INTRODUCTION

This working plan covers the entire Reserved, and Protected Forest areas of Bramhapuri Forest Division, which was the part of the erstwhile East Chanda Forest Division & West Chanda Forest Division till 28th August, 1983.This replaces the Working Plan of Shri Kartar Singh for Reserved Forests of tract dealt with. Also this Working Plan includes about 56948.99 ha of such forest land which have not been covered under any previous plan. Total area covered under this plan is 117173.83 ha. This is the first independent and consolidated working plan for Bramhapuri Forest Division.

- The period of Kartar Singh's plan was 1977-78 to 1991-92. For revision of this plan and to write up the plan for new areas , the field work was started during the year 1996-97 and part work could be completed. The part of the tree enumeration works could be completed during the year 1996-97 & enumeration of trres in remaining forest areas of about 77000 ha could be started in the month of January 2002 and it was completed in the month of June 2002 under the supervision of Sri T.K. Choubey, IFS Dy. Conservator of Forests, Working Plan Division No.1, Chandrapur. Subsequently remaining field works, collection and compilation of information for appendices & writing of the draft working plan were carried out under the supervision of Sri T.K.Choubey, IFS Dy. Conservator of Forests, Working Plan Division No.1, Chandrapur.

- The preliminary Working Plan Report was prepared by Sri B.S.Thengdi IFS Dy. Conservator of Forests, Working Plan Division Amrawati. The same was scrutinised by the Conservator of Forests, Working Plan Circle, Nagpur and was submitted to the Chairman and member of the Committee. Meeting of the above committee was held on 19th April,1995 in the Chamber of the Chief Conservator of Forests (Production), M.S. Nagpur and the preliminary Working Plan Report was discussed in detail. Suggestions were given for necessary corrections.

- The preparation of this plan was entrusted to me on January 2002 after completing the draft plan of Wadsa Forest Division. The Working Plan for Bramhapuri Forest Division encompasses the ideas of National Forest Policy guidelines of 1988 and therefore lays more emphasis on conservation, preservation and Protection of Forest, Wildlife and Environment. In this draft plan, suggestions given during the discussion on preliminary working plan report have been incorporated. Besides, new entries have also been made under the guidance of the honorable Additional Principal Chief Chief Conservator of Forests (Production & Management) M.S., Nagpur and the Conservator of Forests, Working Plan Circle, Nagpur. To solve the problem of forest fire to the greatest extent, the special thrust have been prescribed.

- This Working Plan has prescribed for the formation of Old Teak Plantation Working Circle for to improve the stock of teak recognizing the fact that teak is a light demander species and comes up very well after canopy removal & planting teak. The other working circles proposed are Selection - Cum - Improvement Working Circle, Afforestation Working Circle, Improvement Working Circle, Pasture Working Circle, Kuran Working Circle, Non Timber Forest Produce (Overlapping) Working Circle and Wildlife (Overlapping) Working Circle which have been prescribed for the better scientific management of the forest areas in order to meet the ever growing demand for large size timber and the small size timber for construction of houses, Agricultural implements, Firewood and Grasses & Fodder requirements. Canopy removal in patches in SCI and Improvement Working Circle have been prescribed followed by planting of superior quality of teak to improve the growing stock. In addition to this, the present working plan also offers greater employment opportunities to the local people in forestry operations.

- This working plan has for the first time has suggested prescriptions for identification, multiplication and marketing of medicinal plants in the forest areas in order to increase the potential of growth and harvesting of medicinal herbs in the forest areas as well as to provide employment to the local people in the field of marketing of natural herbs and medicines.

- This working plan has also suggested for establishment of Eco-tourism in the forest areas on the lines of National Policy on Eco-tourism of Govt. of India in order to educate the people and to create awareness among the citizens visiting forest areas about the conservation, preservation and protection of natural resources including wildlife.

- The management maps and stock maps have been prepared using GIS technology through Geo-media Software in the office of the Conservator of Forests, Working Plan Circle, Nagpur and the same will be supplied with this working plan by him.

- I am highly grateful to Shri M.K.Sharma, IFS, then Director General of Forest, and *ex-officio* Secretary to the Govt. of India, Ministry of Environment, Forest and Wildlife, New Delhi whose encouragement inspired me to think and incorporate innovative ideas in the preparation of this working plan. I am also thankful to Shri S.K.Mitra, IFS, the Principal Chief Conservator of Forests, Maharashtra State, Nagpur for his kind inspiration and valuable guidance in the preparation of this working plan.

- I am also thankful to Shri B.K.Singh, IFS, the Principal Chief Conservator of Forests, Maharashtra State, Nagpur for giving me an opportunity to write this draft plan & also his kind inspiration and valuable guidance in the preparation of this working plan.

- I am extremely thankful to Shri Jwala Prasad, IFS, Additional Principal Chief Conservator of (Production & Management), M.S., Nagpur for his keen interest and valuable guidance provided in the preparation and revision of this working plan especially for the formation of all the proposed working circles. He has taken very keen interest & guided extremely in writing up different chapters of this draft working plan.

- I am extremely thankful to Shri J.N.Saxena, IFS, MD, Forest Development Corporation of Maharashtra, M.S., Nagpur & then Additional Principal Chief Conservator of Forests (Production & Management), M.S., Nagpur for his keen interest and valuable guidance provided in the preparation and revision of this working plan. I am also thankful to him for providing the logistic support i.e. Computer, its peripherals, vehicle and manpower without which it would have been very difficult to accomplish this task. I am also grateful to Shri K. Subramaniam, IFS, Additional Principal Chief Conservator of Forests (Administration & Human Resource Development) M.S., Nagpur for his kind inspiration and valuable guidance for the revision of this plan.

- I am also highly grateful to Shri J.S.Grewal, IFS, Chief Conservator of Forests (Conservation), M.S., Nagpur, Shri Shailendra Bahadur, IFS, Conservator of Forests, Working Plan Circle, Nagpur whose keen interest, valuable guidance and suggestions have helped me to complete this working plan in time. I am also thankful to Shri S.D.Sontakke, IFS, then Conservator of Forests, North Chandrapur Circle, Chandrapur, Sri Bhagwan, IFS, Conservator of Forests, North Chandrapur Circle, Chandrapur, Shri K.R.Khadse IFS, then Deputy Conservator of Forests, Bramhapuri Forest Division, Bramhapuri, Sri N.R. Zurmure, IFS, Deputy Conservator of Forests, Bramhapuri Forest Division, Bramhapuri, and Sri S.B. Kewete, Assistant Conservator of Forests, Bramhapuri Forest Division, Bramhapuri and all other officers & staff of Bramhapuri Forest Division for extending cooperation in providing important information needed to complete this plan specially when they have extended sincere co-operation for the tree enumeration works in Bramhapuri Forest Division.

