

## CHAPTER - V

### PAST SYSTEM OF MANAGEMENT.

#### PAST HISTORY OF THE FOREST

The Porahat forests, forming part of the Porahat estate were taken over by government in 1858 after the Mutiny. They were subsequently taken over under section 38 of the Indian Forest Act and formed part of the Singhbhum Division in 1881-82. This was the first application of section 38 in what is now the state of Bihar. The ownership of Porahat estate, however, passed on to government after the heirless death of the raja.

The Porahat Reserves, comprising of Songra, Kundrugutu and Bera blocks of forests, were one of the first to be directly managed by the forest department.

From 1895-96 the forests of Singhbhum Division were worked for supplying two lakh broad gauge sleepers to Railway. The number of trees felled in Bera, Songra and Kundrugutu blocks were 6061, 1302 and 538 respectively. The felling first confined to trees of 6 1/2 feet girth and over, extended over trees below this girth also and practically all-mature trees were felled. From 1897-98 to 1901-02 fellings were confined to hollow, crooked or defective trees. The total number of trees and poles felled from 1898-99 to 1901-02 in Bera, Birda, Girga, Kundrugutu and Songra blocks amounted to 1,71,672; 241; 110; 9,972; and 48,586 cubic feet respectively.

#### Hains Working Plan-I 903-04.

The first working plan for these forests was compiled by Mr. Haines in 1903- 04. He divided the forests into Valley Type, Hill Type and Mixed forests. Selection I and improvement fellings were prescribed for a 15-year period till 1918; the felling cycle being of 30 years. Yield was based on area of Valley Type Sal forest, which was stated to be the only part of the crop likely to yield marketable timber. All trees of six feet in girth and over were to be removed. The annual coupe was to contain approximately **1130th** of the valley Type area. The total area of this type was calculated as 3,604 acres, half of which was to be felled in the 15 years period. Actually 1,756 acres were prescribed for felling; of this 172 acres remained unfilled at the end of the period. A further 148 acres were worked in 1918-19 leaving an unexplainable balance of 24 acres only. Subsidiary improvement felling was prescribed under which badly grown, hollow or defective Sal trees, useless miscellaneous trees, were to be removed and removal of congestion in sal poles and of badly damaged trees was prescribed.

The felling rules were generally observed except that sound trees over six feet in girth were sometimes left unfelled. The subsidiary improvement fellings were not carried out thoroughly.

Porahat was constituted a separate division on the 1st of October 1916. In the early part of 1916, Mr. R.S.Troup, Assistant Inspector General of Forests, visited Singhbhum and formulated proposals for the future management of these forests under a system of concentrated regeneration fellings by periods. Mr. Makins' plan, which was the first separate plan for Porahat forests, was based on Mr. Troup's proposals. Mr. Troup's proposals were for the inclusion of the great bulk of the area in Porahat into the High forest working Circle to be worked under concentrated fellings in periods and the allotment as far as possible of whole compartments to the first period to be determined primarily by the quantity of regeneration requiring to be freed. The allotment of areas to other periods was not advocated. In the poorly stocked areas in the hills he advocated the felling of all marketable trees regardless of silvicultural considerations in view of the creative importance of sabai grass. Mr. Troup further advocated an area yield in view of the intermingling of the various type of forest. The regeneration fellings were to be followed by the usual cultural operations, cutting back, burning, soil hoeing etc. In the case of outlying forests Mr. Troup advocated the continuance of the simple coppice system with the reservation of occasional standards of valuable species on a 30-year rotation.

Mr. Haines, who was conservator of Forests at the time, disagreed with Mr. Troup as to the disadvantages of the past selection system and attributed the profusion of regeneration to this system. He also disagreed with the drastic proposal for felling all marketable trees in the poorly stocked hill areas.

**Makin's Working Plan**-Mr. Makin's Working plan which came into force from the 1st July 1919 was a compromise between the two opinions. The total area of Porahat division at the time Mr. Makin's plan was 1,25,267 acres of which only 18,638 acres was to be worked under a system of concentrated regeneration fellings and the balance of the area was to be only partially worked on selectioncum-improvement lines. A coppice — with standards working circle was established in the outlying blocks of Birda and Girga (16,981 acres) on a rotation of 40 years.

Mr. Makins' plan was revised by Mr. Hart in 1930. Mr. Hart plan prescribed the formation of four working circles viz. (1) Conversion to Uniform, (2) ..section, (3) Coppice, and (4) Bamboo over-lapping. The conversion-working , Circle covered an area of 18,321 acres. The conversion rotation was fixed at 96 “ years and the area was divided into four periodic blocks of approximately equal areas, of each compartment in P.B.I being demarcated on the ground. Total enumeration of all Sal trees 12” and over diameter was carried out in P.B.I and the ‘d was based on a unit conversion value. Subsidiary cultural operations were F prescribed. In the intermediate periodic blocks, selective fellings for fixed minimum exploitable diameters on an annual area coupe for a 24 years felling cycle was prescribed. In P.B.I and IV, following their conversion to uniform crops, regular cultural operations and” C “ grade thinning were prescribed.

Through inadequacies of staff and funds or through subsequent amendments introduced, the actual treatments effected particularly in respect of cultural and thinning operations were not fully in the spirit of the prescription.

The Selection Working Circle covered an area of 102, 700 acres. Selectioncum-improvement felling were prescribed over the area with division into five felling series, the felling cycle being of 24 years (12 years for Girga block). Minimum exploitable limit was

prescribed for the main species and dressing back of promising advance growth was to follow selection felling. The provisions of this Working circle were largely worked up to.

The area of the coppice working circle covered 4,246 acres of which 394 acres was excluded as being considered unfit for working. The rotation was fixed at 40 years with approximately equal annual area coupes. Climber cutting from 5' to 7th year of coppicing and "C" grade thinning in coppice of 10 year and 20 years of age. The prescriptions laid down were carried out.

The area of the Bamboo Working Circle was 22,840 acres. Regular prescriptions for working the bamboo forests were laid down.

The demarcated Protected Forests covered an area of 23,947.17 acres in twenty-five blocks. These D.P.F. blocks were constituted in 1906. Till 1931, there was little or no systematic management. Fellings were irregular, excessive and often willful and little could be done to keep up the boundaries properly or to control the fires. In 1930-31, the first plan by Sri J.Ji. Sinha for systematic working was introduced and had been in operation since then with suitable modifications. Blocks were transferred to Koihan Division in 1936. All the 25 blocks had been kept in coppice working circle in 15 felling series with a rotation of 40 years.

The system to be followed was coppice- with- standards with a 40-year \_n. The prescriptions were generally worked up to.

### Derry's Working Plan-

Mr. Hart's plan was revised by Mr. Derry in 1943-44. Mr. Derry's plan only dealt with the Porahat R.F. and D.P.F. and had nine working circles.

- (1) Sal Conversion W.C. of the R.F.
- (2) Sal R.F. — selection W.C.
- (3) Mixed selection W.C.
- (4) Mixed irregular selection W.C.
- (5) Coppice working Circle.
- (6) Main bamboo W.C.
- (7) Turis Bamboo W.C.
- (8) Coppice Working Circle of D;P.Fs.
- (9) Selection working circle of D.P.Fs.

In the Sal Conversion Working circle, the rotation was placed at 120 years divided into six periods of twenty years each. Annual yield from P.B.I. was fixed at j,20th of the were prescribed. Light improvement and selection felling and thinning were prescribed in P.Bs III and IV and thinning' was prescribed in P.Bs V & VI.

The allotment of areas to P.Bs was defective in as much as it presumed that any area in which felling took place was completely worked. This was, however, not so because the felling was carried out on royalty basis and the contractor paid only for what he extracted. The best trees were therefore cut and the inferior ones left behind. This, together with the leaving of standards in some areas, resulted in unsound mature trees standing over suppressed sal saplings. In areas where clear- felling was prescribed and no standards were left, the resultant picture was satisfactory.

In the Sal Selection working circle selection felling of trees of mature size over the whole area on a ten years felling cycle was prescribed. The marking rules were however too complicated and this resulted in marking being too heavy in certain places and too light in others. The felling cycle was also rather short.

The mixed selection and Mixed Irregular selection-working circle comprised of the predominantly mixed associations and perhaps did not need to have been two working circles. It was also not clear whether in the mixed selection Working circle Sal is to be felled or not and this caused confusion. The mixed Irregular working circle of 27,894 acres was excluded from working. This was not the correct thing to do as there were many mature trees in the miscellaneous forests.

The R.P. coppice Working Circle appertained to the *Gircla* block *only*. *There was only one felling series of 3,825 acres and the annual area ranged from 79 to (140 acres. This was found to be too big for economic exploitation.*

Main Bamboo and Turis Bamboo working circle had suitable prescription but ... bamboo forests were not worked on proper lines.

Coppice Working Circle of the D.P.Fs contained D.P.F. blocks IX to XVIII dMision into eight felling series with a 40-year rotation.

The selection Working circle of the D.P.Fs contained D.P.F. Blocks I to VIII. Selection felling of mature trees and light improvement felling on a ten years cycle were prescribed.

