fencing should be effective against grazing and shall be maintained for five years. The plantation coupes will be restocked wherever necessary by sowing and planting.

#### STATEMENT OF AREA:

(336) In all the five range of Garhwa south Division, the range wise area allotted under this working circle are given below: -

Sl.No	Range	Area under plantation.
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			Ac.	Ha.
1.	Ranka East	:	18,981.88	7,681.88
2.	Ranka West	:	5,963.53	2,413.41
3.	Bhandaria.	:	22,514.44	9,111.47
4.	Kutku.	:	2,213.23	895.68
5.	Chainpur.	:	11,984.71	4,850.16
	<b>Total</b>	<b>:</b>	<b>61,657.79</b>	<b>24,952.60</b>

#### OBJECTS OF MANAGEMENT: -

(337) The objects of management for the existing plantation are given below: -

- (i) To ensures 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 requirements of local people and wood based industries.
- (iv) To improve the stocking of planting by adopting suitable scientific measures including cultural operations.
- (v) To meet the ever-increasing demand of raw materials for wood-based industries.

#### SILVICULTURAL SYSTEM: -

(338) The silvicultural system will be coppice selection. If the coppice regeneration will not be able to cover up the areas completely then such blank areas of the plantation will be restocked by planting nursery raised seedling. Immature poles and saplings will be retained to form as a part of future crop. Minimum exploitable diameters of different species have been prescribed in this plan.

#### FELLING CYCLE AND ROTATION: -

(339) The felling cycle will be 15 (fifteen) years. There is no need to fix period of rotation in this plan for the exploitation old plantations.

#### EXPLOITABLE DIAMETER: -

(340) There are very few pure plantations is this division. The following species have been planted generally in mixture. :-

Khair, Siris, Gamhar, Sissoo, Eucalyptus, Bamboo etc. Natural species occurring in the plantation consists mostly of Sal, Asan, Sidha, etc. Their minimum explitable diameter at breast height is given below: -

Eucalyptus and Acacia auriculiformis :-	4: d.b.h.
Naturally grown species	:- 6" d.b.h
Sissoo, Teak, Gamhar and Khair	:- 8: d.b.h
Any other species.	:- 6: d.b.h

**ANNUAL COUPES. :-**

(341) Each felling series has been divided into 15 annual copes. The area of each coupe could not be made equal because the plantations have not been raised uniformly and in continuity each. Statement of annual copes has been furnished in appendix-XIV. The plantation copes to the state trading division. Latest by the end of October of each year for their working.

**(342) SECUENCE OF FELLING. :-**

The sequence of felling has been so arranged that the older plantations will be worked first and the younger plantations subsequently after them. The coupe number in the statement of annual copes will determine the sequence of felling.

**YIELD: -**

(343) The yield of the plantation copes of this division will be regulated by area because the success of plantations are very much variable from one plantation to the other and even in the plantation from place to place.

**METHOD OF EXECUTING FELLING AND RIGHT HOLDERS SHARE: -**

(344) (a) Felling operations will be regulated by area copes will be divided into four sections one better section. Will be opened to right-holders. If that will not be enough to meet their requirements, the other section may be given by the range officer after due permission from the divisional forest officer.

(b) The felling will start from one section and it will proceed in a systematic manner to the last section of the coupe Lanky, hollow, crocked and malformed splings or poles below the exploitable diameter will also be coppiced.

(c) coppice shoots needs be attended properly to get new shoots which shall from the future crop of the area. Fencing of the copes after working will be done to plant in blanks the next year.

(d) 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.

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

(f) It will be the responsibility of the territorial divisional Forest officer to protect the area immediately after felling. For this purpose he has to plan and make funds available one year in advance.

(g) 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 created in their area. These lops and tops will not be given to the coupe purchaser if any.

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

#### POST FILLING OPERATIONS: -

- (a) Climber cutting will be done in the coupe.
- (b) All debris and inflammable materials will be proved from the coupe as a precaution against fire hazard.
- (c) The coupe are will be completely fenced to provid affective check against crazing.
- (d) Blank areas of the coupe will be taken up forreafforestation in the year subsequent to the felling.
- (e) Gully plugging work should be taken up along with the reafforestation of the blank areas. The failed species should not be tried again unless the divisional forest officer is confident of its success in the particular soil.
- (f) Coppice shoots needs be spaced on the next year of felling. Shoots less than ½ metre in height need not be spaced at all. In taller shoots the spacing should be ½ the height in metres between the coppice shoots.
- (g) After felling the area will be automatically transferred to rehabilitation working circle and will be restocked by sowing and planting in subsequent year.

#### DISPOSAL OF THE PRODUCE: -

(346) The state trading Division will dispose of the forest produce as per their rules and procedure. The distribution to the individuals should be left to the panchayat concerned. The Mukhia of the concerned panchayat should be informed first to earmark the portion of the coupe for right holder. Difficulties may area during excution of this prescription and so the territorial

divisional forest officer authorised to deal with it even with some modification and relaxation of this prescription.

**CAUSES OF DISMAL PLANTATION: -**

(347) Though all the plantations have not been visited and their detailed inspection notes have not been prepared but whatever has been inspected gives a dismal figure. The failures are many. Even in successful plantations, damage by theft is very high. Protection from grazing is almost absent as no type of fencing is deterrent to cattle. Usually the plantations have been forgotten after two years. Few registers and plantation journals are available to know the technical details and actual rate of failure and their reasons. Improper selection of species for the site is also one of the main reasons of failure.

**(348) REMEDIES: -**

Social fencing seems to be the only fencing against the cattle. Community co-operation should be achieved by usufruct sharing with the local people. Provision has been made in this plan to give  $\frac{1}{4}$  to  $\frac{1}{2}$  of the plantation area to local right-holders. If the local community is ready, they can be associated in replanting and protecting the area as envisaged and directed in paragraph 237 of this plan.

**CHAPTER-VI**

**WORKING PLANS FOR THE KHAIR OVERLAPPING WORKING CIRCLE GENERAL CONSTITUTION: -**

(349) Khair bearing areas of Garhwa south Division have been included under the khair overlapping working circle. Areas where khair (*Acacia catechu*) is very much scattered here and there have not been included under this working circle but prescription for their exploitation has been given separately. The distribution of khair bearing areas allotted under this working circle is given below. :-

Sl No.	Name of Range	Area Under Khair overlapping Working Circle	
		Acres.	Hectares.
1.	Ranka East	16,587.97	6,713.06
2.	Ramla West	9,749.10	3,945.40
3.	Kutku	9,458.01	3,828.00
4.	Bhandaria	10,306.02	4,170.79

5.	Chainpur	8,654.21	3,502.31
	<b>Total :</b>	<b>54,755.31</b>	<b>22,159.17</b>

#### OBJECTS OF MANAGEMENT: -

(350) Khair occurs mostly in an unhealthy state. The special objects of management, there fore, are. :

- 1- To being about a general improvement of the health of khair forest by gradual removal of unhealthy stems and to obtain adequate healthy young regeneration.
- 2- To obtain maximum sustained yield of khari trees of economic size of katha manufacture.