- I am also thankful to Dr.S.S.Srivastava, IFS, Deputy Conservator of Forests, Working Plan Division No.2, Chandrapur for extending his kind co-operation and valuable suggestion in the preparation and revision of this working plan.

- I am personally thankful to the staff of this Division who have made it possible to complete this working plan and they have put in their best endeavour in the preparation and revision of this working plan. I am extremely thankful to Sri S.K.Thapliyal, Range Forest Officer Working Plan Division No.1,Sri R.T.Khanke, Range Forest Officer Working Plan Division No.1, Sri N.T.Ramteke, Ranger Surveyor, Working Plan Division No.1 and Sri S.V. Deshmukh Forest Surveyor Working Plan Division No.1 who have done outstanding works in completing this preliminary working plan in stipulated time and all of them deserve special appreciation for cooperation they extended to achieve this target. I am also thankful to Sri S.K.Thapliyal, Range Forest Officer Working Plan Division No.1, Chandrapur who has done outstanding works of GIS related to maps of Bramhapuri Forest Division.

- The staff of Working Plan Division No.1,Chandrapur were deeply associated with preparation of this working plan and they deserve appreciation for cooperation they extended. Shri S.K.Thapliyal, Shri. R.T.Khanke R.F.Os, Shri N.T.Ramteke, Ranger Surveyor, Sri S.V.

Deshmukh, Sri P.Y. Mahitakar Forest Surveyors, Sri G.N.Mandhre, Chief account (Retd.), Sri R.V. Thakre, Chief Account, Sri.B.F. Ambekar, Steno Typist, Sri S.K.Rathe, Accountant, Sri A.G.Badghare & Sri V.R.Watekar Clerk, Md.Yousaf, Forest Guard, Sri G.R.Pendam, Driver, Sri S.V.Choudhary Office Peon who have done hard work and contributed a lot by assisting in compiling this plan, deserve highly appreciation.

- I am extremely thankful to the administrative staff of this Division who have taken keen interest and extra pains to prepare this working plan and therefore the staff of this Working Plan Division associated with the preparation of this working plan deserve appreciation for their sincere and dedicated efforts.

Place :- Chandrapur
Date :- 22/03/2004

(T.K.Choubey)
Dy.Conservator of Forests
Working Plan Division No.1,
Chandrapur

SUMMARY OF THE WORKING PLAN FOR THE BRAMAHPURI FOREST DIVISION FOR THE PERIOD FROM 2004 -2005 TO 2013 -2014

PART – I

SITUATION :- This Working Plan covers Reserve and Protected Forest areas admeasuring 117173.83 ha. in charge of the Forest Department located in the Eastern part of the Chandrapur District and within the civil territories of Bramhapuri, Nagbhid, Sindewahi,Sawali,Chimur,Mul(P) and Warora(P) Tahsils. The above area is inclusive of Zupdi and big tree forests admeasuring 1266.24 ha which is in possessation of Forest Department. The forest areas are more or less in compact blocks.

CONFIGURATION :- The area is undulating and hilly, the hills being low in height. The forests area situated on the triangle of high lands forming a table land, which runs the entire length of the western portion of the tract. Numerous hills rise on this table land mainly on the north-eastern, eastern and south-eastern sides. The main Ranges of group of hills in the tract viz. Satnala in the north east, Khobramendha and Tipagarh in the south east. Wainganga is the main river & it is situated on the western boundary of the division and it is the recipient of the tributaries viz. Sati, Khobragadi, Garvi, Kathani. Among these Khobragadi is the main tributary and other rivers and tributaries join with Khobragadi river.

GEOLOGY :- The geological formation throughout the division belongs to Archaean series.

CLIMATE :- The weather remains hot and dry for the major part of the year. The mean maximum temperature is 29.4ºc.and the mean minimum temp. is about 13.7ºc. during winter. The highest and lowest temperature recorded are 47.8ºc. and 5ºc. respectively. The average rainfall over the area is 1524 mm.

WATER SUPPLY :- During summer from April to June, water shortage is felt.

BOUNDARIES :- The state of maintenance of the boundary lines and pillars is very poor. In case of 'B' class and Protected Forests, the boundaries do not exist at most of the places. This led to encroachment. Village boundaries of surveyed villages are not maintained. Unsurveyed villages are still without proper boundary demarcation.

RIGHT AND CONCESSIONS :- Reserve Forests are not burdened with rights. However, some concessions have been granted to agriculturists. In the Protected Forests areas, nistar rights are recorded in the "Nistar Patrakas" of the concerned village.

DESCRIPTION OF THE FORESTS : The forests of this tract belong to the group "Tropical Dry Deciduous Forests" and sub-group "5A/C3- Southern Tropical Dry Deciduous Forests."

The local sub-types found are as follows :

A. TEAK FORESTS WITH DENSE BAMBOOS :-

(i) Plain sub-type

(ii) Hill sub-type

B. TEAK FORESTS WITH SCANTY OR NO BAMBOOS :-

(i) Plain sub-type

(ii) Hill sub-type

C. MIXED FORESTS WITH SCANTY OR NO BAMBOOS :-

Teak forests account for only 1.14 % of the total area of the Division. The percentage of teak in teak bearing areas varies from 20 to 50. The edaphic and biotic factors are responsible for low extent of teak in the division. In mixed miscellaneous forests commonly found important species are ain, bija, harra, beheda, semal, haldu, dhaora, bhirra, tendu, salai, mowai, lendia,

khair etc. Bamboo is found in some patches in Chimur and Sindewahi Ranges. The main species of bamboo is Dendrocalamus strictus.

INJURIES TO WHICH THE CROP IS LIABLE :- Frequent fire is one of the important causes of injuries to the crop. This causes considerable damage to the young crop. The fire affected saplings and poles develop hollowness. Fire prevents formation of humus by burning the grass and leaf litter. Illicit cutting is common, especially in the vicinity of human habitation. However, organised illicit cutting is not common. Encroachments are noticed in the protected forests, specially near the cultivated areas, and where the boundaries are not properly demarcated. Grazing by cattle is beyond the capacity of the tract. No frost occurs in this tract. Strong wind causes damage to the weaker members of the plant communities. Drought is not common.

AGRICULTURAL CUSTOMS AND WANTS OF THEPOPULATION :- The total population of the Chandrapur District as per 2001 census is 20.78 lakh. Average population density is 194 per sq.km. The rate of increase in population is 17.26%. As per the cattle census of 1997, the total cattle in the district is 11.22 lakh. The density of the cattle is 104.96 per sq. km. Agriculturists dominate in the population but they are mostly small or marginal farmers. Malgujari tanks are main and potential source of irrigation. People depend upon forests for timber, firewood, bamboo, grass and other MFP's.

MARKET :- These forests are worked commercially for timber, fire-wood, and certain MFP's. Timber, poles and firewood are brought to the sale depots, where they are sold in open auction. Fuel beats are sometimes sold at the jungle depots itself. Tendu leaves are sold by tender. Other MFP's are collected by T.D.C. through local tribals. Bramhapuri is well connected by roads.