### [Anandpur, Kera and Keraikela Forests.](#)

The following is reproduced from Mr. Sinha's plan: - " The only regular Working Plan. That was drawn up and introduced appertained to the 40 blocks of Anandpur protected Forests taken over under Government notification no. 11 89-IIIF- 3R, dated the **11th** February 1935. This plan was drawn up by late Mr. L.R.Sabharwal for the period 1934-35 to 1943-44. Although

the plan has long expired the forests are still being worked more or less in accordance with the prescription of this plan. All the 14 blocks were placed under Coppice-with- standards working Circle to be worked on a 30-years rotation. In all 19 Felling series were formed with the object of providing facilities in exercise of rights. Besides the coppicing in the annual coupes, improvement felling was prescribed in one coupe annually from a coupe no.15 onwards. Cleaning and cultural operation were prescribed subsequently to the main felling in the annual coppice coupes and elaborate procedure was laid down for controlling exercise of rights. The result so far achieved are as follows:- In the annual coupes coppicing has been done more or less satisfactorily except in the outlying blocks where in only selective felling have generally been done by the coupe purchasers. Satisfactory exploitation is not possible first because of the absence of fair- weather extraction roads and secondly

The Koel river which bars the way to railhead at Manoharpur and Posaita is a formidable foe. Cleaning and creeper cutting operation not carried out effectively nor were all the defective stems dressed down in the annual coupes. The prescription regarding improvement felling was also not put into effect perhaps because the produce marked for felling was not saleable.

Regarding the subsequently taken over P. P.F.'s in 13 villages of Anandpur Estate, or in the recently taken over Private Protected Forests situated in 77 villages belonging to Anandpur and other petty landlords, no system of silvicultural felling has so far been introduced even for meeting the rights. There are sufficient 'lefts over portions of forests, which the right-holders find it sufficient for present use.

#### Mr. Sinha's Working Plan.

Under Mr. Sinha's plan, the following working circles had been formed:

1. Sal Conversion Working Circle.
2. Sal Selection Working Circle.
3. Miscellaneous Selection Working Circle.
4. R.F. Coppice Working Circle.
5. Main R.F. Bamboo (Overlapping) Working Circle.
6. Kera Bamboo (overlapping) Working Circle.
7. Porahat D.P.F. Coppice Working Circle.
8. Porahat D.P.F. Selection Working Circle.
9. Coppice-with-standards Working Circle.
10. Semal (overlapping) Working Circle.

There are as many as three Coppice working circle. A Working Circle should all areas in which the same silvicultural system and the same or similar s of prescriptions are applicable. The only difference in the areas allotted to the so these working Circles is in their legal status. This, however, does not justify the ireation of three working circles. It would be better to have only one coppice- circle with different areas formed into separate felling series.

The constitution of the Semal (overlapping) Working Circle is not justified by e results obtained so far. It had been suggested that as demand for semal has n getting keener and if semal trees are cut in the course of felling, the yield rJ be uneconomic. It had therefore been prescribed

that 130 trees of and over 4' diameter and above will be felled every year. It has, however, been found that lately the number of exploitable trees available each year falls far short of this number. The following figures indicate the removal from 1954-55 onwards: -

<u>Year</u>	<u>No. of semal trees marked.</u>
1954- 55	234
1955- 56	148
1956-57	124
1957- 58	130
1958- 59	130
1959- 60	72
1960- 61	Nil
1961-62	Nil
1962- 63	51
1963- 64	Nil

It therefore, appears that the forests are not capable of producing the prescribed yield .The error appears to have been caused by enumerations carried out which were total only in C.W.C. areas and of random sampling at different intensities in the Sal selection working circle and Miscellaneous Selection Working Circle.

This subject came up for discussions on the 30th January,1963 . The Chief Conservator of Forests, Bihar was of the view that this Overlapping Working Circle may be retained and that the exploitable girth may be reduced from 5' to 4'. In the directions received with Chief Conservator of Forests' Memo no. 934 dated 13.2.1963, it was said that semal might be exploited over an annual coupe area of 7,000 acres on 20-year cycle with the exploitable girth reduced to 4'. This was to be given effect immediately and it was directed that the whole position might be reviewed while drawing up the preliminary working plan report.

This prescription was therefore sought to be followed during 1963-64 but in spite of reduction in the exploitable girth limit,' trees were not available in commercial quantities. It is therefore proposed to drop this Over-lapping Working Circle. Cutting of semal trees in other working circles, so long forbidden, will be allowed.

The subject was also discussed with the Deputy Chief Conservator of Forests on the 15th March 1963, the note of which was received with his memo no. 2448 dated 19th April 1963. It had been advised to examine whether semal can be worked economically in the areas outside the semal over-lapping circle if this is treated as reserved species to ensure against deterioration of mature trees.

As stated above, due to non-availability of trees of exploitable size , semal will not be treated as a reserved species and therefore there would not be any danger of mature trees deteriorating.

Another working circle, which seems redundant, is the D.P.F. Selection Working Circle. When there are two selection working circles viz. Sal selection Working Circle and ieous Working Circle, it does not seem necessary to have one more Selection Working Circle. This is dealt with in greater detail later.

### Sal Conversion Working Circle.

The total area under this Working Circle was 25,330 acres spread over four felling series of Bera, Girga, Kundrugutu and Songra. Girga was constituted into a separate felling series for the first time as it was considered that the minor role allotted to it has impeded its development and that its constitution into a Felling Senes by itself will focus greater attention to this hither - to neglected forest. The position in respect of Girga felling series has been discussed in detail below.

The silvicultural system adopted was that of concentrated regeneration by periodic blocks. In areas allotted to P.B.I clear felling was prescribed. In other P.Bs improvement felling and thinning were prescribed. No attempts were made at equalizing the areas of different P.Bs as "allotment to periodic blocks is made primarily to facilitate giving correct silvicultural. Requirements to the crop".

A Conversion period of 120 years was adopted as it was " assumed that a eriod of 120 years will produce average crop of 18.5 inches diameter. In case ' Girga block a Conversion period of 60 years was adopted as it was considered t" there is a smooth sequence of age-gradations from P.B.I. to P.B.III". Whereas regeneration period of 20 years was retained as also the division into six blocks. Bach periodic block was separately allotted " according to age ". This is the only example in Bihar forests of separate allotments to P.Bs III

### P.B.I.

Total enumeration had been carried out in P.B.I. The yield in P.B.I. was by volume in terms of the standard units. All Sal, bija, panjan, and gamhar trees of 12" diameter and over counted towards the yield. Poles between 8" to 12" inches diameter were not counted towards the yield. It had been suggested that at the next revision of the working plan, a suitable reducing factor may be worked out for poles and that the Sal poles may count against the yield, at any rate from Songra block. A reducing factor has in fact been introduced for poles in the division of Saranda, Kolhan and Porahat as directed by Chief Conservator of Forests, Bihar in 1959 according to which a 8"-12" pole is to count as 0.3 unit. This however does not appear to be the correct conversion factor. It needs to be modified.

In prescribing the yield from P.B.I. flxed by volume it was said, "since it is more or less uniform it may be said to be equiproductive and it is expected that an equal volume will on the average account for an approximately equal area though not always so. The result of working during ten years of the plan is analyzed below:

<b>Block.</b>	<b>Area in acres allotted to</b>	<b>Area in acres worked</b>	<b>Balance area Left for working</b>
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	<b>P.B.I.</b>	<b>over in 10years</b>	<b>during next partofloyears.</b>
Bera.	1,139	450	689
Girga.	541	541	Nil
Kundrugutu.	622	356	266
Songra.	1,594	925	669

From the above it would appear that whereas the position is apparently satisfactory in Bera block, it is not good in Kundrugutu and Songra blocks and is alarming in Girga block. The position in Girga block is peculiar and is dealt with separately. Even in Bera block, it is only apparently satisfactory because the crop in Bera 25 and 26, next in line for felling, consist mainly of immature poles and larger areas would be needed to make up the yield. (The felling has due to this reason now been shifted to Bera 28). The position in Kundrugutu block would not be so bad as appears from the figures above because the crop in Kundrugutu 7, now due for I felling, consists of mature trees. In Songra block we may run through the area before the regeneration period is over. This has happened because there is no area control over the yield, which resulted in irregular annual areas. In Saranda plan where the yield has been fixed by volume, an area control has been prescribed ensures that the area allotted is enough to last over the full period.

It has therefore become necessary that after stock mapping is done again and allotment to P.Bs finalized and enumeration carried out in P.B.I. area control of the yield also prescribed.

### Girga Block.

The case of the Girga block deserves attention. It had been stated in the plan under revision that "the entire crop of conversion Working Circle has had to be allotted to three periodic block only, viz. P.B.I. ; P.B.II and P.B.III according to the principle of age groupings adopted for this allotment. To prevent waste from unsoundness it appears to be best to convert the entire crop in a period of 60 years. Since there is a smooth sequence of age- gradations P.B.I. to P.B.III there will be no hiatus in the yield production nor is the volume yield likely to alter violently within the next 60 years." Unfortunately both these apprehensions have come to pass in ten years. This has been the most inaccurate assessment based again on incorrect stock — mapping. Only a fresh stock mapping will indicate whether the arguments in favour of having only three P.Bs from P.8.1. to P.B.III are correct.

Originally the area allotted to P.B.I. was 1081 acres consisting of the C.W.C. area of Girga 1,2,3, and 6. This was subsequently reduced to 541 acres in 1960-61 and the yield was halved from 820 units to 410 units. But by this time an area of 450 acres had been gone over and remaining area was enough to last till 1962-63 only taking the reduced yield of 410 units. The area allotted to P.B.I. was reduced to save immature crop from sacrifice. As it is, the allotment of parts of Girga 2 to P.B.I. had been most unsatisfactory. The crop consisted of immature poles. The converted crop consists of coppice shoots only.