#### CHARACTER OF VEGETATION :-

(351) Khair more or less occure all over the area as the locality factors appear suitable for it. Young Khair regeneration is almost invariably met with on freshly expose soil in the salai and bamboo forests. Growth of Khair is generally stunted on heavily grazed sites. Pollarded and stunted khair and stems with longitudianal craks exposing the heart wood are commonly found in the midst of extensive blanks, lopping, grazing and fire are the factors inhibiting the healthy growth of khair in this division.

#### SILVICULTURA SYSTEMS.

(352) Selection cum improvement system had been adopted in Roy's plan. The same system will be followed in this plan.

#### EXPLOITABLE DIAMETER.

(353) Exploitable size 8" and above in diameter over bark at breast height for khair trees has been standardized for the forests of Bihar. There fore the minimum exploitable diameter of Khair will be 8" over bark at breast height in this plan.

#### FELLING CYCLE.

(354) As per age/diameter curve reproduced from roy's plan in chapter-vi it appears that a khair tree takes 33.25 years to attain 8" diameter over bark at stump height and 44 year to attain 10" diameter over bark at stump height. Assuming taper of 2" in diameter over bark from stump height to breast height (which actually is the limit in case of khair) it is clear that is takes nearly 11 years for the class-II trees to reach class-I size which is fit for exploitation. Martality percentage at this age is very low.

(355) A felling cycle of 15 years was adopted in Roy's plan for the working of khair in his division. This has been in practice for the last 35 years. The same felling cycle of 15 years has also been adopted in this plan. It also safeguards any over felling as is evident from the age-diameter curve.

#### YIELD.

(356) The khair bearing areas having trees in exploitable numbers have been shown on the stock map of the forests in 4"=1 mile scale. Unworkable scattered khair occurring in many P.Fs have not been included in this working circle. Besides large scale plantation is going on in Garhwa south division which have khair as the main species. Such planted khair trees will become explitable after say 30 years or so. Such areas also have not been included in this working circle.

(357) Khair is on species which has gained a lot of economic importance in the last 10 years. The prices of khair wood has very high in and outside the state. Fixing yield in terms of number of trees to be removed may cause over felling. Fixing yield by number of trees has also the danger of illicit cutting from adjoining areas of such coupes in the present circumstances. In view of the above circumstances Yield shall be regulated by area. This will have check on the exploitation of khair trees in the pescribed P.Fs. only.

The following provision has been made for exploitation of mature khair trees which are outside the areas of this working circle.

(i) In the coppice with standard and coppice selection coupes also which fall outside the khair overlapping working circle, khair trees of exploitable diameter 8" shall be market for felling during the working of such and above coupes. This will not cause difficulty because exploitation is being done by Government Agency and they bring all the material in their depots.

(ii) While cutting back and clearing the annual area of rehabilitation cum afforestation and plantation block, the khair trees of exploitable diameter felling therein will be marked for felling provided such areas do not falll in thekhair overlapping working circle. Marking all be done by the territorial division and extraction and disposal by the state trading orgainsation, who are engaged in the trade of timber and other produce.

FELLING SERIES. :-

(358) There are five ranges in Garhwa south Division. In this division there are 9 felling series in Khair overlapping working circle. Fifteen coupes have been formed in each felling series corresponding to the number of years in the felling cycle. Efforts have been made to allot the entire khair bearing areas of one P.F. in one coupes but part area of some P.Fs. have also been allotted to coupes wherever necessary. A statement of felling series with annual coupes is given in Appendix-VIII.

#### COUPE LAYOUT.

(359) The marking officer should select natural features like ridges, nalas or well defined foot paths, cart tracks etc. for purposes of laying out coupe line or in the alternative straight lines may be drawn on the map from such fixed points as are easily located on the ground corresponding to those on the map. The standard practice of putting double-ring-coaltar-mark on trees along five feet wide cleared coupe line should be followed.

#### MARKING RULES. :

(360) The following instructions shall be observed during marking.

- (i) Khair trees of 8 inches and above in diameter over bark at breast height shall be marked for felling.
- (ii) Dead and dying, heavily pollarded and cracked trees shall be marked for felling irrespective of their size.
- (iii) Two blazes of 6" x 4" size on each tree on opposite direction and in the direction of the next marked tree will to be given. One these will be at breast height and the other within 6" from the ground level. Serial number of the tree both in digit and coaltar mark shall be given on each marked tree.
- (iv) The marked trees will be recorded in the prescribed form.

#### EXECUTION OF FELLING.

- (361) (i) All marked trees shall be felled as close to the ground as possible leaving the lower blaze with serial number intact.
- (ii) Felling should proceed from one end of the coupe with an even front and section by section.

#### OTHER REGULATIONS.

- (362) (i) The staff should be vigilant against illicit cutting because persons engaged

in the trade and business relating to katha manufacture are active to associate local people in the removal of khair trees.

- (ii) Strict action has to be taken against many employee of the forest Department who are found guilty of connivance in illicit cutting.

#### CHAPTER-VII

#### WORKING PLAN FOR BAMBOO OVERLAPPING WORKING CIRCLE

#### GENERAL CONSTITUTION AND CHARACTER OF THE VEGETATION.

(363) All the bamboo bearing areas of Garhwa south division have been included in this overlapping working circle. Some of the bamboo forests have deteriorated to a large extent and they need special treatment. Such deterioration has generally taken place nearer to the human habitation.

(364) This working circle overlaps other working circles and comprises of all the areas containing workable quantities of bamboo (*Dendrocalamus strictus*). The bamboo, to a large extent, occurs in dry mixed forest often associated with salai on hill tops and occasionally with sal. The best quality, in respect of height and diameter growth of culms is noticeable in side jun, Gagodih, Pargawa, Kilhar in Ranka East range and in Hesatu, Sarwat, Tenhri in kutku Range.

Range wise distribution of bamboo bearing areas are given below.