METHODS OF HARVESTING AND TRANSPORT :- Annual coupes are worked either by the FLCS or depart-mentally. Felling and logging is mostly done by saw. Timber is transported to sale depot by departmental trucks and tractors. Fuel beats are either stacked in coupe depots or transported to sale depot.

STAFF AND LABOUR :- The supervision of works is done by the Dy. Conservator of Forests through A.C.F's. There are 3 A.C.Fs, 12 R.F.Os, 45 Foresters, 153 Forest Guards, 4 Drivers, 1 Surveyor, 1 Head Clerk, 8 Accountant, 1 Junior Assistant Statistician, 19 Clerks, 1 Daftari, 1 Choukidar, 1 Naik, 2 Peons, 1 Sweeper, 1 Dakrunner, and 1 Khalashi. To implement the prescriptions of the plan, the present staff is not sufficient. The labour potential of the division is poor. Need of importing labourers is felt to supplement the local labour potential.

PAST HISTORY

A. RESERVED FORESTS :- The forest areas forming old reserves account for 51.49 % of the total forest area of division. These areas were reserved in 1897 under IFA, 1878. In the past plan these areas covered 60376.59 ha. belonging to 'A' class. About 11302.41 ha. areas was newly reserved during 1992. During the preparation of this plan the whole RF area is divided into 318 compartments. These are distributed in Chimur, Naghbhid, Bramahpuri, Sindewahi and Sawali Ranges of Bramahapuri Forest Division after reorganisation in 1983. Before reorganisation Bramhapuri, Nagbhid and Chimur Ranges were independent parts of the East Chanda Division and Sawali & Sindewahi Ranges were independent part of the West Chanda Division.

- Prior to reservation of this forest in 1879, the tract was in very under developed state. There was no regulation or control over the fellings in this forests. After reservation of this forests, some protection measures were taken. Period of regular working under different plans started from 1899.

- The first working Plan for these areas have been prepared for the period between 1900-1926 by Ranges. Mr.C.M.Hanson's Working Plans for Bramhapuri & Gunjewahi Ranges and Mr. Poona Swami's Working Plan for Warora Range were the first working plan for the Reserve Forest of the present tract dealt with. These two Working Plans described that no good forests existed in these Ranges. These working plans originally prescribed improvement fellings and coupes were opened for felling by Petty Purchasers who could remove any tree not marked for Reservation. The main objects of this plan were to obtain a small timber & fuelwood for Agricultural classes. The plan

was quite simple in prescription and prescribed improvement felling all over the area. This was subsequently changed into coppice with standard in some felling series.

- This plan was replaced by Mr. Vahid (1927 – 1935). Mr. Vahid's plan prescribed five Working Circles. (1) High Forest Working Circle, (2) Coppice with a Standard Working Circle, (3) Low Forest Working Circle , (4) Low Forest Under Worked Working Circle and (5) Bamboo Working Circle. Best Forest areas were placed under High Forest Working Circle under this plan were uniform system of management was prescribed with rotation period of 60 to 80 years. Medium quality forest were worked under Coppice with Standard Working Circle with rotation of thirty years with Teak and Bija being prescribed as the most suitable standard. Teak and Mixed Forest considered unfit for producing large size timber were allotted to Low Forest Working Circle with rotation of 30 to 40 years. Remaining areas were allotted to the Low Forest Unworked Working Circle with no regular working prescribed. No area of the present tract dealt with was under Bamboo Working Circle. The Silvicultrual System prescribed was clear felling. Main felling was carried out fairly completely. Thinning were not carried out partly because of insufficient demand.

- This Plan was replaced by Mr. Hewtson (1936-1946). Mr. Hewtson's plan described four Working Circles. (1) High Forest Working Circle (2) Coppice with Standard Working Circle (3) Misc. Working Circle (4) Bamboo Working Circle. Only small areas of the same Working Circle in Mr. Vahid plan for growing large valuable timber and all highest site quality areas of Coppice with Standard Working Circle in Mr. Vahid's Plan were allotted to High Forest Working Circle in this Plan. The areas of the tract dealt with in the present plan were not covered by this Working Circle. The characteristics of the high forest were the deficiency of the lower girth classes, the general absence of advanced growth and the presence of dense bamboo under growth rather than overwood. The Coppice with the Standard Working Circle was allotted to all areas taken out of High Forest Working Circle of the previous Plan as well as other areas situated fairly close to Markets and in which the Forest growth was sufficiently dense. The rotation was fixed at 40 years and the rotation for standards was not fixed due to lack of growth statistics of the species concerned. Areas having inferior and open forest & those areas too remote from the markets were placed under Misc. Working Circle. Irregular working removal of dead & dying trees & improvement or selection felling was prescribed under the orders of Conservator of Forests. Bamboo Working Circle (Overlapping) of Mr. Hewtson's Plan does not include the present tract dealt with. Under this Working Circle the felling cycle was of 4 years. The felling rules were relaxed in case of advanced clear felling in coupes of High Forest & Coppice with Standard Working Circle. It was for the first time when retention of minimum 8 culms over one year was prescribed each clump.

- This Plan was replaced by Mr. Singh & Mr. Majumdar's plan (1949-64). This was a more systematic plan which was prepared after intensive study of forest. Under this plan forest areas were divided into teak & Misc. forest depending upon the presence of teak in the crop. The forest having 15% & more teak were classified as Teak Forest. The area of present plan belongs to the then Bramhapuri, Sindewahi & part of Warora Ranges of erstwhile North Chanda Forest Division. The main object of Mr. Singh & Mr.Majumdar's Plan was to obtain maximum sustained yield of all kinds of produce & to satisfy the local demands for small timber firewood & other minor forest produce.

- This plan was replaced by Mr. Kartar Singh's Plan (1979-1992). Sri Kartar Singh set objectives according to the National Forest Policy guidelines & methods of treatment were adopted on the basis of functional classification of Forest. This plan prescribed five Working Circles – (1) Conversion Working Circle (2) C.W.R. Working Circle (3) Improvement Working Circle (4) Kuran Working Circle (5) Misc. Working Circle. The areas under conversion Working Circle allotted to were the better quality forest of site quality mostly from III to IVa. All these areas were considered to be suitable for clear felling & raising teak plantation. The coppice with Reserve Working Circle included well stock of Forest of inferior quality capable of producing small to medium size timber, poles & firewood. Mostly the forest under this Working Circle were of site quality varying from IV a to IV b with a few small patches of quality III also. The improvement Working Circle of Kartar Singh's Plan comprised marginal areas which failed to regenerate due to adverse biotic factors. These areas were degraded and were liable to erosion.