This was discussed during the discussions at Jate on the 30th January 1963 and the chief Conservator of Forests; Bihar had directed that " P.B.J. fellings should not be completely stopped in this block. About 800 acres, according to present prescriptions, should be in P.B.I. 541 acres have already been felled leaving nearly 260 acres to be felled in course of next ten years. The annual area should, therefore, be **25** acres. It was decided that **25** acres of forests should be brought under P.B.I. felling each year (only area control) till the revision of the current plan. The divisional forest Officer was advised to select suitable areas preferably in one compartment for being worked as P.B.I for the next two of three years". Accordingly an area of 75 acres was selected in Girga 2 (P.B.II) by the then Divisional Forest Officer, Porahat Division. The crop in this 'was enumerated. The total standing volume (of trees 3' and above in girth) came to 1223 units. Thus one-third of this was 25 acres in area and contained nearly 410 units, which coincide with the annual yield prescribed. Coupe has been laid out in 1963-64 with the condition that the annual coupe will be of 25 acres or will contain 410 units whichever is attained earlier. The chief conservator of Forests approved this; Bihar in his letter no. 3521 dated **6th** June 1963.

The Chief Conservator of Forests, Bihar had also directed that while writing the preliminary working plan report, Sri R.N.Kapoor should take into consideration the following possible alternative for the Girga block.

(i) Retention of the Girga block as a separate felling series of the conversion working Circle and allotment of areas to the entire periodic block. P.Bs II & I might be specifically allotted and P.Bs III to VI might be lumped together as P.B. unallotted.

(ii) Abolition of the Girga block as a separate felling series for the conversion- working circle. The block then could be merged with any of the adjoining blocks to constitute one felling series.

(iii) Working the Girga block under long rotation coppice- with- improvement felling in later coupes (from the other side)."

This was examined and discussed with the Deputy Chief Conservator of Forests, Bihar on **15th** March 1963 who wrote that" since then the matter has been discussed with the Chief Conservator of Forests, and he now agrees that in view to the fact that 90% of our forests are already under the coppice system, it is not desirable to convert any of the high forest into coppice forest. The divisional Forest Officer will therefore examine whether the area should be worked by itself having a separate felling series under the C.W.C. or it should be grouped with the adjoining felling series. A separate felling series should have a complete age gradation in the area so that there is no under sacrifice. The Divisional Forest Officer says that this is not possible in Girga. Hence the best alternative appears to be lump it with another fellings. The Divisional Forest Officer says that it will be better to lump it with the adjoining Bera Felling Series with which I agree.

The C.W.C. area of Girga block will there fore, be combined with the Bera felling series.

**P.B.II.**

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The C.W.C. area of Girga block will therefore, be combined with the Bera felling series.

### P.B.II.

The allotment of area to P.B.II. Leaves much to be desired. Many of the compartments e.g. Bera 24, Kundrugutu 9 are examples. The prescriptions for this periodic block are crown thinning. Since the crop allotted to P.B.II is considered fit enough to pass to P.B.I. after 20 years, though not always, it is open to question if any yield were taken out of it without counting it towards the final yield. The theory that thinning in P.B.II. Allows the remaining crop to put on diameter increment is also questionable. Hence it follows that, the prescriptions for P.B.II in the Saranda plan as modified by the Marking Rules are sound and should be applicable in Porahat also. The Deputy Chief Conservator of Forests agreed to this during the discussions on 15th March, 1963.

### **P.B.III.IV.V.& VI.**

The prescriptions in respect of these P.Bs are satisfactory excepting that a special scheme for removal of over wood in P.B.V. and P.B.VI appears to be necessary. The present prescriptions are “ to remove the cover wood and bigger trees” This has lead to the removal of all trees above 24” diameter but in many cases bigger sized trees less than 24” diameter have been left standing due to doubts in the marking officer’s mind. A better prescription would be to lay down a lower diameter limit in keeping with the average crop diameter.

The cultural operations prescribed have been carried out and have brought satisfactory result.

### **The Sal Selection Working Circle.**

Each of the four blocks (except Birda) formed a felling series. The area was stock mapped and sample enumerations were carried put varying from 2 Y2 percent in Songra to 10% in Girga.

The silvicultural system, prescribed was ‘Selection fellings and thinnings’. Percentage removal of exploitable trees on a 20-year felling cycle (10 years for Girge F.S.) was prescribed. The final control of yield was the annual area distributed for working in each year.

Subsidiary cultural operations were prescribed but due to paucity of funds these could not be carried out except in one or two years.

The prescriptions for this working Circle are satisfactory accepting that the number of trees available in Girga block is small scattered over a large area and the result has been that coupes are not sold. Two alternatives suggest themselves. One is to merge the area of sal Selection Working Circle of Girga F.S. with that of Bera

F.S. or to merge all areas under various Selection Working Circles in Girga Block in one felling series.

### **The Miscellaneous Selection Working Circle**

This working circle comprises the residual areas of the four R.F. blocks after the carving out three from of C.W.C. and sal S.W.C. Four Felling Series corresponding to the blocks viz. Bera , Girga , Kundrugutu and Songra were formed. The area was stock-mapped and sample enumerations varying from I % to 1.6% were carried out . The silvicultural system was “Simple Selection fellings without thinnings”. The felling cycle adopted was 20 years for Bera, Kundrugutu and Songra F.S. and 10 years for Girga F.S. yield was regulated by area.

Subsidiary cultural operations were prescribed.

The results of working have been satisfactory. The prescriptions were carried out except that subsidiary cultural operations could not be carried out except in one year. This was due to paucity of funds.

### **R.F. Coppice Working Circle.**

The R.F. coppice Working circle comprises only of the Birda Block. Two felling series were constituted with a rotation of 40 years. A special condition was laid down that only local sale should be done by the purchasers so that the people of adjoining villages who indulge in thefts from these forests take to legal trade in forest produce. This has, however, not been so as the local people are not prepared to buy coupes from contractors and then sell. Cultural operations were prescribed which were carried out.

### **The Main R.F. Bamboo ( over-lapping working circle)**

Comprised all the bamboo bearing areas in the five R.F. blocks. The prescriptions had to be made to agree with the 11-year bamboo lease then in force. Two cutting cycles of 4 years and 3 years had to be prescribed in keeping with the cutting cycles prescribed in the lease.

The lessee did not work the forests satisfactorily. Neither did he work all the area, nor did he work any of the areas 'thoroughly. The extraction was only a fraction of the yield potential that the forests are capable of producing. The result has been that many of the bamboo areas remained unworked and unattended to.

**The Porahat D. P. F. Coppice w. c.-** comprised of D. P. F. block nos. IX to XVIII. The system prescribed was coppice- with- standards. There were eight felling series. The rotation was fixed at 40 years. Work in all the felling series has gone well except in Tebo and Ban F. S. in which no coupes were laid out as the crop were much too immature. In the felling series, which were, worked coupes were first open to right- holders and the surplus sold the following year.

Subsidiary cultural operations were prescribed which were only partially carried out.

**The Porahat D. P. F. Selection w. C.** - comprised of D. P. F. blocks I to VIII. The system prescribed was Selection. There were four felling series and the felling cycle was fixed at 10 years. Percentage removal of exploitable size trees was prescribed. The yield was regulated by area. No coupes in Jalasar F. S. could be sold. In sauriuli and Korankel F. S. also coupes could not be sold every year. The reasons were the inaccessibility of the area coupled with smaller number of trees. Subsidiary cultural operations were prescribed which were only partially carried out.

**Coppice-with standards W.C.-** Comprised the Dimbuli R.R., Kera R.F., Keraikela P.Fs. and the Protected Forests of Manoharpur and Anandpur F.S. the Dimbuli forests have since been transferred to Kolhan division Kera R.F. And Keraikela P.Fs. has recently been transferred to Chaibasa North division. 61 Felling Series were constituted. The silvicultural system prescribed

was Coppice-with- Standards. Rotation of 30 years was fixed except for one F.S. ( Bhanandia North for which it was fixed at 60 years.

The annual coupes were first to be opened to the right-holders and any surplus to be sold the following years.

The result of Working was on the whole satisfactory. In some felling series no coupes were worked because the crop is of very little value.

Subsidiary cultural operations were prescribed which were not carried out.

The Semal (over-lapping) W.C. - has been discussed earlier in paragraph nos. 127-132. As stated there the working Circle did not yield the prescribed number of trees regularly every year.

**Developmental Works during the aforesaid plan period.**

It is worth mentioning of the large scale constructions works carried during the aforesaid plan period for the sake of record.

The following is the list of buildings and wells constructed during the currency of the preceding plan. Which is reproduced for the sake of record.

<i>Year</i>	<i>Buildings and Wells</i>
<i>1</i>	<i>2</i>
<b>1955-56.</b>	<b>Construction of Forester's quarters at Jarakel.</b>
<b>1956-57.</b>	Construction of (a) Range Inspection hut at Buru Goikera. (b) Range Inspection hut at Jamtai. © Forest Rest House at Anandpur. (d) Out-house for F.R.H. at Anandpur. (e) Forest Guard's quarters at Guiruan. (f) Forest Guard's quarters at Unduds. (g) Forest Guard's quarters at Tiringdiri. (h) Forest Guard's quarters at Pradhanpali. (i) Forest Guard's quarters at Chorarappa. (j) Forest Guard's quarters at Anandpur (k) sinking of well in F•R.H. at anandpur.

<b>1957-58</b>	<p>Construction of</p> <p>(a) Range Officer's quarter at Kera.  (b) Range Inspection hut at Toklo.  (c) Forest guard quarter at Khandar.  (d) Forest guard quarter at Mukundpur.  (e) Forest guard quarter at Dolki.  (f) Forest guard quarter at Rangamati.  (g) Forest guard quarter at Taraisol  (h) Forest guard quarter at Toklo.  (i) Forest guard quarter at Gijidih.  (j) Anandpur F.R.H.  (k) Sinking of well in Forest Rest House at Anandpur</p>
<b>1958-59</b>	<p>Construction of (a) Forest Rest House at Kontai.  (b) Forest guard quarter at Kera.</p>

#### 1959-60. Construction of

- (a) Forest Rest House at Pandua.
- (b) Forest guard's quarter at Robkera.
- (c) Forest guard's quarter at Nakti.
- (d) Forest Rest house at Kontai.
- (e) well at serengda, Kontai — Jarakel. Nischintpur.