Sl. No.	Name of Range		Bamboo Bearing Areas.	
			Ac.	Ha.
1	Kutku	:	8,149.00	3,297.85
2	Bhandaria	:	4,032.00	1,631.72
3	Ranka East	:	10,454.69	4,230.95
4	Ranka west	:	11,582.63	4,687.42
5	Chainpur	:	15,899.40	6,434.40
	<b>Total</b>	<b>:</b>	<b>50,117.72</b>	<b>20,282.36</b>

#### OBJECTS OF MANAGEMENT.

(365) The objects of management are. :-

- (i) To develop the bamboo bearing areas by scientific management.
- (ii) To meet the bonafied requirements of the right-hoplder and to fulfill the demands of doms and trees who are skilled people and who earn their livelihood by making baskets and such other things.

- (iii) consistent with the above to secure a sustained yield both in quality and quantity.

#### TREATMENT FOR THE DEVELOPMENT OF CLUMPS.

(366) It has been found that certain bamboo bearing areas have degenerated clumps and even blanks areas in their midst. The following treatment is, there fore, prescribed for their growth and improvement. This should be followed strictly in the intrest of the bamboo forest of this division.

(367) There may be three types of bamboo clumps viz. Small, medium and large. Crobar holes four in number will be dug at the four sides of the small clumps. In case of medium and large clumps six and eight holes respectively will be dug around the clump. These holes will be 1 ft. deep. Sufala manure or misture of any manure having nitrogen, phosphorus and potassium will be inserted in these holes with the help of hollow tubes made of tin. The quantity of manure for each holes in large, medium and small clumps will be 500gms. 250gms. And 125gms. Respectively. This will provide sufficient nourishment to these clumps in the month of july afte first rain. It is expected that after four years clumps will become fit for exploitation.

The doze of fertilizer in the second year will be repeated with the same quantity of manure. There after the application of fertilizer may not be need. If necessary selected clumps may be given the same doses of manure again.

(368) Fire protection and protection against grazing is a must in these areas. Special efforts needs be done so that the treatment for boosting the growth of these clumps do not go waste.

(369) Another important item of work for these clumps will be cleaning of dead, dying, dry and broken culms in the first year before application of fertilizer. Cleaning has to be done around 3ft. of the clumps. Congestion of culms will have to be removed from the center to the periphery. Dead, dry twisted and damaged culms will have to be removed with the help of sharp axe. Care has to be taken not to damage or disturb the rhizome, cutting of culms will be done just above the first node.

#### CUTTING SERIES.

(370) Bamboo bearing areas have been shown on the stock map of forests on 4"=1 mile scale. There are \_\_\_91\_\_\_ P.Fs. which have been included in \_\_\_31\_\_\_ bamboo cutting series. Range wise distribution of bamboo bearing areas have been shown appendix-X-VIII.

Name of Range	Number of Cutting Series	Areas Cutting Series	
		Ac.	Ha.

1.	Ranka East	:	5	10,454.69	4,230.95
2.	Ranka west	:	9	12,334.30	4,991.62
3.	Bhandaria	:	3	4,032.00	1,631.72
4.	Kutku	:	5	8,149.00	3,297.85
5.	Chainpur	:	9	15,899.40	6,434.40

#### CUTTING CYCLE.: -

(371) In Roy's Plan three years cutting cycle was adopted for bamboos. The result of three years cutting cycle has been discouraging so far and there fore a four year cutting cycle has been adopted in this plan.

#### BAMBOO COUPES:

(372) In the plan under revision the cutting cycle was three years. There fore the coupe area and coupe boundary line had to be changed in this plan to meet the requirements of four years cutting cycle. Endeavour has been made to give natural boundaries for the coupes as far as practicable. Where artificial coupe lines have to be cut it should be done by clearing 3 meter or 10 ft. wide strip along the line and putting standard double ring coal tar mark in such a way as to enable one standing on the line against a marked tree to seen easily another ring mark in front of him and also the one behind him.

(373) The name of the cutting series, coupe number, coupe area and year should be indicated on wooden signboards or on small painted iron sheets and nailed onto the tree at the crossings of coupe lines with roads, foot-paths and at the junction of two coupes. The sole object of such demarcation is to enable any man to go round a coupe without any assistance once he is shown the coupe line and a coal tare ring-marked tree on it. There should be three sections in each coupe excluding the area set apart (approximately one fifth of total coupe area) for the right holders which should, as far as possible, conform with the natural features to control felling operations sections to section systematically.

(374) Because the cutting cycle is 4 years, the coupe area should be nearly one fourth of the total area of the cutting series, Natural features have been adopted for the coupe lines as far as practicable. The section lines may be 5 ft. wide with half coal tar ring mark on the trees felling in the section line. Both the coupe line and the section line mark will be given at breast height on trees fallings in the line.

#### METHOD OF EXECUTING CUTTING: -

(375) The following cutting rules shall be observed while working the bamboo coupes.

- (i) Bamboo culms of previous season, commonly known as karil shall not be cut.
- (ii) As many older, healthy, green culms, as there are karils, subject to a minimum of eight, should be left in each clump towards the periphery so as to provide support to the karils.
- (iii) The clumps should be worked from inside out and all dead, dying and damaged culms shall be cut first and the rest, excluding those under (i) & (ii) above, cut there after.
- (iv) The surrounds of each clumps, after exploitation, shall be cleared at least 3 ft. round it as a measure of fire protection.
- (v) Removal of rhizomes or roots of bamboo is strictly prohibited.
- (vi) No clump containing less than 8 bamboos shall be worked except for the purposes of cleaning which would be confined to the removal of dead, dying and damaged clums.
- (vii) Felling is not permitted from 1<sup>st</sup> july to 30<sup>th</sup> of September.
- (viii) Should a coupe or its part remain unworked for any reason, the same shall be worked immediately after the close season is over so that it need not wait for three more years. In fact its working must be completed by November. The working in the next coupe should not be started till the previous coupe's working is completed by November.
- (ix) A clump in flowering shall not be cut before the seed fall.

#### SUBSIDIARY CUTURAL OPERATIONS.

(376) In the year following the main cutting the following operation shall be carried out.

- (i) Climbers damaging the clumps if any shall be cut at two places, one at the ground level and another one meter above the first cut.
- (ii) Cleaning around 3 ft. of the clumps if not completed shall be under taken and completed.
- (iii) Method of treatment as stated earlier may be applied on the discretion of the divisional forest officer in such bamboo bearing areas also which are outside this

working circle. Subsequent measures to protect them against grazing, theft and fire shall also be taken up while attending these area for other works.

#### SUPPLY OF BAMBOOS TO THE RIGHT-HOLDERS.

(377) Supply of bamboos to right holders will be regulated as follows.

(i) Approximately one fifth area of a bamboo coupe shall be earmarked separately for the right-holders. This was also followed in the previous plan they will exercise their rights and concessions in the allotted area in the stipulated time. Failure on the part of the right-holders to remove their requirement of bamboos within the stipulated period shall debar them from exercising their rights and the area shall be worked by the state trading. The stipulated period for right holders working shall start from October and end by the end of January of the following year.