B. PROTECTED FORESTS :- Before the abolition of proprietary rights, the Jamindars and malgujars held the proprietary rights over Protected Forests. The people depended on the

whims of individual proprietor for their requirement of forest produce or for grazing their cattle unless these rights were recorded in the Wazib-ul-arz.

- After abolition of the proprietary rights these forests vested in the State Government. The first working scheme for these forests were prepared by V.K.Prabhu which was brought under implementation since 1965-66. Prior to that, these forests were not managed under any systematic or on silvicultural basis. The present plan does not include any areas which were included in V.K.Prabhu's working scheme and are being managed scientifically under any working plan for the first time.

RESULTS OF PAST WORKING :-

(1) Tree forests were divided into S.C.I. and C.W.R. Working Circles on the basis of presence or absence of commercial value of tree species.

(2) The compartments formed included forest as well as non-forest areas. This gave rise to serious protection problems. Protected forests in the vicinity of villages had heavy pressure of cattle and human population which resulted into large scale encroachments.

(3) In C.W.R. Working Circle, a number of spps. have diminished. These include bija, ain, moha, beheda, harra, bhirra, khair, semal as well as host of other species which are poor to no coppicers or which coppice only upto a certain age.

(4) Analysis of maps prepared at that time, reveals large scale pentagraphic errors.

(5) No soil conservation measures were carried out though prescribed during the plan period, soil erosion has accelerated.

(6) No light was thrown on the scientific management and improvement of M.F.P's.

(7) Age old tussar cultivation practice was ignored.

(8) Normalcy of forests could not be achieved.

STATISTICS OF GROWTH :- Growth study was made by Kartar Singh during preparation of Working Plan for East Chanda Forest Division. As per stump analysis, teak can attain girth of 150 cm in 108 years, bija, ain, bhirra, dhaora and tendu can attain girth of 135 cm in 112 years, 120 cm in 122 years, 135 cm in 108 years, 135 cm in 123 years and 135 cm in 120 years respectively. As per the enumeration data, the no. of stems per ha in SCI Working Circle of V.K.Prabhu's scheme is 303.

WILDLIFE PRESERVATION :- Wildlife was being managed under various rules and regulations, framed from time to time till enactment of the wildlife (Protection) Act, 1972 as well as the latest amendment to this Acts from time to time. This Act came into effect in Maharashtra with effect from 1st June, 1973. Subsequently, various rules were framed under this Act. No shooting blocks exist in Bramhapuri Forest Division. Compensation is paid to the owner of cattle, which is killed by tiger, panther and other wild animals as prescribed by the Government from time to time inside or outside the forest areas. Also compensation is also paid in case of death or injury to human life by wild animals prescribed by the Government from time to time.

PART – II

BASIS OF PROPOSALS

NATIONAL FOREST POLICY 1988 :- The National Forest policy of 1988, lays much emphasis on maintenance of environment stability, conserving national heritage, checking soil erosion in catchments area of rivers, increasing the tree cover through massive afforestation, meeting the requirement of firewood , fodder, small timber and minor forest produce of rural and tribal people, efficient utilization of forest produce and people's involvement to achieve these objects.

The general objects of management are as under :

i) To preserve forest cover on steep hill slopes, along the nalla banks and water courses to prevent soil erosion and for preserving site and environment.

ii) To enrich the growing stock in natural forests and to restock the under stocked and degraded forests, to achieve normalcy of growing stock in the shortest possible time.

iii) To meet the requirement of small timber, firewood, fodder and minor forest produce of the rural and tribal population on top priority.

iv) To increase the production of minor forest produce and to manage the same scientifically to utilize the potential to the optimum extent on sustained basis.

v) Consistent with the above objective to ensure maximum sustained yield.

CONSTITUTION OF WORKING CIRCLES :-

The following working circles have been constituted :

i) Selection Cum Improvement Working Circle.

ii) Afforestation Working Circle

iii) Improvement Working Circle

iv) Fodder Management Working Circle.

(a) Pasture Working Circle.

(b) Kuran Working Circle.

v) Non-Timber Forest Produce (Overlapping) Working Circle

vi) Old Teak Plantation Working Circle

vii) Wildlife (Overlapping) Working Circle

I. Selection Cum Improvement Working Circle:-

Total Area :- 9748.68 ha

Felling cycle :- 20 years

Felling series :- 5

Selection girth :- 1) Teak, ain, bija, shisham and haldu :- 120 cm.

2) Garari, lendia :- 45 cm.

3) Other timber species :- 90 cm.

Regulation of yield :- Yield will be regulated by area.

Demarcation :- Main felling coupes will be demarcated one year in advance of felling.

Treatment map :- Treatment map will be prepared by the Range Forest Officer. Treatment map will show the following areas.

Type A :- Protection areas

Type B :- Under stocked areas

Type C :- Group of young poles.

Type D1 :- Well stocked areas suitable for canopy removal.

Type D2 :- Remaining Well Stocked areas suitable for selection felling.

MARKING TECHNIQUE :-

A. In protection areas no felling will be done.

B. In under stocked areas all dead trees after retaining two per ha will be marked for felling.

C. Thinning marking in type C areas will be done to bring the average spacement equal to 1/3 rd of the average height of the crop. In plantations thinning will be done as per the quality classes and age.

Type D1 Areas :- The area will be canopy removed subjected to the following condition and will be planted with teak at a spacing of 2 m. x 2 m. The selection of ideal sites for the teak plantation has been left for the field staff. Following conditions will be adhered to.

a) All young to middle aged fruit bearing trees up to 20 trees/ha should be retained.

b) Young to middle aged trees of Semal, Khair, Rosewood and other superior miscellaneous species up to 20 trees/ha uniformly spread over the area should be retained.

c) No felling will be done on either side of Nallah, Stream and River beds up to 30 m.

d) The section size at a place will not exceed 20 ha.

e) A 20 m strip of natural forests will be retained on all sides of the section.

f) The plantation will be fire protected.

g) Superior planting stock will be planted.

Type D2 Areas :- All edible fruit and flower yielding trees of moha, char, tendu, aonla, chinch, sitafal, harra, bel and trees of kulu will be reserved from felling. All trees above selection girth and approach class will be enumerated, before marking, in 15 cms girth classes. The following trees will be marked for felling:-

(i) The percentage of selection trees to be marked for felling for various species groups has been worked out in regulation of yield. Fifty percent of the trees above exploitable girth will be marked for felling. Marking will start from the highest girth class trees and trees of less importance as described earlier.

(ii) All dead and malformed trees, after retaining 2 trees/ha will be marked for felling. A tree will be treated as malformed if it does not have a clean bole upto at least 2 m above the breast height.

(iii) All live high stumps will be marked for felling.

(iv) All but one vigorously growing coppice shoots per stool where the density is less will be retained.

(v) No sound tree will be removed unless it is sillviculturally available.