#### 1961-62 Construction of

- (a) Forest guard's quarter at Baranga.
- (b) Forest guard's quarter at Morung.
- (c) Forest Rest house at Sonua.
- (d) Forest Rest house at Jonko.
- (e) Range Officer's quarter at Anandpur.
- (f) R.O.F.'S quarter at Chakradharpur.
- (g) Range Officer's quarter at Goilkeria.
- (h) Range Officer's quarter at Sonua.
- (i) Range Officer's quarter at Kera.
- (j) well at Orenge Pandua, Anandpur, Kamrora..

#### 1962-63. Construction of

- (a) R.I. hut at Guiruan.
- (b) Forest Guard's quarters at Keraikela.
- (c) Forest Guard's quarters at Lonjo.

- (d) Forest Guard's quarters at Morung.
- (e) Forest Guard's quarters at Baranga.
- (f) Beat Officers quarters at Jomtai.
- (g) well at Kamrora Jate
- (h) Naka Hut at Sonua Nakti

### 1964-65 Construction of

- (a) R.I.Hut at Siankel with improved latrine.
- (b) well at Siankel, Chirkubera

### Roads

Many new roads have been built and a few of the existing roads improved as a result of which extraction has been facilitated to a great extent. Many new culverts and causeways have been built and existing ones renovated. More link roads should be constructed with a bridge over Karo river to minimize the extraction difficulty in Girga Block. More causeways and culverts are also needed, list of the is given in Appendix-iv

R.N. Kapoor's plan -1964-65 to 1983-84:-Salient features are ,dicussed in graphic details for the sake of history owing to unique silvicultural characteristic features of Porhat Forest.

In this plan the main objects are as follows:-

1. Maintenance, Protection and improvement of the forest cover especially on the higher and steeper slopes to prevent soil erosion and to conserve soil moisture regime.
2. Meeting the bonafide requirements of the right holders for timber, fuel, bamboo, fodder etc. and to meet the local demands.
- 3 Upgrading of forest stand by suitable silvicultural treatment and to attain the normal forest, as early as possible.
- 4 Consistent with the above, to obtain the maximum sustained yield of timber, fuel, bamboo and other forest produce and by economic exploitation and marketing to realise the maximum possible sustained annual revenue.

In order to achieve the above goals, it would be also the aim of the plan to foster the existing crops and to improve them as far as possible by silvicultural means with view to increase their productivity and of achieving a state of normal forest as for as practicable.

To obtain these objects, the following six working Circle has been constituted:

1. Sal Conversion working Circle.

2. Sal Selection working Circle.
3. Miscellaneous Selection working Circle.
4. Coppice with Standard working Circle.
5. Bamboo (overlapping) working Circle.
6. Plantation Working Circle.

**Sal Conversion Working Circle** - This includes all the better quality sal forests, situated in the valley bottoms and gentler slopes where concentrated regeneration fellings are justified. The ultimate aim is to convert the present irregular forest to a regular even aged crops with a view to bring about best possible conditions for producing well grown trees of maximum economic value. Fundamentally the system adopted here is same as that in the preceding plan.

The total area under this working Circle is 9861.50 Hac. (24, 368 Acres) in the four blocks vis.- Bera, Girga, Kundrugutu and Songra, consisting mainly of the type Moist peninsular Valley Sal and parts of the Moist Mixed Deciduous Forests.

**Special objects of management** - These are as follows: -

To convert gradually the present uneven-aged forest into more or less regular stand and to increase the proportion of the more valuable species either by natural or artificial means.

To obtain the maximum sustained yield of timber of the exploitable size. It means the production of timber of 20"-24" as the final crop in QI & QII crop and of lesser diameter in QIII & QIV crops.

**Blocks and Compartments** are the same as those in preceding plan except some changes resulting from re-stock mapping.

**Felling Series** are three in numbers viz.

1. Bera F.S. comprising Bera and Girga block.
2. Kundrugutu F.S. comprising Kundrugutu block.
3. Songra F.S. comprising Songra block.

**Silvicultural System** - The method of concentrated regeneration felling by periodic blocks is adopted.

Also the main felling is clear in nature, hence the system may be called as conversion to uniform systems. Since the advance growth of natural regeneration is most easily attainable and

in consistent with presence of copious advance growth the main fellings will be of the nature of clear fellings. System of management is of conversion to uniform system. Here the crops is not undergoing sufficient regeneration, improvement fellings combined with the meanings would be arrived it to ensure production of best quality timber to the maximum extent.

### **Rotation and conversion period-**

A rotation of 120 years is prescribed. This will produce in the site quantity I II areas a crop of average diameter of 16", which is in maximum demand at present.

### **DIVISION INTO PERIODS:-**

There will be 6 periodic blocks (P.B.) allowing a time of 20 years for complete conversion of the P.B. I, the regeneration block.

P.B. I- Area with most matured crop with adequate regeneration have been allotted to this P.B.I. The total area comes to nearly 1/6 of the total unconverted areas.  
P.B. II- Crops approaching maturity in which established regeneration is usually present but this is not obligatory.

P.B. III- Approx. age group of 60-80 years corresponding to 9.6" to 12" dia class. P.B. IV- Approx. age group of 40-60 years corresponding to 6.9" to 9.1" class.  
P.B. V- Comprising of the crop of poles covered during the old plans.  
P.B. VI- Comprising of the sapling crop being the result of conversion of P.B. of Derrys and Sinha's plan.

The total annual yield for the division is fixed at 2,965 units. (Mean value per acre)

**Regulation of Yield:-** It is desirable to impose an area check system. Therefore it is prescribed that approx. equal area in P.B. I of each Felling series should be exploited annually.

### **Method of excluding the felling: -**

Clear felling would be carried out wherever possible subject to the condition that the whole over-wood be removed in one single operation. All unhealthy and suppressed poles and saplings will be simultaneously cut back. Selected group of thrifty poles and advance growth will be retained to form a part of the future crop. Yield per year is decided by the regulation of yield principle. Whereas yield has been fixed by volume and area check has also been imposed. Hence approximately equal areas in P.B. I in each felling series have been prescribed for exploitation annually. In case of shortage of yield in any annual coupe, then whatever is available therein should be accepted as the annual yield without crossing over into next crops.

**Marking Rules** - Main points are as follows:

1. Mark all down to 8" dia for felling.

2. 3 to 5 trees per acre of Sal, Bija, Sisoo, Bandhan may be retained as standard. These must be well grown and of dia mater class 12"-16" best available in area and evenly spaced as far as possible.

3. Fruit bearing mango trees should not be cut.

4. Climber cutting should be done at the time of marking.

5. In frosty location like Songra 21, 22 trees have to be retained to protect and induce regeneration. 20-30 trees per acre shall be retained, which will serve as fruit-umbrella for younger crop.

6. Kadam, Toon, Kaju, Mango, Champa should be retained as Reserved Species

7. In the year following the main felling subsidiary silvicultural operation such as cutting back of left out marked trees, damaged trees intended for retention, cuttings back of non vigorous sapling, thinning of saplings if necessary, climber and shrub cutting are prescribed.

Thinning - Preliminary in the fifth year, which is mechanical thinning of average spacing of 1.5m x 1.5m, trench year mechanical thinning for spacing of 2x2m or 3x3m. In P.B.II hygienic tending is prescribed. "C" grade thinning in P.B.-III of 20 years cycle. "E" grade thinning of 20-year cycle for P.B-IV. AIO year mechanical thinning to space out saplings and young crop early in P.B-V&VI is prescribed. Subsidiary silvicultural operations have been prescribed. The method of preliminary thinning and main thinnings are also prescribed. The tabular sequence of thinning had been provided in this plan.

**Fire protection** - All the forests of this Working Circle will be rigidly protected from fire hazard. Special care being taken of the young crop of regeneration area. All these along with crop age of 20 years will be fire traced with a 10' wide strip, which would be burnt in the first week of March every year.

**Grazing:** - DFO has been empowered to allow the grazing within the jurisdiction when he feels suitable.

**(2) Sal Selection working Circle:** - This Working Circle comprises the poorer quality Sal forests in which the proportion of Sal is not less than 1/3<sup>rd</sup> of the total crop. The object of management is to exploit the forest under the selection system. It would be endeavored to improve the composition and density of the crop. The system is selection, the yield being fixed by area with a numerical check on the number of selected trees to be removed as a percentage of total harvestable trees. This numerical is determined by smithy's safeguarding formula.

**The area allotted to this working Circle** is 29,926 ha. (or 71, 726 Ac.) in the four blocks, vis-Bera, Girga, Kundrugutu and Songra and none of D.P.F. blocks in Bera, Kundrugutu and Songra ranges.

### Special object of Managements:-

These forests have, so far, received scary attention of silvicultural programmers, which resulted in the trees of poor growth and stunted trees. To improve the stock and quality the special objects of management are follows: 1. To maintain the hill slopes under adequate forests cover to prevent soil-erosion and to ensure moisture- conservation.

2. To improve the stocking and composition of the existing crop by silvicultural treatment.

To induces and obtain natural regeneration of sal and other economically valuable species and establish and tend it to form the future crop. Where natural regeneration is difficult to obtain, resort to artificial means have to be taken.