(ii) A list right holders with the number of bamboos required by each of them shall be prepared by the consultation with the mukhia of the concerned Gram panchayat.

(iii) The right holders shall be give free permit by the range officer or his authorized officer for the stipulated number of bamboos.

(iv) The right holders shall cut bamboos from the allotted portion of the coupe under the supervision of Forester or a forest Guard.

(v) Right holder should end exercise of their rights by the end of January each year

(vi) Failure to observe cutting rules on the part of any right-holder may debar him from getting free permit for removal of bamboos.

#### SUPPLY OF BAMBOOS TO TUREES.

(377) Supply of bamboos to right holders will be regulated as follows. :

(i) Approximately one fifth area of a bamboo coupe shall be earmarked separately for the right-holders. This was also followed in the previous plan. They will exercise their rights and concessions in the allotted area in the stipulated time. Failure on the part of the right-holders to remove their requirement of bamboos within the stipulated period shall debar them from exercising their rights and the area shall be worked by the state trading. The stipulated period for right-holders working shall start from October and end by the end of January of the following year.

(ii) A list of right holder with the number of bamboos required by each of them shall be prepared by the Range officers of the respective range in consultation with the mukhia of the concerned Gram panchayat.

(iii) The right holders shall be given free permit by the range officer or his authorized officer for the stipulated number of bamboos.

(iv) The right-holders shall cut bamboos from the allotted portion of the coupe under the supervision of a forester or a forest Guard.

(v) Right holder should end exercise of their rights by the end of January each year.

(vi) Failure to observe cutting rules on the part of any right-holder may debar him from getting free permit for removal of bamboos.

#### SUPPLY OF BAMBOOS TO TUREES.

(378) In the beginning of Roy's plan the supply of bamboos to the turees were made by issuing permits at regular intervals from the range office. But the fast deterioration of bamboo clumps in the forests led to the stoppage of commercial exploitation of bamboos in many coupes and gradually the practice of issuing permits to the turees also stopped although there was no such order from any superior officer.

(379) Earlier Turees were dependent on their family trade i.e. using bamboos to prepared baskets, sup, mats etc. Due to all round development in the society many of them have left this trade although some of them are still continuing this trade with local bamboos.

(380) It would be of interest to note that the turees use to cut immature culms, split them in the forest longitudinally to take out the outer 30 ft portion for basket making and leaving the inner portion with nodes scattered about in the forest. These, after drying, become highly inflammable and stood as great menace to forest fires, At present even these wastes are being taken out by local people for firewood.

(381) It is expected that the condition of bamboo forests will improve after 4 years or so and the turees may be able to get the bamboos as per the norms followed earlier. In the larger interest of the forest and the community it is advisable to encourage the local people plant bamboos in their farm lands and other available lands. This will also improve their economic condition. Turees will have no difficulty in getting their need of bamboos fulfilled locally. The forest department seedling to the local people.

#### OTHER REGULATIONS.

(382) The working circle should be protected from fire and grazing. Lopping of bamboo for purposes of feeding cattle must be prohibited.

CHAPTER-VIII  
MISCELLANEOUS REGULATIONS.

KENDU LEAVES.

(383) This is one of the most important minor forest produce of Garhwa south division. This is being managed and traded by the bihar state forest development corporation. Kendu leaf trade is Nationalised in bihar.

(384) Prior to nationalization 1 the leaves used to be sold to the purchasers every year. Some kendu leaf units were leased also to the purchasers for three or more years. Yield of kendu leaves were stipulated for each unit and the purchasers were bound to pay the royalty for 75% of the stipulated number of standard bags even if the yield was low. In case of higher yield the purchasers had to pay royalty for the extra production over the estimated yield. Difficulties were felt in the realisation of revenue from the purchasers and in ensuring payment of fixed minimum collection wages to the labourers engaged in the collection of kendu leaves.

(385) Kendu leaves and its trade was nationalized in the year 1973 as a result it came under direct government control. During 1985 the entire management was transferred to the bihar state forest development corporation. The collection of kendu leaves and its trade and management is being treamlined every year with improvements.

(386) Quality of kendu leaves of Garhwa south Division good but the corporation should spend adequate money every year for coppicing and pruning of kendu leaf plants to augment production to further improve the quality of kendu leaves.

(387) The collection centers of kendu leaves are locally known as phanris. Collection centers of the unit have already been selected and notified by the govt. and each of them is being managed by munshi of the corporation. Lamps or packs which are co-operative organisations also collect leaves at these centers independently and hands them over to the corporation.

The corporation ensures payment of minimum wages fixed by the Government every year. (1)  
Different rates of collection per standard bag from 1973 is given below: -

Year	Rates	Year	Rates	Year	Rates.
1973	Rs.17.50	1979	Rs.27.00	1985	Rs.52.00
1974	Rs.17.50	1980	Rs.27.50	1986	Rs.65.00

1975	Rs.20.00	1981	Rs.35.00	1987	Rs.65.00
1976	Rs.20.00	1982	Rs.40.00	1988	Rs.65.00
1977	Rs.20.00	1983	Rs.44.00	1989	Rs.81.00
1978	Rs.22.50	1984	Rs.50.00		

One standards bag consists of 1000 standards pollas of 50 leaves each. The leaves are dried and bagged at the phanris. The bags are numbered and then they are transported to the central godowns under permits. Transporters are appointed by open tender. The godowns are supervised by forest guards of ‘ Van Upaj Adhidarshak ‘ . Kendu leaves are sold by open auction at general manager’s / DM’s level or at MD’s level. The sale is effected on per kg. Basis and the highest bidder gets the proceeds. Agreement is then signed. 10% security for big lots and 25% for small lots are deposited by the highest bidder at the time of auction. They receive the materials as per the payment of instalments. The money is deposited in the office of the General Manager. Auction had been done in advance i.e. before the plucking of leaves started during 1989 season. This pacilitated 100% sale before the collection of the leaves.

(388) The divisional manager does not have adequate powers to execute field work, to auction the leaves and to receive the revenue. Some of the powers of the general manger and the head quarters need be vested to the divisional manager for quick decision at his level and in the interest of intensive and efficient management.

(389) The present staff position at the divisional manager’s level is inadequate. As the number of phanris are too many in a division the number of supervisory staff needs be increased and new works have to be created for their utilization round the year. The munsis, who are not government servants, are many a time unreliable end so they create problems. Some alternative system needs be evolved to overcome this difficulty.

#### OTHER MINOR FOREST PRODUCE.:

(390) The bihar state forest development corporation also managers the collection and sale of mahulan leaves. The procedure is almost similar to that of kendu leaves.