(vi) 50 % trees above selection girth shall be retained and uniformly spread over the whole area of the coupe. It will start from highest girth class and trees of less importance. Besides these principles the marking shall be done only when the trees are available silviculturally.

Marking Rules :- Marking will be done under the close supervision of the Range Forest Officer and will be verified by an Officer not below the rank of Assistant Conservator of Forests.

Cutting back operations :- These operations will be carried out departmentally in the year following the year of main felling.

Cleaning :- A cleaning operation will be carried out in the 6th year of main felling.

Thinning :- Thinning in plantation areas will be carried out at 10^{th} year, 15^{th} year and thereafter on a 10 years cycle. The first thinning will be mechanical. During first mechanical thinning trees in alternate diagonal lines will be removed. The subsequent thinnings will be silvicultural aiming at the spacing in congested crop equivalent to 1/3 of the average height of the stems.

II. AFFORESTATION WORKING CIRCLE :-

Total Area	:-	18344.17 ha
Felling series	:-	8
Choice of species	:-	Teak, Bija, Shisham, Ain, Semal,neem,bamboo and fodder grasses.
Planting Cycle	:-	20 years.
Rotation	:-	Not fixed.
Demarcation	:-	Main Afforestation coupes will be demarcated one year in advance of plantation.
Treatment map	:-	Treatment map will be prepared by the RFO.

Method of Treatment :- The primary object of management of these areas is to restore the soil fertility and increase the productivity of land. The species to be planted will depend upon the soil type, its depth and local requirement. The number of plants per/ha will be 1100 or less depending upon site and nature of species selected. No regular silvicultural system will be applied. The existing growth will be tended by suitable operations. The rooted stock present in the area which have been constantly hacked for firewood will be redressed properly to achieve the vigorous growth.

III. IMPROVEMENT WORKING CIRCLE :-

Total Area	:	69082.04 ha
Felling Cycle	:	20 years

Felling series : 30

Method of Treatment : The basic aim to constitute this working circle is to improve the quality and quantity of the growing stock.

I. Removal of dead, dying and diseased trees.

II. Thinning in congested patches.

III. Raising of plantation of teak and other economically important species at suitable patches upto 10 ha per coupe after removal of overwood.

IV. Planting of teak and other suitable economic important species in the understocked areas upto 10 ha per coupe.

IV. FODDER MANAGEMENT WORKING CIRCLE :-

A. PASTURE WORKING CIRCLE :-

Total Area : 9477.83 ha

Working series : 4

Choice of species : Seed broadcasting and tussock planting of superior fodder grasses like paunya (Isccoemum sulcatum), marvel(Andropogan annulatus), sheda (Isccoemum laxmum) etc. shall be taken up.

Working Cycle : 20 years.

Rotation : Not fixed.

Treatment map : Treatment map will be prepared by the RFO.

Method of Treatment : The main object of management of forest areas in this working circle will be provide grazing to maximum possible extent, consistent with preservation and improvement of pasture. Limitation of incidence of grazing and grazing closure to enable seeding and establishment of grasses is of paramount importance for the maintenance and improvement of the grazing grounds.

B. KURAN WORKING CIRCLE

Total Area :- 9301.30 ha

Working series :- 4

Choice of species :- Seeds/Tussocks of Sheda, Paonia, Mushan or Marvel

Working Cycle :- 20 years.

Rotation :- Not fixed.

Treatment map :- Treatment map will be prepared by the RFO

Method of Treatment : There will be four working series and each working series is divided into twenty coupes. Every coupe will be taken up for a special improvement operation every year. The coupe will be demarcated. There after the coupe will be thoroughly inspected by Range Forest Officer and a treatment map will be prepared.

V. NON TIMBER FOREST PRODUCE (OVERLAPPING) WORKINGCIRCLE

Total area :- 117173.83 ha.

Method of treatment :- The treatment to be given will be different for different types of minor forest produce.

Regulation of yield :- Yield will be regulated by area.

Tapping of Gum :- The kulu, dhawara and salai trees produce gum.

TAPPING RULES :-

Following are the main tapping rules :

i) The tapping period will be from November to May each year.

ii) Tapping will be confined to main bole of trees of gbh more than 90 cm only.

iii) Each tree will be tapped continuously for 3 years and will be given rest for next three years.

iv) No fresh blaze will be made on the partially healed up surface or old wounds.

v) The lowest row of blaze shall be at 1 m above ground level.

vi) Each blaze will be in a shape of parabola with 2.5 cm wide base.

vii) At the end, the height of the blaze shall not be greater than 12.50 cm.

REGENERATION :- Natural regeneration will be tended and supplemented by artificial regeneration 15 to 20 cm deep circular trench around tendu, salai and kulu will be made in current coupes so as to damage the root to get shoots from root suckers.

VI. OLD TEAK PLANTATION WORKING CIRCLE :-

Total Area : 1219.83 ha.

Felling Series :- 1

Method of Treatment :- The main objective of teak plantation was to have the teak crop with growth parameters comparable to those in the yield table. For this, it was essential to follow all silvicultural operations, prescribed in the previous working plan after taking plantations. But this could not be observed meticulously mainly due to paucity of funds, which resulted in poor growth than expected. The proportion of miscellaneous species has increased beyond limit. Therefore, to achieve the goal of the plantations to the greatest extent, the objectives of management are as follows.

I. To carry out thinning as per the yield table on the basis of age and site quality.

II. To improve the crop by carrying out required silvicultural operations so as to achieve growth parameters comparable to those in the yield table.

III. To cover thinning in all overdue plantations in the shortest possible time and to ensure thinning & other silvicultural operation in other plantations when they are due.

IV. To convert the existing uneven aged crop containing large percentage of inferior species into an even aged teak forest.

V. To obtain maximum sustained yield of teak timber of commercial value.

VI. Consistent with the above to utilize the maximum production capacity of forest.

Cutting back operations :- These operations will be carried out departmentally in the year following the year of first mechanical thinning. The operations consists of the following:-

I. Climber cutting over whole area of the coupe except the endangered & threatened species.
II. Felling all badly damaged or broken trees.
III. Cutting back of malformed advance growth of teak.
IV. Cutting back of valuable growth damaged during the felling.
V. Freeing young growth of teak and other valuable species from interference of bamboos and other inferior species.
VI. All stools will be cleared of felling debris.
VII. In eroded areas and areas liable to erosion, gullies and small nallas will be plugged with nearby debris or stones to check washing away of the soil and deepening and widening of the gullies and nallas.

Cleaning :- A cleaning operation will be carried out in the 5th year commencing from the year of first mechanical thinning.