To preserve and tend under the best conditions of growth, all trees under the exploitable diameter to replace those, which are removed.

To exploit trees of exploitable diameter, subject to a numerical check, as far as permissible by consideration of proper silviculture management and thus to obtain a sustained annual yield.

Consistent with the above to obtain the maximum financial return.

Silvicultural System - Selection-cum-improvement felling system had been prescribed.

This will consist of removal of a certain proportion of the exploitable trees and at the same time tending the younger crop and ameliorating the soil conditions to induce recruitment of sal and other species of economic importance.  
Exploitable Diameter:

(a) For Sal - 16”.

(b) For Bija, gamhar, Sisco, Asan, Jamun Sidha etc. - 48”.

(c) For Dhaura and Panjan - 16”

Rotation - Calculation is only of theoretical interest as average diameter - 16” would be attained in 160 to 170 years.

Felling Series: - Three Felling series viz. Bera, Kundrugutu and Songra.

Felling Cycle: - Felling cycle is fixed at 20 Years. Method of executing fellings: - Mark only two out of five silviculturally available trees of economic importance.

2. Mature and over mature trees are marked first over growing young trees **even** if they are above 16”.

3. Trees standing over young growth are to be marked first.

4. Climber Cutting: -

**Regulation of Yield** is prescribed by area and selection felling would be controlled by *smithies safeguarding* formula, subject to silvicultural availability with the sequence of felling to be followed for 20 years in different Felling Series. Subsidiary silvicultural operations are prescribed which includes removal of badly damaged trees after felling and badly grown saplings are to be cut back and climber and creeper cutting and removal. Thinning operation is also prescribed. Soil and moisture conservation measures prescribed are as follows.

1. Contour trenches are prescribed to arrest surface run off and soil- moisture retention and soil erosion, Gully plugging and construction of vegetative check-dams and diversion channels.

### **(3) Miscellaneous Selection working Circle.**

This working circle comprises the moist mixed and the dry type mixed forests of the Reserved Forest and moist mixed forest of D.P.F blocks. The object of management would be to ensure a supply of timber of the species for which demand has arisen.

Restocking of the blanks by direct sowing of sal and bija on the tridges of contour trenches and weeding during to rains in the first year.

The total area allotted to this working circle is 11,299.62 Hq. (or 27,922 Ac.) that is the remaining areas of the four R.F. blocks viz. Bera Girga, Kundrugutu and Songra, after allotment to the conversion and sal selection working circles. The more common species are dhaura, Asan, Karam, Sidha, Kend, Piar, karla, Mahua, Galgal and Teley etc. with a few scattered sal trees.

### **Special objects of management**

The open nature of the crop together with repeated fire has resulted in ral degradation of the site. These forests have therefore to be so managed as prevent any further deterioration in the sites. Accordingly the special object of magements are as follows

1. To maintain the hill slopes under adequate vegetation cover to prevent soil erosion and to conserve soil moisture.

2. To improve the composition and stocking of the existing crop.

3. To exploit all the trees of the miscellaneous species, subject to a numerical check, that are silviculturally permitted and thus to ensure a sustained yield.

**Felling Series:** - Three felling series are in Bera, Kundrugutu and Songra ranges. Bera will comprise of the Bera and Cirga R.F. Rest two will comprise their own area of respective ranges.

The total area allotted to this working circle is distributed over R.F. only.

**Silvicultural system** adopted would be selection cum - improvement fellings and harvestable diameters are fixed for various species and the yield is fixed as a proportion of the selection trees.

**Felling Cycle** - It will be of 20 years with sequence of fellings.

**Exp (oitable diameter** - For different species it varies from 16" to 24".

**Regulation of yield is** fixed by 'area. Marking will be done of 50 % of the exploitable trees that are silviculturally available. Accordingly, coupes of approximately. Equal area would be made whit 50% of trees are so selected that natural and over matured trees are preferred over young and growing and serving trees and dead, dying and hollow and heavily diseased trees are to marked first for removal and provision for climber cutting is also made.

Subsidiary silvicultural operations including cutting back 'of damaged stems and malformed and stunted saplings and poles and climber cutting. The steps have been prescribed also to achieve soil a and moisture conservation.

### **The Coppice with Standard Working Circle.**

This working Circle compries of the Birda Block, the accassible and workable D.P.F.s and Anandpur D.P.Fs and Protected' forests. The total area of this working circle is 14, 528.02 Hq. (i.c. 35, 875 Ac.) the four ranges viz. Bera, Kundrugutu,

Songra and Anandpur, which comprises of the forests varing from good quality coppice forests to poor coppice forests.

Main species is sal, the other principal species are Asan, Dhaura, Sidha, Karam, Gamhar, Kend, Piar etc.

Special object of management: - These are -

- 1- To meet the bonafide requirement of the right holders through correct exploitation method without causing deterioration of the crop.
- 2- To supply poles, timber pit props and fire wood from the right free forests and from the surplus., left over after meeting the right holders at reasonable rates and to market the rest to the best advantage.
- 3- To improve the quality and stocking of the crop by suitable silvicultural system. Block & compartments have been retained in their original form.

**Silvivultural System** - The system adopted is simple-Coppice with standards. The need of right holders is to be met with the coppice coupes.

**Rotation:** - For the better quality forests e.g. the Birda R.F., the Hesadih D.P.F., the coppice rotation will be 60 years, while for the rest rotation of 40 years and 30 years will be adopted.

**Felling Series** - These are more or less, constituted as were done in the previous plan.

**Yield:** - This has been fixed by area; the annual coupes in the different Felling Series are of equal area. Annual coupes are demarcated accordingly with the Standard marking.

**Subsidiary Silvicultural Operation** - Under this the crop in the Birda R.F. and some of the D.P.F.s and Protected forests is good and would need cleaning and thinning. But, in the case of the Anandpur P.F., the crop is most by open and the area is dry, there the operation prescribed would therefore be carried out in the Birda R.F. and in selected Felling Series.

Fire protection and grazing control measures are prescribed to save the existing crop as well as encourage the regeneration of the new crop within the forest boundary.

### **Bamboo (overlapping) Working Circle.**

This comprise of all the Bamboo bearing areas of the five Reserved Forest blocks of the division.

The total area allotted in this plan is 14, 137.90 ha. [34, 939 acres] the species Is Dendrocalanus Strictus. The growth is very good. In Girga block it is exceptionally good. Exploitation has been confined to the more accessible area. Hardly 10% of the total forest used to be worked out. The outturn, hardly, reached the 1000 tones against the target of 10,000 tones, annually.

The occurrence of bamboo is very good in Girga as well as in Kundrugutu blocks. It is also good in Bera block but in Songra block it is comparatively poorer in this respect.

**Special objects of management-** are as follows

1. To work scientifically, the entire bamboo forest and thus bring about improvement in the quality.
2. To meet requirement of the local people and the 'Turis' without damaging the (Bamboo craftsmen) bamboo forests.
3. Consistent with the above to obtain the maximum yield. Cutting cycle, same as that of previous plan would be kept at 4 years. Ten Culling Series are made.

Cutting rules are prescribed as per the guidelines of Chief Conservator of Forests; Bihar- Letter No.-821 0 dated the 27th Nov 1962 for the whole State. Provisions for subsidiary cultural operation are also made.

**Bamboo Lease:** - Out of the 10 cutting series of bamboo in this division, eight have been given on a 12 years lease from 15th Oct 1963 to 30th June 1975. Minimum Royalty: - The estimated annual yield for the cutting series lease to MIs India Paper Pulp Company has been placed at 2,500 tones and from the cutting series lease to Mis Bengal Mills of 7,500 tones. Minimum royalty has been @ 75% of the estimated yield. Royalty is charged @ Rs. 30/- per tones. The provisions to supply the bamboo to turis and villagers are also made.

### **The Plantation Working Circle.**

The working Circle comprises of all area where Plantations have been raised in the part and of such areas as are considered fit for raising plantation in the future. Tending operation has been prescribed for the raised plantations. For the other areas the system would be clear felling and planting with teak or semal.

Special object of management are -

1. To maintain and develop the existing plantations on correct silvicultural Principles to get the maximum financial return.
2. To restock that patches of inferior miscellaneous forests which are suitable for raising plantations with species of economic importance.

**Silvicultural System:** - The system will be clear felling with artificial regeneration. The older and the younger teak plantation areas are covered within this working circle. The rotation is tentatively fixed at 80 years.

Aproximately 600 acres of semal plantation have been raised during the second and third five-year plan. These have been raised to augment the supply of, softwoods to the match industry. "The technique adopted is stump (planting) at jsacin of 10' x 10' under planting of rosewood is recommended in small plantation site.

### **REVIEW OF KAPOOR'S PLAN**

The concerned Division followed the prescriptions of Kapoor's plan to a larger extent. The condition of the crop was satisfactory and the forests were managed as per the prescription of existing working plan. As such, the prescriptions were compatible with the then prevailing conditions of the forest. However, the end result : of this working plan could not be assessed because at the time, when working plan period expired, a violent agitation, termed as Jharkhand Agitation started in \$inghbhum district engulfing the Porahat Forest Division as a whole. In the prevailing atmosphere of to extremely violent conditions, regular fieldwork such as :t0 mapping and enumeration etc. could not be carried out in the field, which resulted into information gap about the effects of the Kapoor's plan. Consequently ;revision of the working plan could not take place in time. Hence the results could not be assessed or reviewed.