(391) The corporation also manages the collection and sale of oil seeds such as sal, kusum, karanj, palas, mahua, harra, bahera, and amla. These seeds are also collected at the same collection extraction plant has been commissioned by the corporation at latehar in the district of palamau. Sal seeds are processed and oil is extracted in the solvent extraction plant and tannin is extracted in the tannin extraction plant.

#### IRREGULAR EXPLOITATION: -

(392) For purposes of department work or supply of small poles or for meeting special grants sanctioned by a competent authority irregular exploitation outside the prescribed areas are allowed provided the conservator of forests of the territorial circle approves it.

(393) Salai, Khair and bamboos are present sporadically or in small patches here and there outside the area of the respective working circles. Occasions may arise when the divisional forest officer is unable to protect such scattered trees from theft or illicit removal due to adverse local conditions or other unavoidable circumstances. In such cases the divisional forest officer shall submit a proposal for their exploitation to the conservator of forests. The working plans officer and the conservator of forests shall decide and accord necessary permission for their removal in the interest of Government revenue.

#### PRESERVATION PLOT: -

(394) A 12.5 acre plot near the junction of katra and damaran village locally known as "Sarabdah" contains quality II-III sal. There is no more. A preservation plot of 12.5 acres in Lehda PF also do the same Sal quality class. Rate of growth in girth and height be recorded every year in the respective felling series history with a copy sent to the F.R.O Bihar, Ranchi for record.

(395) The area of preservation plot will be excluded from any operation prescribed in the plan. The trees on the Feriphery should be white-paint-ring marked at breast height and name plates fixed separately in conspicuous places.

#### ROADS: -

(396) The position of roads in the division is satisfactory. A few small link roads may however be constructed as and when their need arise out of the budget of the division.

(397) Roads however needs be repaired regularly to kept up their efficiency. A list of forest roads in Garhwa south division is given in appendix-XI. The appendix also gives the name of new link roads to be constructed in future.

#### BUILDINGS.

(398) For the smooth efficient functioning of administration it is necessary to provide quarters to every permanent staff of the division. Some of the forest guards and foresters are living in private houses where they can not keep their families with them. Priority should, there fore, be

given for the construction of residential accommodation of forest guards and foresters. A list of existing and proposed buildings for constructions has been furnished in appendix- XI.

(399) The Divisional Forest officer is advised to chalk out a building programme to complete them out of plan budget as early as possible. Care should be taken to distribute the work in a particular year to the different ranges and Beats. Where aquisition of land is considered necessary steps should be taken to obtain administrative sanction, well in advance so that the lengthy acquisition proceedings are completed in time for proper utilization of budgetary provision. Building must not be constructed in isolated places because such buildings remain unused and later used by unsocial elements for criminal nexus all activities.

#### WELLS.

(400) A list of existing wills and wells proposed to be constructed have been furnished in Appendix XI. Care should be taken to dug new wells at the site of construction of new buildings in advance so that its advantage is taken during the construction of buildings.

#### SURVEY AND MAINTENANCE OF MAPS.

(401) The division is fully equipped with cadastral maps of 16 =1 mile scale showing forests therein Topo maps of 1"=1 mile scale are also available there. A forest map of Garhwa North Division had earlier been supplied to the division from the Working plans Division, Western Circle, Daltonganj . Stock maps of the forests were prepared on 4=1 mile scale. A working plans map of the division on 1"=1 mile scale. A working plans map of the division on 1"=1 mile scale will also be supplied to the Divisions along with the revised plan..

(402) Fire maps will be maintained on scale of 1"=1 mile in the division and in the ranges. Occurrence of forest fire will be shown in the map of felling series histories every year by the distinctive symbols as per Working plans Procedure Code. The symbols as per Working Plans Procedure code. The symbols beginning from 1989 would be indicated as given below .

Year	Symbol for indicating fire.
1989	
1990	
1991	
1992	

1993

- (403) The fire maps on 1"=1 mile scale has to be maintained for 5 years. After 5 years they shall be kept as record and next set of maps will be started from 1994 onwards with the same set of symbols as from 1989 above. Each felling series will have one set of from 1989 above. Each felling series will have one set fire map on 4"=1 mile scale maintained for 5 years and repeated with the same symbols in the next 5 years.

#### FELLING SERIES HISTORIES

- (404) Two sets of felling series histories complete in all respects have been prepared. One for the Range and the other for the record in the division. Both the sets have been set to the division for needful. During rainy season from July to September every year it will be the duty of the Amin and Amin Inspectors in the Divisional office to make necessary entries in the felling series of the divisional office from the up to date entries of range Copy. This item of work has been much neglected in the past as a result of which relevant information of felling series during the past years are not available in the felling series during the past years are not available in the felling series histories.
- (405) Standard forms have been supplied in the felling series histories. Stock map and management map have also been provided in each felling series history. Coupes have been shown on the management map.

#### CONTROL FORMS.

- (406) Three Complete sets of control forms have been prepared in loose- leaf clutch file. One set is for the Divisional Forest Officer's use and office record. One set is for use and record in the office of the Working plans Officer. The third set is flying set which will be filled up yearly and set to the Working plans officer within two months of the close of the Working plans officer within two months of the close of the Working Plan year (1<sup>st</sup> July to 30<sup>th</sup> June). It will then be forwarded to the chife conservator of Forests , Management, Bihar for approval of deviatiohs if any and his countersignature.

(407) Control from no. 1,4,5 and 7 is to be maintained for the following prescription of the working plans: -

Form No.-1 List of deviations collected from number 4,5 and 7 for approval of the chief conservator of forests, management, Bihar.

Form No.-4 Control for area yield of

- (a) Coppice with standard coupes under commercial and community cum commercial working circle.
- (b) Coppice selection coupes under commercial and community cum commercial working circle.
- (c) Khair coupes under khair overlapping working circle.
- (d) Bamboo coupes under Bamboo overlapping working circle.

Form No.-5 Control of thinning in areas under coppice with standard and coppice selection working circle.

Form No.-6 (a) Control of exploitation of older plantation areas in plantation working circle.

- (b) Control of the treatment of areas under Rehabilitation cum-Afforestation working circle.

#### MAINTENANCE OF BOUNDARIES:

(408) Forest areas in all the villages have been shown on the cadastral map of 16"=1 mile which are available in the division. Boundary pillars have not been numbered in the map. It should be done as early as possible. Total number of boundary pillars and information regarding natural or artificial boundary line have been furnished in appendix-XIII.