I. All climbers will be cut over the whole are of the coupe, if necessary except endangered & threatened species .
II. Damaged and malformed sampling and coppice shoots will be cut back.
III. Multiple coppice shoots will be reduced to two or three per stool. Shoots to be retained should be most vigorous, well growth and well spaced. Persistent side branches will be cut 15 cm away from the plant without damaging the stem.
IV. Fast growing inferior species and bamboo interfering or likely to interfere with the reproduction of teak and other valuable species will be cut.
V. In thick patches of teak advance growth and established regeneration of other valuable species, a spacing between samplings to be retained, should vary from 2 meter to 2.50 meter depending on the height growth.
VI. In plantations of teak, weed growth may be cleared within a radius of 1 m from each surviving plant and intensive soil mulching carried out immediately after the rainy season is over.

Thinning :- Thinning in plantation areas will be carried out at 10^{h} year, 15th year and thereafter on a 10 years cycle. The first thinning will be mechanical. During first mechanical thinning trees in alternate diagonal lines will be removed. The subsequent thinnings will be silvicultural aiming at the spacing in congested crop equivalent to 1/3 of the average height of the stems.

VII. WILDLIFE (OVERLAPPING) WORKING CIRCLE :-

Total area : 117173.83 ha.

Provisions for conservation of wildlife have been prescribed.

MISCELLANEOUS REGULATIONS :-

DEMARCATION OF COUPES :-

i) Annual coupes will be demarcated by clearing 3 m wide lines and by erecting pillars or posts on the lines.

ii) Selected trees on the periphery will be given two coaltar bands and a serial number.

iii) Unworkable areas will be demarcated by giving two geru bands with a cross in geru colour between bands and a serial number on selected trees on the periphery.

MARKING TECHNIQUE :-

i) All trees to be felled will be given a geru band and will bear distinct hammer marks at both breast height and base.

ii) All valuable trees of gbh 45 cm and over and other species of girth over 60 cm at breast height will bear digit serial number both or breast height and base.

iii) Remaining trees will be given different series of serial numbers with coaltar.

DISPOSAL OF FOREST PRODUCE :-

It will be done as per the prescription embodied in the working plan.

IRREGULAR HARVESTING :- Removal of dead fallen firewood will be done. Felling of trees on fire lines will be carried out. Felling of trees for the purpose of growth study will be done.

MAINTENANCE OF BOUNDARIES :- The construction of RCC cairns of approved size and design will be started on the external boundary of the division. The works of 1/5th demarcation scheme will be followed for other boundaries.

FIRE PROTECTION :- Fire protection measures for different areas have been prescribed.

GRAZING :- Worked coupes in all working circles will remain closed for grazing for 5 years from the main felling.

SOIL AND MOISTURE CONSERVATION WORKS :- Continuous contour trenches, check dams and nala bunding in each working circle have been suggested.

ESTABLISHMENT :- Additional staff is required for the proper execution of the prescriptions of the plan.

LABOUR :- The present labour supply is inadequate.

CONTROL AND RECORDS :- Separate control forms have been prescribed for each working circle. **APPENDIX NO. XVIII**

COMPARTMENT HISTORIES :- Compartment history from Nos 1 to 5 will be maintained in the division and range offices in the given format. **APPENDIX NO. XVII**

PLANTATION AND NURSERY REGISTERS :- These will be maintained in the standard format given in volume-II. **(APPENDIX NO. XIX & XX.)**

DIVISIONAL NOTE BOOK :- It will be maintained in the standard format given in volume-II. (**APPENDIX NO. XXI.)**

FINANCIAL FORECAST AND COST OF THE PLAN.

FUTURE REVENUE :- The estimated revenue to be received in various years have been worked out and given in the chapter – XI of Part II

FUTURE EXPENDITURE :- The expenditure on the various works as per prescriptions of the plan have been worked out and given in the chapter - XI of part of this plan.

COST OF THE PLAN :- The total expenditure incurred on the preparation of this plan is difficult to account for because the part tree enumeration and writing of P.W.P.R. for Bramhapuri Forest Division was carried out by Deputy Conservator of Forests, Working Plan Division,

Amravati and the preparation of the final Draft plan has been completed by Deputy Conservator of Forests, Working Plan Division No.1, Chandrapur who is also preparing P.W.P.R. for Gadchiroli Forest Division therefore expenditure incurred can not be worked out separately for this plan.

---000---

I. ABBREVIATIONS USED IN THE PLAN

a.m.s.l.	Above mean sea level
A.C.F.	Assistant Conservator of Forests
b.h.	Breast height
C.A.I.	Current Annual Increament
Cft.	Cubic feet
CM.	Centimeter
Cm3	Cubic centimeter
Comptt.	Compartment
d.b.h.o.b.	diameter at breast height over bark
d.b.h.u.b.	diameter at breast height under bark
Dy.C.F.	Deputy Conservator of Forests
Dn.	Division.
F.D.C.M.Ltd.	Forest Development Corporation of Maharashtra Limited.
F.L.C.S.	Forest Labour Co-Operative Society
F.R.H.	Forest Rest House
F.S.	Felling Series
F.S.O.	Forest Settlement Officer
F.V.	Forest Village
F.Y.M.	Farm Yard Manure
F.Y.O.	First Year Operations
g.b.h.	girth at breast height
g.b.h.o.b.	girth at breast height over bark
g.b.h.u.b.	girth at breast height under bark
ha/Ha	hectare
IGF	Inspector General of Forests
IFA	Indian Forest Act.
Km	Kilometre
Kg	Kilogram
m.	Metre
Mm	Millimetre
M3/m3	Cubic-metre
M.A.I.	Mean Annual Increment
M.F.P.	Minor Forest Produce
M.V.S.S.	Maharashtra Van Sanshodhan Sanstha
P.B.	Periodic Block
P.F.	Protected Forests
P.P.O.	Pre Planting Operations
P.Y.O.	Preliminary Year Operations
P.W.D.	Public Works Department
R.F.	Reserved Forests
R.F.O.	Range Forest Officer
Rs	Rupees
S.C.I.	Selection-Cum-Improvement
Sq.	Square
Sq.km.	Square Kilometre
Spp.	Species
S.R.P.	State Reserved Police
S.Y.O.	Second Year Operations
Sr.No.	Serial Number
T.Y.O.	Third Year Operations
W.C.	Working Circle
IVth Y.O.	Forth Year Operations
Vth Y.O.	Fifth Year Operations