Working Plan and Research Circle, Ranchi was entrusted with the job of [studying the effect of illicit felling in the working plan vide C.C.F. (Dev.) Ranchi, vBihar Letter No: - 9205 dated- 10.12.81, He was also requested to make recommendations as how the future felling should be regulated, so as not to result into over-felling, and to adjust the illicit felled areas against permissible felling under the working plan.

C.F., Working Plan and Research Circle, Ranchi submitted the report in this regard. A copy of which is annexed. On the basis of which, C.C.F. (Dev) Bihar in his Memo no. 6261 dated- 9.1.82 issued some direction in regards to future felling. These are as follows: -

- (I) No felling in Conversion Working Circle would be done in 1985-86.
- (ii) Regular felling as per Working Plan would commence from 1982-83 only in selection working Circle starting from un-worked coupes as per working Plan.
- (iii) In case of Coppice working circle, the sequence of felling, as prescribed would be followed. Area felled by the Agitationists if any, would form part of the coupe. Felling in coppice coupe would commence from 1982-83, starting from unworked coupes if any as per working plan.
- (iv) In areas managed by Forest Development Corporation, the additional clause is added which is that the area under Selection would be reassessed after deducting the area planted by the Forest Development Corporation, yield assessed and sequence of felling fixed. Till this exercise is done, no felling would take place in Selection Working Circle as well.

Again C.F., Working plan and Research Circle, Ranchi prayed to C.C.F. (Dev) Ranchi for the extension of Porahat Working Plan vide his Memo No. 597 dated- 26.11.88. At present Porahat's working plan has been given extension up to 30.6.1998. vide Govt. of India's Letter No. I 3-FSWPI BH — Porahat dated- 1.1.97 with a restriction on green felling in any working circle area. During this period of extension from 1984 to 1998, the forests of Porahat division were extensively damaged by the Jharkhand Agitation, thereby completely defeating the purpose of working plan.

But in later days, more forest areas were felled and encroached by the Jharkhand Agitationists. Thus the working and management of the Porahat Forest Division was no more carried out according to Kapoor's Plan prescriptions during extension period i.e. 1984 to 1998. No regular operations, which were prescribed in the Kapoor's working plan, were carried out. During the period of 1984 to 1998 and till date, only Salvage operation was carried out, in the area where Jharkhand Agitationists had felled the trees and left there of has girdled the standing trees the forest areas.

**Present status of the Forest: -** The forest of Porahat division has been plundered of its **glory** during past decades. It has been the result of Jharkhand Agitation to a large extent and continuous theft and smuggling in general. Around 26,434 Hac. of forest area were destroyed by the Agitationists during the year 1977 to 1995

This Jharkhand Agitation affected the whole division. Due to Jharkhand reeling, which is a clear felling in nature followed by burning of the crop and agitation over the area had or leaving as such without encroachment subsequently subjected to resulted into a permanent loss of the forest.

Besides the division is affected to a large extent by theft of important timber varieties like Bija, Gamhar, Sal Asan, Karam, etc. which come to the nearby markets of Chakardharpur and Chaibasa of this district as well as Gullu, Jamda Khunti, Murhu and Tamar markets of adjoining Ranchi district.

The theft is mostly selective in nature has resulted into loss of some very important spp. altogether from the forests especially Teak, Bija, Rosewood and Gamhar are no more visible in the forests. In general this has resulted into the reduction in the crop density. Subject of encroachment and smugglings are dealt with in detail in foregoing. Regarding theft, forests bordering Ranchi district it is rampant. The blocks affected are the northern parts of Birda, Kundrugutu and Girga blocks and northeastern portion of Songra block. The thefts of timber in these parts have reached a state of anxiety.

Timber is cut and stolen on a large scale, by night some times by day itself, and sold in the *hats* of Ranchi district where there is paucity of timber. It is a tragic drama of cut and run, which has been abetted by lack of appreciation so far of the gravity of the situation. The strength of the staff is meager and there has been no additional staff posted to meet the special situation of this large-scale theft. Parts of Birda block have been depleted of big sized trees and poles by the systematic theft. Haphazard cuttings have also ruined bamboo clumps. The worst part of this illicit cutting is the manner of it. Mostly trees and poles are cut at loin height and the resultant stumps are rendered unfit to replace the cut tree by fresh coppice shoots since only pollard shoots can grow from the top of these stumps. In Anandpur forests presently there is no theft of any serious consequence except in the more accessible parts bordering Manoharpur. Most of the parts of Anandpur forest are difficult to access or the local population. Moreover there is sufficient area of forest in their own villages.

The theft via Bandgoan and along Ranchi boarder has, however, reached alarming proportions and needs special efforts to check them. The strength of the staff in this area is not adequate. *The unfortunate aspect is the lukewarm support* from the local police. The traders in illicit timber are very well organized. They have depleted the adjoining forests of all big sized trees. Worse is that the defective way of cutting has affected subsequent crop adversely resulting in pollards

To control the illegal cutting of Porahat forests, the following measures have been carried out by the Territorial division: -

Although the present situation is very much alarming. The forests are being denuded very much by the Forest Mafiosi (illegal traders of forest produce). The local timber merchants of Chakardharpur, Chaibasa as well as Jamshedpur, Khuti and even far-flung Ranchi are encouraging the poor villagers to indulge into illegal cutting and transporting the forest products. The abject poverty and unemployment cause the local laborers to indulge in this trade.

Moreover the exit point or market destinations for these timber is at khuti,Gullu—Jamda, Rangoan, Murmu, which are in different districts and hence fall in other territorial circles. Lack of concerted and coordinated mechanism between the source divisions or circle and destination divisions / circle is leading to confusion and vitiating the whole problem.

Concerted efforts by both the circles i.e., Southern circle (Singhbhum) and Ranchi circle, in the form of joint raids, joint criminal actions, and unified criminal prosecution shall be evolved to tackle this problem.

There is a silver lining. Local people have started protecting their forest. At present there are eight VFMP and sixteen Village Eco-Development Committee have started working in this division, though not in a big way. It will not be possible to protect the forest of Porahat until and unless the Forest Department does something for the people residing inside the remote forests. Further eco-development projects have to be prepared for the villages and the R.F., so that both can be developed. Besides in P.F. areas, village forest protection committee can be constituted and their active help and co-operation can be taken after preparation of micro plans, which should match the working Plan prescription for rights and concession.

Vast areas of forests have been encroached. There is an urgent need to remove the encroachments from the hill top, and steep slopes but this is a very sensitive matter because tribals in general, who are residing in the forest as Jharkhandies have established villages of their own and almost in all the cases, the tribals from Gumla, Ranchi, Khuti, Thamad, Chaibasa of this state and Sundergarh, Keonjar and Maryurbun of Orissa state, have come to settle in the forest during Jharkhand Agitation. Agitation is politically motivated. So their removal and resettlement is urgently required, so that the forest can regain its lost glory.

(a) There are certain examples in past history, which has bearing on the incidents, that has taken place later on. It is discussed here for the sake of record. Sometime in 1943-44 when the "grow more-food campaign" was at its tide a number of forest patches in the valley were under Government orders, let out for temporary cultivation of a the idea was that while trees were not to be cut the blank or semi- blank spaces could be made to grow the much wanted food crop. After cultivation of a year to two the temporary cultivation were to leave the area and the plan appears to have been make them put in tree species before they quitted. But whatever might have been the plan the result is that the temporary cultivators have settled down firmly on the land, cleared large gaps in the forest much more than what had apparently been permitted, and have built houses and saddle sheds. The Porahat reserved forest compartments affected are Bera 26 and 27, Kundrugutu 8,9,13,14 and Songra 11 and 14.

## **CHAPTER-VI**

### **PROBLEM OF ENCROACHMENT IN PORAHAT**

The tribal population who inhabited the forested areas had been enjoying forest resources for their livelihood and patronage from the forest Department in the form of extraction and

transport of timber, collection of minor forest produce for forest development corporation and state trading wings as well plantation activities. Tribals have been ecologically depending on the forest natural resources. Technically and economically, their means of livelihood has been primitive, lesser productive. Politically and administratively they are not willing to be governed by or influenced by modern institutions. Socially and psychologically they are inclined to believe in age-old customs and practices and resist the fast pace of change. Though the situation varies from place to place in degree but given a choice they would like to preserve their customs, traditions, habits, skills and economic systems and mindset.

The development set in after 1978 has started disturbing ecological balance. Activities of large scale illicit felling of trees and clearing them after burning the logs or sometimes leaving them in the field has raised to peak since 1978 during organized politically motivated and armed and violent agitation. Such feelings have been termed as Jharkhand felling. Such felling with the intention of encroachment for cultivation has taken toll of dense forest of Porhat, turning it into wooded waste. Year after year many forests were destroyed by the onslaught unleashed by agitationists. Dense forests are presently left confined to hilltops only. Distinctive feature of this activity is that forest areas of Interior areas are most targeted than those close to main roads and approachable roads. Continuous destruction of vegetation and natural growth and bringing them under irregular cultivation has rendered many forests eroded and infertile.

Graphic details of destruction, causes and consequences are illustrated by C.F, Southern Circle vide his report-1300 dated 24/7/01, which states that destruction is classified into 4 categories as per the motive of the act of commission and for the purpose of administrative action.

- I. Progressive encroachment for cultivation as carried out by Jharkhand agitationists.
- II. Illicit felling motivated by Socio-economic factors of livelihood.
- III. Illicit felling and subsequent illicit trade by organized Mafiosi.
- IV. Illicit feelings fuelled by instigation of unscrupulous elements.