(409) The divisional forest officer is advised to utilise the services of amin and Inspector Amin of the division for checking up boundary lines and boundary pillars besides other survey work that may be needed from time to time. As a routine operation complete checking of boundary line and boundary pillars of one best in each range of division has to be done annually so that the work is distributed uniformly to all the ranges.

(410) The range officer shall check up fifty percent of the boundary survey work and the divisional forest officer to the extent of twenty five percent, each of whom shall give a certificate of having checked the work and actual defect noticed in course of inspection which were set right in their presence. Stress on inspection of boundary and boundary pillars must be given-by

the conservator of forests, western circle and the chief conservator of forests, management, Bihar regularly and a note to the effect should be given in their office inspection and field inspections. These certificates should be maintained as record in the divisional offices. The form of certificate that each of the territorial staff from forest guard to the divisional forest officer has to submit to his immediate superior officer is given below.

(411) This is to certify that I checked the boundary lines and boundary pillars of the following villages from (date) \_\_\_\_\_ to \_\_\_\_\_ from \_\_\_\_\_ to \_\_\_\_\_ from \_\_\_\_\_ to \_\_\_\_\_ and the defects noticed by me are mentioned in the table, which were set right in my presence to the extent mentioned in the table. The rest of the boundary pillars checked and which agreed with the map are given in the table.

Name of P.F	Thana & Thana no.	Defects noticed.	Extent of rectification Done in presence.	Remark
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Dated.....

Place.....199

Signature

**Grazing:**

(412) Grazing is one of the foremost need next to timber and fuel for the local people residing in and around the forest of Garhwa South division. Grazing fee on buffaloes maintained for trade on ghee is, therefore, payable. Grazing of goats and sheep in herd is also prevalent but only a few of these, particularly the sheep, belong to local tenants, of ranka thana. Most of the sheep herd are from outside the district of palamau such as Shahabad, Gaya and Mirzapur.

(413) The entire economy of the villagers in the vicinity of forests, as a matter of fact, is bounded up with forests. But the effect of continued unrestricted grazing is the ghastly devastation of forest wiping out not only the existence of the produce that supply the prime need of timber and fuel but also the fodder on which cattle feed. In dry hot weather the goats become practically omnivorous and anything green within reach is eaten up. The herd of sheep flow-in on the on-set of monsoon and then go back with the approach of hot weather. Under the

erstwhile zamindari system grazing was permitted in return of blanket, ghee, goat with or without cash grazing fee. Free grazing of sheep was permitted when the sheep herded on agricultural land for a number of nights for their droppings which have rich manural properties.

(414) The trade on blanket by the gareris, form a part of the rural economy. Sheep can not be stallfed. The sheep do not graze deep into the forests for fear of wild animals but within fringes within a mile or two of road-sides or the village habitation constantly changing places. Provision has, there fore, to be made for their grazing but on payment of grazing fee.

(415) As most of the degraded forests have been brought under rehabilitation cum afforestation working circle for special treatment by gradual fencing, enough protection would be given to such forest under the working circle without taking recourse to rotational system of grazing. The area under plantation will also remain under fencing for five years. So the only area that need be brought under strict grazing regulations under this plan is the coppice felled areas under the coppice with standards and coppice selection working circles. The following prescriptions to regulate grazing there- in are recommended.

Fire:

(416) Fire occurs generally from March to May mainly and occasionally even earlier when special dry conditions prevail. Monsoon sets in from about the middle of June with which the fire hazard stops. The fire that occurs is surface fire which scorches young seedlings of sal which dies back, buns humus and leaf litter, hardens the soil rendering it unfit for seeds to germinate and strike roots into the ground and as years roll by, sheet erosion is accelerated to gully form on slopes. Timber gets affected by dry rot and unsoundness is the result.

(417) Fire is deliberately caused by the villagers to get a quick succulent new flush of grass in hot weather for cattle feed which stimulate such growth. Fire is also caused by the collectors of Mohua flower for the ease of collection when the ground below the Mahua trees is cleared of their dry leaves by burning. Besides fire is caused by stray travelers passing through roads and foot-paths in forests who light fire for cooking at camping sites or for smoking and leave the fire burning, the splinters from which are easily blown off into the adjoining forest to set fire to it. The cumulative effect of all these is the slow and steady destruction of forests to the detriment of those who cause them and who need its existence most for their own sustenance.

(418) In view of the above circumstances the following prescriptions shall be followed:

- (i) The existing boundary lines should be fire traced and control-burnt from February to march Every-year.
- (ii) Sweeping of dry leaves for collection of mohua flowers has to be stressed repeatedly during the season by all he staff of the division in and around the forests by holding meetings, demonstrations and distribution of hand bills.
- (iii) The idea should be to educate the people to save the forests, the national assets and their own environment at every cost.
- (iv) The forest personal of all categories should pay their attention to extinguish fire whenever they come under their notice during official or private journies in forest areas. This will give practical lessons and demonstration to the local people and will enthuse interest in them.
- (v) Right-holders deriving benefit from forests, have to assist in the matter of clearing and burning of boundary lines within the forest they exercise rights, and when fire occurs, shall assist the forest department staff in putting out fire. However there should be some funds for food and work time.
- (vi) Award of cash prizes for meritorious work in saving forest from fire, either by prevention or by remedying it, is recommended. The prizes may be given individually or collectively to a village.
- (vii) The amount of prizes shall be Rs. 1000/- for the village standing first and Rs. 500/- for the village standing second. The amount of prize for individual worker, not connected with forest profession will be Rs. 200/- and one such prize should be awarded in each range. The prize given to a village shall be utilized for the common benefit of the villagers.
- (viii) The distribution of prizes shall be made in October every year during the wild life week. The divisional Forest officer, on the recommendation of the range officer, shall submit in August every year the names of the villages and individuals deserving prizes with justified grounds to the conservator of forests who will forward the same with his recommendation to the chief conservator of forest, management, Bihar for sanction.
- (ix) Award of prizes will be done ceremoniously on a festive occasion by such dignitaries as would enhance its publicity value.

- (x) In case of failure on the part of individuals or villagers to discharge their responsibilities assigned to them under the prescriptions of this plan, rights may be temporarily suspended by the Government or collective fines imposed on them on the report of the divisional forest officer giving instances justifying such action. However, in the present political area, it may be only wistful thinking.
- (xi) Printed handbills explaining the causes of fire, their preventive and remedial measures and the co-operation of the populace needed to protect forest from fire should be widely circulated, in every village and Gram-Panchayat, every school, thana, post office and to the public. The hand bills should also announce the various cash prizes to be awarded annually.