---000---

II. GLOSSARY OF LOCAL TERMS

Adjat species	Miscellaneous species
Bhatti	Local distillery for liquor production
Bidi	Hand made cigarette wrapped in tendu leaf
Bir	An area reserved to grow grass
Burad	A caste whose main occupation is to make Articles from bamboo
Doh	A deep pond in a river or stream
Geru	Red ochre or red earth
Ghani	Local crusher for oil extraction
Ghat	A road with a steep gradient
Gully	Water channel
Jigir	An estate conferred by the state in return for service
Jagirdar	The holder of jagir
Jimindari	An estate belonging to a zamindar
Jhiras	Temporary small wells dug in nalas during summer
Juar	A cultivated millet(Sorghum vulgares)
Kacha(roads)	Temporary(roads)
Kankar	Lime nodules
Karka	Whippy bamboo
Katha	Catechu
Kharif	Monsoon crop
Khasara No.	Serial number given to any portion of land entered in land records.
Khories	Valleys in between two hills or hillocks
Malguzari	Land tenure system which existed in Vidarbha.
Malki Land	Lands belonging to private individuals.
Mouza	A village area
Murum	A reddish hard soil
Myrabolons	Aonla,harra and beheda
Naka(Forest)	Barrier on road for checking forest produce in transit.
Nala	A water course
Nistar	Forest produce required for bonafide agricultural or domestic Purposes.
Nistar Patrak	Record of rights on Government Land.
Occupational-Nistar	The nistar granted to village craftsman i.e.Nistar mahars,blacksmiths,chamars etc.at concessional rate For their craft purposes.
Paidawar	Wild edible flowers, fruits or roots
Patwari	Village Officer(Sub-ordinate of Revenue Department)
P.C.No.	Patwari Circle Number
Pucca	Permanent Construction
Pulla	Bundles of cut grass
Rabi	Winter Crop
Rahadari	Transit
Raiyatwari	A form of land tenure,applied to land in raiyatwari tenure and to villagers.
Regur	Block cotton soil.
Rith	A deserted village site
Satkatha	Miscellaneous tree species
Seri-culture	Rearing silk/tussar worms.

LOCAL AND BOTANICAL NAMES OF PLANTS OCCURING IN BRAMHAPURI FOREST DIVISION

A . TREES

LOCAL NAME	BOTANICAL NAME	FAMILY
Achar	Buchanania lanzan	Anacardiaceae
Amaltas/Bahava	Cassia fistula,Linn	Caesalpiniaceae
Amta	Bauhinia malabarica,Roxb	do
Anjan	Hardwickia binata,Roxb	do
Apta	Bauhinia racemosa,Lamk	do
Aonla	Phyllanthus emblica	Euphorbianceae
Arjun	Terminalia arjuna	Combretaceae
Babul	Acacia nilotica Linn	Mimosaceae
Bud/Wad	Ficus bengalensis,Linn	Moraceae
Beheda	Terminalia bellirica,Gaertn	Combretaceae
Bel	Aegle marmelos(L)	Rutaceae
Bhirra	Chloroxylon swietenia	do
Biba/Bhilwa	Semecarpus anacardium,Linn	Anacardiaceae
Bija	Pterocarpus marsupium,Roxb	Fabaceae
Bistendu	Diospyros montana, Roxb	Ebenaceae
Bor/Ber	Zizyphus maurltiana,Lamk	Rhamnaceae
Chichwa	Albizia odoratissima,Roxb	Fabaceae
Dhaman	Grewia tiliifolia(vahl)	Tiliaceae
Dhaora	Anogeissus latifolia(R.Br.exDC)	Combretaceae
Dhoban/Satpuda	Dalbergia peniculata, Roxb	Fabaceae
Dikamali	Gardenia resinifera, Roth	Rubiaceae
Garari	Cleistanathus collinus,Roxb	Euphorbiaceae
Ghogar/papda	Gardenia latifolia Ait	Rubiaceae
Ghoti/Ghot	Zizyphus glaberrima (Sedgw)	Rhamnceae
Gongal	Cochlospermum religiosum	Cachlospermaceae
Haldu	Haldina cordifolia Roxb	Rubiaceae
Hingan	Balanites aegyptica (L)Del	Balanitaceae
Hiwar	Acacia leucophloea Roxb Willd	Mimosaceae
Hirda/Harra	Terminalia chebula Getz	Combretaceae
Imli/Chinch	Tamarindus indica	Caesalpinanceae
Jambhul/Jamaun	Syzigium cumini Linn	Myrtaceae
Kakad	Garuga pinnata Roxb	Burseraceae
Kala-umber	Ficus hispida	Moraceae
Kakai	Flacourtia indica (Burm.f)	Flacoutiaceae
Kamala	Mallotus philippensis	Euphorbiaceae
Karai	Miliusa velutina H.F.& Thoms	Anonaceae
Kalam	Mitragyna parviflora Roxb	Rubiaceae
Karanj	Pongamia pinnata(L)pierre	Fabaceae
Kateyen/Kasai	Bridelia retusa spreng	Euphorbiaceae
Kawith	Limonia acidissima Lorr	Rutaceae
Khair	Acacia catechu willd	Mimosaceae
Khirni	Manilcora hexandra Roxb	Sapotaceae
Kullu	Sterculia urens Roxb	Sterculiaceae
Kumbhi	Careya arborea Roxb	Lecythidiaceae
Kusum	Schleichera oleosa Lour Merr	Sapotaceae
Lasora/Bhokar	Cordia dichotoma Forst.f.	Boraginaceae
Lendia/sehna	Lagerstroemia parviflora Roxb	Lythraceau
Lokhandi	Ixora arborea Roxb	Rubiaceae
Maida-Lakri	Litsea glutinosa	Lauraceae
Medshing	Dolichandrone falcata Seem	Bignoniaceae
Moha/Mahuwa	Madhuca longifolia Koen	Sapotaceae
Mokha	Schrebera swietenoides	Aristolochiaceae
Moyen/mowai	Lannea coromandelica Hoult	Anacardiaceae
Neem	Azadirachta indica A.Juss	Meliaceae

Padar	Stereospermum suaveolens DC	Bignoniaceae
Pair	Ficus rumphii	Moraceae
Palas	Butea monosperma Lamk Tau	Fabaceae
Pangara	Erythrina variegata Linn	do
Papra	Holoptelea integrifolia	do
Rankela	Dillenia pentagyna	Magnoliaceae
Rohan	Soymida febrifuga(A.Juss)	Meliaceae
Sagwan	Tectona grandis Linn	Verbenceae
Saja/ain	Terminalia alata Heyne	Combretaceae
Salai	Boswellia serrata Roxb	Burseraceae
Semal	Bombax ceiba L	Bombaceae
Shisham	Dalbergia latifolia Roxb	Fabaceae
Shivan	Gmelina arborea Linn	Verbenaceae
Siras-black	Albizia lebbek L.willd	Mimosaceae
Siras-white	Albizia procera Roxb	do
Sitaphal	Annona squamosa L.	Annonaceae
Suriya	Xylia sylocarpa Roxb	do
Tendu	Diospyros melanoxylon Roxb	Ebenaceae
Tiwas/Tinsa	Ougenia oojeinensis Roxb	Fbaceae
Umbar/Gular	Ficus recemosa Linn	Moreaceae
Warang/Baranga	Kydia calycina Roxb	Malvaceae