I. Progressive encroachment for cultivation as carried out by Jharkhand nists. For ages interdependence of forests and tribals were ecologically balanced. But it is so happened that since 1978 the violent and armed agitation has set in which has started in the forested areas in the form of illicit felling in the name (garb) of Jharkhand felling, but it has continued in a systematic and regular basis. Initially it has started as a means of expressing the resentment against the Govt. and they started destroying the forest wealth, which was standing open before them. Forests which was standing open and unguarded in front of them was the target of onslaught of the violent agitationists:

Later in the course of time the agitationists have started felling the trees with the intention of encroachment and subsequently to convert such lands into agricultural fields. Later Porahat

Rakhsha Sangh (a group who has cultivated a misconception that Porahat is an independent nation) and other groups mushroomed in the name of Jharkhand have taken over the reins. In the course of time other self styled militant agitationists have also began to change the cause of agitation. Most of the groups and some groups, with fundamentalist and sectarian affiliations have taken this opportunity and settled people from far-flung areas such as Ranchi, Khuti, Gumla, Bandgaon, Tamad and even Raurkela, Sundergarh, Mayurbunj of Orissa. They always instigated by misguiding the people by spilling misgivings that-

- (a) Mineral and forest treasures were exploited as a source of revenue, while development and health, water, irrigation, agriculture and educational facilities in the areas had taken back seat.
- (b) Nurturing wrong belief that raiyati lands and sacred lands were wrongly settled as R.Fs, through the documental evidence show the contrary.
- (c) Resentment created against teak plantation that such trees are against tradition and custom.

When such misgivings without substance have started drying up and when the movement fuelled by such misgiving has begun to slow down, the demagogic leaders have started instigating the people for encroachment for cultivation. As tribals are habitual to primitive, unscientific agricultural practices, who does not put much efforts into agriculture, find it very remunerative to cultivate cleared forest is on account of the fact that forest lands are fertile enough to produce good crop without much efforts and inputs for one or two years. The leaders of the , agitation understood this aspect and exploited this for their political ends. It is even seen that same agitationists take ransome and distribute fake land records and land rent receipts. Prominent interest groups and personalities active in these activities as reported by concerned CF, are Khut-Katti Ralyat Union, Porahat and Bharat Peoples Agitation and people like K. C. Hembram, Mora Munda, Emmanuel Barla, Shamalal Munday, reportedly on the basis of the seized incriminating documents.

During the height of violent agitation which was in the nature of armed and destructive conflict when the coercive efforts of the forest department could not contain the destruction and rather forest staff were brutally targeted, the maximum efforts were limited to pressurizing the district, administration for the task and lodging of FIR. All efforts by the district administration, police administration and forest administration could not contain the illicit felling and encroachment unleashed by the agitations.

Agitationists, emboldened by the limited resistance, brought the people from far flung areas like Gumla, Ranchi, Khuti, 'Thamad, Chaibasa of this state and Gumla, Ranchi, Khuti, Thamad, Chaibasa of this state and Sundergarh, Keonjar and Maryurbuny of Orissa state, Keonjar and Maryurbuny of Orissa state, and settle them in this forest for carrying out illicit felling, clearing and encroachment. They started extending the encroachments as a matter of right and any administration efforts were resisted with organized, armed, violent and brutal attacks. It is reportedly stated that the acts of illicit felling clearing the forest land by felling, burning, either cultivation or leaving like that just for the sake of exerting their rights and titles, is continuing even today, thus destroying the establishment of any regeneration on a permanent

basis. Remarkable dimension is that such tendencies are seen even on steep slopes and stony areas which are highly eroded and unfit for cultivation, just with the motive of establishing the rights and titles.

## II. Illicit fellings motivated by the local socio- economic factors: -

For ages the tribals, most of who are below the poverty line have dependency on the forest and forest department. The logging wing which is the state trading division and plantation division, through silvicultural operations, plantation activities logging activities used to generate sufficient employment. With the loss of employment, besides the spurt in demand for fuel wood and timber in house building and agricultural activities in towns that have come up lately has pushed the people who are deficient in employment into illicit trade of firewood and timber.

III. Illicit trade in timber by Mafiosi. The rise in mining and industrial activities, establishment of towns and villages, rising, population and the resultant spurt in demand for timber and the existence of valuable timber in the open treasure against the back drop of rampant unemployment and below poverty conditions were readily exploited by organized Mafiosi. The railway lines running through the thick-forested areas have facilitated to their sinister designs. Division borders contiguous to other districts like Ranchi and Gumla and other States like Orissa and proximity to west Bengal border has compounded the whole problem. The onslaught on the forest by agitationists has also come as handy to Mafiosi and they are living in close symbiosis. They operate from commercial and industrial townships like Jamshedpur, Chaibasa, Ranchi, and Raurkela and run their organization by employing people living in the forest. The poor and livelihood deprived forest dwellers who was abetted, instigated and financially supported by the Mafiosi, fell the trees, shape them into sized sleepers and planks and transport them by cycles through unapproachable clandestinely forest paths to demand destinations. They transport them through railways also. Transportation by goods trains is very difficult and not plausible to detect. When there is connivance of the railways it is still difficult to check the problem, as most of the time they stop the train before the outer signal to facilitate the evacuation of timber to escape checking's and raids at the station. Good numbers of cases were instituted against Railways also. Beside Mafiosi, local middlemen in the village weekly market also act as conduit for illegal trade.

The massive raids conducted in the chaibasa market place in 1993 and in chakraderpur market place at Jharjhara in 2000, which are contiguous to Porahat Division and destinations for timber cut from Porahat division could stop such illicit trade for longer time. But such raids in the market places were very limited owing to armed and violent mass resistance and consequent straining of law and order scenerio. Aforesaid raids indeed have tremendous lasting effect against illicit trade. But non-continuation of such coercive tactics is again making the Mafiosi bolder.

iv. Illicit felling incited by unscrupulous indirect departmental agencies. As stated in various departmental meetings and as stated by C.F., S.C. in his report 1300 dt. 24-07-2001 labourers, Munshis engaged by the state trading departments, who are adversely effected by the slowing in the logging activities, fearing the loss of Hnployment incite the gullible local tribals into girdling

the trees on the pretext that he will get employment while extracting and logging such trees. Due to ban on felling as per the new guidelines of working plan codes, many forests are rendered non-available of regular coupes for extraction of timber to meet the demand, which has resulted into non-functioning of logging operation of State- Trading divisions of many areas inside the forest jurisdiction. Hence the permanent or temporary labourers of State Trading Divisions are rendered jobless. Munsis and mates who are supervisors on temporary daily wages are facing unemployment. This can not be ruled out, that the non-engagement problem at lower level-staff and labourers of State- Trading may encourage them to help directly or indirectly in mass- felling or mass girdling in the name of "Jharkhand Felling" in the forests, so that it will facilitate them in their engagement / employment / job throughout the major period of the year. A large number of trees was reportedly felled by such activities also in the garb of Jharkhand agitation- connected felling.

### **SOCIO-ECONOMIC PROFILE OF ENCROCHED LAND**

An understanding of the land use which the encroached forestland is subjected to, will give insight into the socio-economic aspects of the encroached land and it will form the basis for future policy formulation for eviction.

1. In most of the cases it is observed that 'a part of the illicitly felled and cleared forest land is brought under the cultivation during the present stock map preparation, while the rest of the area which constitutes around 213d the total area is clear felled without bringing the area currently under the cultivation. In such areas rootstock is existing and occasionally throwing up good coppice regeneration and the encroachers are seen time and again cutting down the coppice regeneration continuously.

2. A close observation of the type of agricultural practice on late encroached areas is worth mentioning. The method of cultivation is mostly either traditional or primitive and unscientific or perfunctory and careless. The agricultural production is mostly non- remunerative, unproductive and subsistent. In most of the agriculture crops even little care like weeding, administering fertilizers or pesticides is also not taken. Encroachers conspicuously either put efforts or frivolous. Agricultural crops, which are coming on extensive areas under each household, does not yield food grains adequate enough to feed the whole family for more than 1/4 of a year and generating marketable surplus is a far cry. The general mindset of the encroachers is to carry out cultivation frivolously and without many efforts. So it indicates that the tendency of the encroachers is to enforce their rights and title rather than any serious agriculture. The Socio - economic census shows that the agriculture is mostly left to the folk, alone during most of the time. However due to insufficient agricultural which is not lasting for even 3/4 of the year, they tend to extend encroachment by resorting to clear felling fresh areas, clear and burn them year after year in an attempt to augment the production. But such primitive practices are creating more soil erosion and more water run off and consequent decrease in soil fertility and the encroacher resorts to encroach further in an attempt to augment production thus the vicious circle of extension of encroachment is set in.

3. Permanent villages or hamlets are not seen on most of the RFs or PFs that are encroached. Hence encroachment in the form of settled villages or larger hamlets are seen very rarely and are confined to few compartments like Bera 1,3 of Bera RF block, Kundrughuttu 23 of Kundrughuttu block, Songra 14 of Songra block. In rest of the areas hutments are seen sparsely scattered with I or groups of 2 to 4 appearing widely dispersed. It follows that either they stay at far off villages existing on the revenue lands or they reach out to far away areas for clearing the forest lands with the intension of cultivation right now or in some future.

4. In recent past fresh encroachments have always been carried out, by the people brought from outside the area i.e., from Ranchi, Tamad, Gumla, Sundergardh etc., on the instigation from the anti social elements in the guise of politicians who constantly misguide the people that one, day the encroached areas will be regularized with registered titles in their names. Such tendencies are continuing even today in smaller scale, but indeed surreptiously. The forest staff always repulses such attempts but owing to heavy shortage of field staff, the efforts of the department are dwarfed by the severity of the problem.