#### REMOVAL OF TAN, BARK FRUIT, LEAVES ETC.

(419) Mochis living in villages close to forests may remove tan-bark of asan (*T.tomentosa*) from the current coupe for their own requirement. A tannin factory has come up at Latehar. The divisional Forest officer may look to the possibility of commercial exploitation of tan bark of asan (*T.tomentosa*), dhauras (*Anogeissus latifolia*) and myrabolans and prepare a scheme for the same and also prepare scheme for plantation of these species. Which are used for extraction of tannin and solvents.

(420) Right-holder shall have full liberties to collect fruits, khajur leaves, gethi and seeds for their own requirement free of cost.

(421) Mining operations have accelerated during the past three decades. New industries also have come up in the area as a result of which a large number of people from outside are setting down in the villages close to the forests for business. It would not be proper to extend the liberties of the business. It would not be proper to extend the liberties of the right-holders to the non right-holder living at the same place.

#### REMOVAL OF DRY FALLEN FIRE WOOD.

(422) The present practice by head loaders to cut standing green poles and saplings and leave them in the forest to become dry fallen firewood has to be stopped at all cost although it is easily said than done due to political circumstances, there is no other alternative at present other than strict supervision on the illegal manufacture of fire wood by the head loaders. But dry fallen wood may be removed by the right holders from any part of the forests for the bonafide use and not for sale or barter.

## KUTKU RESERVOIR:

(423) Under a huge multipurpose scheme of some valley project, the river koel is being dammed at kutku to form a reservoir. A Forest area of 6037.49 acre or 2442.93 hectare is to submerged in the dam at 1150' contour line c.c. F's letter no 1534 dated 13.3.78 and 1571 dated 13.3.78, the submergence area was clearfelled in 1978-79. A total of 264 coupes in 5628.40 acres were laid out in all the felling series keeping their normal coupe sequence in obedience. The total area required for the purpose is as below.

### **Table No created**

(424) It was expected that the reservoir will be fully submerged before 1980. As the construction of the barrage delayed, another clear felling was made in the year 1989-90 and 190-91 expecting that up to 30<sup>th</sup> June, 1991 the reservoir will start storing water. In the 2<sup>nd</sup> felling total 5962.00 acres of land is being deforested including the last 5628.40 acres. As shown on the map of survey of India an area of 6757.49 acres up to 1150' contour line will be submerged as against only 5967.47 acres of forest land according to survey conducted by irrigation department. Hence a discrepancy has cropped up which needs further verification to arrive at final emergence of forest land to submerged. The irrigation department is to pay Rs.10,10,30,883.00 as compensation. Outside the submergence area 68.50 acres has been recommended in Kutku and parro villages for other purposes at a compensation of Rs.14,37,902.00 though the demand was of 196.50 acres of land.

(425) Building to Submerge: -

In the kutku dam the following quarters, wells and roads will be submerged.

Building		Road to submerged		wells
F.R.H				
B.O. Quarter kutku	1	1. Kutku	Hesatu	16km. 1
R.I. Hut Quarter kutku	1	2. Kutku	Sinzo polpol	8km.
Fr. Quarter kutku	1	3. Sidke	Sangali	3km.
Naka Guard Quarter kutku	1	4. Kutku	Parro	3km.
Naka Shed Quarter kutku				
Well Quarter kutku				
F.G. Quarter madgari				

R.I.Hut. Quarter

## **Table Is not complete.**

(426) Compensation of building: -

In exchange of the submerging Quarters the following seven irrigation quarters at mandal have been transferred to the Forest Department. These are 11/2,39/E,44/F,79F,122/F, and 131/F, Quarter no.91/E, though transferred, but has not been occupied by the department.

RESERVOIR AREA REGULATION: -

(427) Kutku 'Dub' area falling in the 15 villages has been calculated on the basis of the supplied map by the irrigation Dept above 1150' M.S.L. The extent of area is not very clear and may increase as 4m below the H.F.L. will remain under submergence for longer period. Even the topo maps data differ in submergence area. The Divisional Forest officer Garhwa South and the Executive engineer kutku Dam. Mandal should seat together and jointly inspect the area to reach the final and actual area of submergence.

(428) The 'Dub' area will be notified as the Reserved forest including all private and Govt. land in submergence. The irrigation Department will have the right to use the water and the land will be transferred back to the F.D. when the life of the dam will expire. An equal area of land will be acquired by the irrigation dept. and made available to the divisional forest officer for afforestation the cost of which will be done by the former.

NON-SUBMERGENCE AREA REGULATION: -

(429) Out of 31,730.63 acre of the eleven felling series will remain above water. This forms the buffer of palamau reserved of Roy plan 25,768.62 acre. As all the villages are to be shifted the right holders, right will be practically exingnished. Also these area are remote and will be unapproachable due to the sumergence of the roads. These area form the most important catchment of the reservoir and need intensive soil conservation. The best thing will be to leave this area at its own so that the soil erosion will reduce it-self with increase of vegetative cover and decrease of grazing and exploitation. This will also incresse the wild life population, the area will be strictly protected from fire and theft.

(430) The General purpose of the regulation is to

- (i) Compensate the clear felling of the su..... area.
- (ii) Conser moisture and soil to reduce the run off and silt load,
- (iii) improve \_\_\_\_\_ of the wild life and

(iv) protect the area for posterity.

**ENCROACHMENT: -**

(431) The divisional records reveals that about 1769.86 Ac./716.25 Ha. Of forest land of Garhwa Division has been encroached up on in 142 villages by 1651 encroaches. The act of illegal encroachment is gaining day by day. The survey settlement operation has been taken up by the revenue department and it is in progress. Various stages of settlement operation have been finalized. The result of these stages has endangered the safety of forest land as records prepared so far, by the survey dept. Have given illegal possession over the forest officials. It is stated that in survey camp the Divisional Forest supported by all valid documents and records to delete such mentions under section 83 and 89 of C.N.T. act but of no use. This attitude of survey officials has created a grave situation which need government intervention. However all such matters should be fought in the court of law to remain in title and possession over such land till last.

**REMOVAL OF ENCROACHMENT: -**

(432) The Divisional Forest officer Garhwa south has been vested with the power to ovict from the forest land, suitable proceeding against such incroachments should be initaiated wise to reclaim the land within a period of 10 years. The Divisional forest officer should approach the Govt. and high officials of survey and settlement dept. so that no record of \_\_\_\_\_ are is \_\_\_\_\_ .

**KHALSA OR VILLAGE FOREST: -**

(433) Khalsa or village forest in kunda village of daltonganj thana no.148 of an area 412.00 acre is to be notified under section 4 of the Indian forest Act 1927 and a draft notification has been sent by the Divisional forest officer, Garhwa southvide his letter no.3349 Dated 5.10.83 and forwarded to the secretary forest vide letter no 851 dated 20.6.84 by the conservator of forests, western circle, Daltonganj. The notification is still awaited.