5. Crops raised on average to steeper slopes are bajra, Jowar, horse gram and local beans, which is a lesser remunerative and unproductive land use, while on the valley plains and gentle slopes non traditional and comparatively more remunerative crops are raised that too with adequate crop management methods.

Above description of cropping pattern and nature of agricultural practice tend to highlight the highly unproductive and destructive land use these lands are subjected to and as an argument for the need to restock and reconverting the encroached land into tree cover by coercively evicting the lands as a more productive alternative and persuading encroachers for more remunerative economies activities.

The deleterious effects of encroachments in the form of increased soil erosion, loss of water table, drying up of drainage system is clearly seen right now. Sonfa reservoir, which earlier used to witness high water levels is now having water level touching far below the minimum during the peak rains, is the testimony to the heavy loss of drainages.

### **REHABILITATION MEASURES**

1. With the enforcement of F .C. Act 1980 the encroachments have stopped getting regularized. The recent verdict of honourable Apex Court has also clearly spelt out that all encroached areas shall be evicted.

2. It is clearly seen that it is beyond the capacity of the forest deptt. keeping in the view the Herculean problem and as clearly stated in the aforesaid paragraphs it is more a case of socio-economical, political problem and more of a law and order problem rather than mere forest administrative issue to tackle this problem.

1. Accordingly strategy of action plan shall be formulated to implement the eviction and removal of encroachments in the forest in a phased manner and simultaneously effecting the process of resettlement and rehabilitation of people evicted.

2. All such actions can be taken under the preview and powers conferred by the Bihar Public Land encroachment (Eviction) act.

3. Monitor the course of action and reorient the strategy for successful implementation of the objective.

4. Rehabilitation of forest recovered and taken into physical possession by plantation and soil conservation measure these is stated in detail in part-II.

5. Rehabilitation strategy for evicted People

### **Strategies for Eviction.**

1) Eviction shall be carried out under the preview and power conferred by Bihar Public Land Encroachment (Eviction) act.

2) It shall be carried out in a phased and planned manner according to the severity and nature and stage of the encroachment as well as social, demographic and geographical situation of the encroachment.

3) Demographically it shall be recalled that people from far flung areas like Tamad, Ranchi, Gumla, Chaibasa, Khunti of Jharkhand and Sundergarh district, Mayurbunj district of Orissa were brought and settled in the garb of Jharkhand agitation hence there exists a complex demographic and ethnic diversity and multiplicity of aspirations, interests and values and stakes in the encroachment scenario of this region. This calls for optimum strategy against the diversity, for maintaining ecological balance and sustainability of natural resources backdrop of these evictions shall be carried out in a phased manner. Financial support and subsidies shall be targeted for more ecological groups, who have been ecologically in balance with the location for the ages, for ensuring ecological balance and sustainability of natural resources.

It shall be kept in mind that original inhabitants traditionally and presently generate substantial livelihood from non-timber forest produce (NTFP) and have greater dependency on the forest ecosystem and will have higher stakes in the restoration and maintenance of forest ecosystem. This aspect shall be born in mind while formulating the strategies.

4. The people who have migrated from outside areas are observed to be causing more destruction to the forest either by resorting to bringing more areas under unproductive, useless and precarious cultivation just as a tokenism of creating rights and title or engaged in illicit timber trade to destinations of their origin. Their mindset should be changed for taking up intensive remunerative and productive other venues of livelihood while shifting to non-forest government lands. It is understood that for the fear of deterrent and punitive effect of Forest Conservation Act, 1980 all the developmental activities, like irrigation works, agricultural extension activities to bare minimum activities like irrigation tube wells or drinking water tube-wells, evade the people residing on the encroached lands. Hence these people feel held up on the encroached Lands by playing into the lands of their demagogues on the hope of getting their encroachments regularized in future; find them selves in the conflicting situation of deprived

developmental activities and constant impoverization. Strategies of coercive action coupled with persuasion aimed at better living standards shall be tried.

## **STRATEGY FOR EVICTION AND THEIR REHABILITATION**

### **Issues before resettlement and rehabilitation**

1. Tribals living inside the forest, especially away from the main roads are habitual to *old* customs, unproductive occupations and some tribal even practice primitive agricultural practices. Consequently their occupation are subsistent and unremunerative. As dealt with in details in Para 5 above the agricultural practices followed on the encroached lands are always unremunerative, subsistent, unproductive and on the whole a futile source of livelihood. With the constant loss of soil fertility due to soil erosion resulting from cultivation on slopes and reduced soil-moisture regime is creating further impoverishment. This argument underlines the unproductive land use the encroached land is subjected to and the unremunerative economic activity the encroachments are leading.

2. With the rapidly changing situations and economic systems, the tribals need to change over to more productive economic avenues and alternative opportunities and have to align with the developments happening around them. In fact many tribals feel the pressure of market economic forces and tensions created from the needs and aspirations arising from the market forces. They indeed develop the proclivity for remunerative avenues of alternative employment.

3. Hence it is imperative to implement development measures in such a way that tribals transform into productive force from the present passive force engaged in lesser productive economic activities. Such transformation from a passive force is the bedrock for sustainable management, regeneration, replenishment and protection of forest and other natural resources.

4. The important player in the arena of encroachment is the Mafia, which is thriving and flourishing on the illicit timber trade through the medium of encroachments and the encroachments who draw their support from timber mafia. Hence unless their back is broken, the eviction can not take off easily.

5. Extremist infestation in the encroached forests is an issue that can not be overlooked.

6. Tribals are mostly gullible and easily play into the hands of their leaders without questioning the authority. Hence a political dialogue to re-solve the issues shall be explored.

Strategy of ensuring economic upliftment in the resettled area as an integral part of the resettlement package shall be evolved, since tribal welfare and forest policy are closely linked together. Hence optimum strategy of resettlement as well as eviction and rehabilitation of encroached areas is that Forest department shall be involved in various development activities, encompassing the whole area around the forest land, such as rural development, tribal development programmes, welfare and anti-poverty measures. Such strategy must also include comprehensive and concerted involvement of NGOs, VFPMCs (Village Forest Protection and Management Committees) and EDCs (Eco-Development Committees) hand in

hand with the govt. agencies. Strategy shall have economic, ethno-cultural as well as ecological comprehension with more practical approach. This is in keeping with the emerging socio-political, ecological and ethnological conflicts and contradictions shrouding the whole region . Package of activities shall reconcile such conflicts and contradictions.

### **Suggestions And Package of Activities for Eviction and ‘Their Rehabilitation**

Proposal of activities for motivating the shifting of people outside the encroached land and for rehabilitation of evicted people and involving them in the restoration of eco-system is enumerated below —

1. Mechanism for inducing changing over from unproductive and subsistence agricultural practices, shifting cultivation or primitive agricultural practices and rain fed and seasonal agricultural to improved agricultural practices shall be implemented immediately. Package of financial support and flexible loan and subsidies will motivate the people to take up cultivation outside the forest land where the terrain is suitable rather than sticking to unsuitable and inaccessible terrain. A political dialogue shall be initiated along with administrative actions.

2. Constant dialogue with local representatives, stake holders and NGO’s and district administration in this direction shall be maintained continually to open all channels of communication. This will ensure sensitizing the people against the conflicts, social impoverishment and loss of ecological balance.

3. Involving the local tribal especially on the priority in the regeneration, plantation, ecological restoration and soil moisture conservation activities of the resourced forestlands. The Jharkhand Resoition on JFM vides-No.-Man, 05/2000- 3658 F & E Dt.27th September,2001 shall act as leverage for their own socioeconomic rehabilitation as well as rehabilitation of the recovered forest lands.

4. Strategy of discouragement and stringent coercive action shall go simultaneously along with incentives and encouragement for resettlement on revenue lands shall be adapted. It should be so phased that actions shall be smooth and not aggressive enough to alienate the tribal interests with due concern to forest dwelling tribes.

5. Linkage shall be provided with other development agencies like Tribal Welfare Department , Public Health Engineering Department , Education Department, Rural Department and financial institutions.

Access to concessional government financial assistance to pursue activities oriented towards non timber forest produces, medicinal plants, fruits and nuts to discourage and demotivate from depleting or deteriorating forest based natural resources.

8. Comprehensive and assured measures of protection and safeguarding from wildlife threats shall be evolved and effectively implemented. Assurance and compensation mechanisms if evolved and implemented will induce the people to shift to more safer lands. Life on the encroached lands is always precarious and crops are prone to vagaries of damage by wild

animals like elephants and wild boars. They mostly suffer silently and suppress their anguish of getting stuck on encroached lands as they fail to get their claims redressed.

9. Promotion of eco-tourism, adventure tourism and ethno-tourism will generate employment and allied economic activities.

10. Alternative employment activities shall be evolved by promoting cottage industries and processing of Non timber forest produce. It is pathetic to see that NTFP based cottage industries are consistently absent in these divisions, whereas in the weekly market huge quantities of raw MFP like leaf, silk cessions, fruits, mats and medicinal herbs are seen put up for sale. They sell these raw commodities to market middle — man at dirt cheap. Hence there is conspicuous leakage of Value addition in these villages. Hence their trade in MFP is unremunerative while their dependency on forests is reduced to uneconomical and not in balance with ecology. This leads to a situation where collection of MFP as economic activity becomes unviable and hence people look for illicit felling as income augmenting source of livelihood. Processing and packaging if developed as a cottage industry with improved marketing infrastructure will lead to economic upliftment and the dependency on the forest will be more deeply rooted with symbiotic relationship.

11. Strategy of exploiting indigenous knowledge, indigenous skills and techniques and imparting training and skill up gradation and development of market support infrastructure shall be implemented to augment income levels after shifting to non- forest land.