**NOTIFICATION ON P.F.S.**

(434) Around 3033.30 acre of Govt. waste land in 24 villages of the Garhwa South division has good forest to be notified as PFs. A draft notification has been sent by the Divisional forest officer Garhwa south for this purpose. The notification uner section 29 of the Indian foresst Act 1927 is still awaited. The list of such villages are

Sl. No.	Village	Thana	Thana No.	Area in Acres.
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No.

1.	Chirka	Ranka	6	96.50
2.	Chapkali	Ranka	8	200.00
3.	Palhe	Ranka	21	28.00
4.	Bardari	Ranka	40	81.00
5.	Kauthautia	Ranka	51	219.25
6.	Bandua	Ranka	53	102.00
7.	Tahle	Ranka	54	201.00
8.	Sing singa khurd	Ranka	57	50.00
9.	Semarkhar	Ranka	61	44.00
10.	Honhe Khurd	Ranka	65	63.00
11.	Ranka Khurd	Ranka	75	20.00
12.	Kutti	Ranka	106	118.05
13.	Kasmar	Ranka	107	152.00
14.	Honhe	Ranka	109	50.00
15.	Kurumderri	Ranka	119	143.00
16.	Sabane	Ranka	121	205.50
17.	Murli	Ranka	125	15.00
18.	Gobardaha	Ranka	136	110.00
19.	Manjri	Ranka	172	428.00
20.	Path	Ranka	173	112.00
21.	Kurun	Ranka	179	124.00
22.	Garia	Ranka	194	170.50
23.	Saruat	Ranka	207	250.50
24.	Manke	Ranka	146	50.00
			Total	3033.30 acre
				or
				1251.55 Hectare

**WILD LIFE: -**

(435) An area of 38,561.60 acre or 15605.67 hectare of 18 village is a part of the buffer zone of the palamau tiger reserve. The area was notified earlier as sanctuary and later on as National Park. The area is being managed for wild life purpose by the management plan of palamau tiger

reserver (1987-88 to 1996-97) of Sri R.C. Sahai, I.F.S. The following table gives the extent of the buffer zone.

Sl.	Village	Thana	Thana No.	Area in Acre.	Area in hectare
1.	Sangali	Ranka	185	3126.85	1265.42
2.	Madgari	Ranka	186	9273.99	3753.14
3.	Totki	Ranka	184	2559.02	1035.62
4.	Saruti	Ranka	207	1654.64	669.62
5.	Hesatu	Ranka	208	4899.27	1982.70
6.	Kulhi	Ranka	209	169.30	68.51
7.	Karawdih	Ranka	210	2155.39	872.27
8.	Tumera	Ranka	211	2060.89	834.03
9.	Turer	Ranka	212	1476.89	597.67
10.	Sinjo	Ranka	213	129.10	52.25
11.	Polpol	Ranka	214	1031.26	417.35
12.	Chapia	Ranka	215	2560.54	1036.23
13.	Khaira	Ranka	217	1601.75	648.22
14.	Khurra	Ranka	216	884.17	357.82
15.	Kharawndhi	Ranka	220	631.00	255.36
16.	Saneya	Ranka	221	2288.39	926.09
17.	Chemo	Ranka	222	1305.45	528.32
18.	Kudgara	Ranka	223	898.33	161.20
19.	Bhajna	Ranka	218	355.37	143.82
<b>Total :</b>				<b>38,561.60</b>	<b>15,605.67</b>

(436) The area out of the submergence as mentioned in para 423 will be declared as the core area of palamau tiger reserve. The following forests will be declared as national park and contribute to the buffer area surrounding the core to compensate the area submerged of tiger reserve.

Parro Ranka-182

Sl.	Village	Thana	Thana No.	Area in Acre.	Area in hectare
1.	Parro	Ranka	182	1,473.31	596.24

2.	Lidki	Ranka	183	2,082.71	842.86
3.	Rud	Ranka	205	1,055.07	426.98
4.	Tehri	Ranka	206	2,130.94	862.38
<b>Total :</b>				<b>6,742.03</b>	<b>2,728.46</b>

(437) CREATION OF ANCTURY.

An area of 38,961.55 acre or 15,767.52 hectare was recommended by Mr. Roy to be notified as Bishrampur Sanctuary. For un known reason it could not be done. The table below gives the areas carved out by him which is again proposed to be notified as “Kanhar wild Life Sanctuary, Bishrampur” under wild Life (Protection) Act 1972.

KANHAR WILD LIFE SANCTUARY, BISHRAMPUR

GARHWA SOUTH DIVISION.

Sl.	Village	Thana	Thana No.	Area in Acre.	Area in hectare
1.	Baradih	Ranka	13	811.59	328.44
2.	Nagari	Ranka	14	610.89	247.22
3.	Gangodih	Ranka	23	1321.83	534.93
4.	Jun	Ranka	28	813.80	329.34
5.	Pargawal	Ranka	32	308.90	125.01
6.	Nawadih	Ranka	33	277.05	112.12
7.	Belwadar	Ranka	33	1344.65	544.17
8.	Anhar	Ranka	34	778.07	314.88
9.	Bhagodar	Ranka	35	1249.30	505.58
10.	Nawabandh	Ranka	36	86.10	34.84
11.	Bandu	Ranka	37	1505.07	609.09
12.	Chutru	Ranka	38	912.55	369.30
13.	Daldalia	Ranka	39	435.25	378.49
14.	Bardari	Ranka	40	1604.83	649.46
15.	Bhori/Bhauri	Ranka	41	3590.61	1453.09
16.	Barwahi	Ranka	42	1528.28	618.48
17.	Kari	Ranka	43	3258.36	1318.64
18.	Lehada	Ranka	44	920.50	372.52

19.	Damaran	Ranka	45	1309.47	529.93
20.	Katra	Ranka	46	2300.97	931.18
21.	Bishrampur	Ranka	134	4918.44	1990.46
22.	Baligarh	Ranka	135	4310.90	1744.59
23.	Homia	Ranka	140	721.92	292.15
24.	Chutia	Ranka	141	3542.20	1433.50
<b>Total :</b>				<b>38,961.55</b>	<b>15,767.52</b>

(438) Considering the importance of wild Life given in the National Forest Policy 1988, the above mentioned forests must be notified as sanctuary as soon as possible. The core and buffer zone will be demarcated by the Divisional forest officer. An assistant conservator of Forest, 2 Range officer-6 Foresters, and 18 Forest Guard should be sanctioned and posted entirely for protection, management and development of the sanctuary. The Sanctuary will be managed by wild Life Management plan prepared subsequently by the working plans officer, western circle, Daltonganj.