B. SHRUBS AND HERBS

LOCAL NAME	BOTANICAL NAME	FAMILY
Aal	Moringa citrifolia(Lin)	Celeastraceae
Aghada	Achyranthus aspera(Linn)	Amartaceae
Akola	Alangium salvifolium(Thwaites)	Cornaceae
Ban rahar	Flemingia semialata(Roxb)	Fabaceae
Baibirang	Embelia ribes	Myrsinaceae
Bankapas/Rankapas	Thespesia lamps	Malvaceae
Bharati	Maytenus emarginata(Benth)	Celastraceae
Chind/Sindhi	Phoenix sylvestris Roxb	Palmae
Chipti	Desmodium pulchellum Benth	Fabaceae
Dhawai/Jilbili	Woodfordia fruticosa Kurz	Lythraceae
Dikamali	Gardenia resinifera Roth	Rubiaceae
Gurmukhi/Gursukri/ Gaturli	Grewia hirsuta	Tiliaceae
Gokhru	Trubulus terrestris,Linn	Zygoiphyllaceae
Harsingar/Kharsui	Nyctanthus arbortristis	Oleaceae
Jine	Leea crispa	Leeaceae
Ranbhendi	Dodonea viscosa	Spindaceae
Koril	Petalidium barlerioides nees	Acanthaceae
Kasterua	Hygrophila auriculata k.Schum	Acanthaceae
Kharoti	Grewia hirsuta vahl.	Tilianaceae
Kudursi	Bridelia hamiltoniana wall	Euphorbiaceae
Kudmudi	Gardenia gummifera Linn	Rubiaceae
Kuda	Holarrhena pubescens(Buch,Ham)	Apocynaceae
Kala kuda	Wrightia tinctoria	do
Kuchala	Strychnos nuxvomica	Strychnaceae
Lokhandi	Ixora arborea Roxb	Rubiaceae
Morarphal	Helicteres isora Linn	Steculiaceae
Maruadona	Carvia callosa Ness	Acanthaceae
Nirmali	Strychnos potatorum	strychnaceae
Neel	Indigofera tinctoria	Papilionaceae
Phetra-safed	Gardenia turgida Roxb	Rubiaceas
Phetra-kala	Tamilnadia uliginosa(Retz)	do
Tarwad	Cassia auriculata	Caesalipiniaceae
Tarota	Cassia tora Linn	do
Thuar	Euphorbia tirucalli Linn	Euphorbiaceae
Warangal	Celastrus paniculata Willd	Celastraceae

C. GRASSES AND BAMBOOS

LOCAL NAME	BOTANICAL NAME	FAMILY
Ghonad	Themeda triandra	
Bamboo-karka	Dendrocalamus strictus(Roxb)	Gramineae
Bamboo-katang	Bambusa arundinacea(willd)	do
Bhurbhusi	Eragrostis tenella(Roem & Schulf)	do
Godhel	Eragrostis interapta	do
Katanbahari	Aristida funiculata(Trin. et.Rupa)	do
Kunda/sum	Eulaliopsis binata(Retz.)(Mark)	do
Kusal/Speargrass/ Diwartan	Heteropogon contortus(Linn)Beau	do
Marvel-small	Dicanthium annulatum(Forsek) Staff	do
Marvel-big	Dicanthium aristatum(poir)	do
Mushan	Iseilema laxum (Hack)	do
Paonya	Sehima sulcatum (Hack)Acamus	do
Sheda	Sehima nervosum (Staff)	do
Tikhadi	Cymbopogon martinii(Roxb)Watson	do
Ukari	Iseilema prostratum Anderss	do
Chir	Imperata Officinalis	do

D. CLIMBERS

LOCAL NAME	BOTANICAL NAME	FAMILY
Bandke	Dendropthoe falcata(Linn)	Loranthaceae
Chilar	Caesalpinia decapetala(Roxb)	Caesalpiniaceae
Chilati	Mimosa hamata(Willd)	Mimosaceae
Chilati badi	Acacia torta(W & A)	do
Dhimarval	Celastrus paniculata(Willd)	Celastraceae
Dudhi/Nagvel	Cryptolepis buchanani(Roem)	Periplaceae
Eroni	Zizyphus oenoplia(Linn)	Rhamnaceae
Gunj	Arbus precatorius(Linn)	Fabaceae
Gulvel	Tinospora cordifolia(Willd)	Menispermaceae
Gurar,Nasvel	Millotia extensa(Baker)	Papilionaceae
Kajkuri	Mucuna pruriens(L)	Fabaceae
Khadyanag	Gloriosa superba	Liliaceae
Khobarvel	Hemidesmus indicus(Linn)	Periplieonaceae
Kukuranji	Calycoipteris floribunda	Combretaceae
Mahulvel	Bauhinia vahlii(Wand A)	Caesalpiniaceae
Musalikand	Dioscorea pentaphylla(Linn)	Dioscoraceae
Papri,Lalvel	Ventilage denticulata(Willd)	Rhamnaceae
Palasvel	Butea superba(Roxb)	Fabaceae
Piwarvel	Combretum ovalifolium(Roxb)	Combretaceae
Ramdaton	Smilax macrophylla(Roxb)	Liliaceae
Shataori	Asparagus recemosus	

E . PARASITES

Amaraval	Cuscuta reflerxa(Roxb)	Cuscutaceae

F . EPIPHYTES

Vanda	Vanda cesellata(Roxb)	Orchidaceae

G . ENDEMIC/THREATENED PLANT SPECIES

Alichettu	Eonymus godaverensis	Celastraceae

-----0000-----

COMMON AND ZOOLOGICAL NAMES OF THE ANIMALS AND BIRDS COMMONLY FOUND IN BRAMHAPURI FOREST DIVISION.

A . ANIMALS

COMMON NAME	SCIENTIFIC NAME
Tiger	Panthera tigris
Panther	Panthera pardus
Hyaena	Hyaena hyaena
Wild dog	Cuon allpinus
Wolf	Canis lupus
Jackal	Canis aureus
Fox	Vulpes bengalens
Jungle cat	Felis chaus
Bison	Bos gaurus
Sambhar	Cervus unicolor
Cheetal	Axis axis
Nilgai	Boselaphus tragocamelus
Wild boar	Sus cristatus
Sloth bear	Melursus ursinus
Barking deer	Muntiacus muntjak
Common Langur	Presbytis entellus
Flying squirrel	Petaurista petaurista
Porcupine	Hystrix indica
Hare	Lepus ruficaudatus

B . BIRDS

COMMON NAME	SCIENTIFIC NAME
Painted sandgrouse	Pterocles indicus
Common sandgrouse	Pterocles exustus
Pea fowl	Pavo cristatus
Grey jungle fowl	Gallus sonneratii
Painted Partridge	Francolinus pictus
Grey partridge	Francolinus pondicerianus
Blackbreasted quail	Couturnix coromandelicus
Red spour fowl	Galloperdix spadicea
Crane	Grus antigone
Spotted bill duck	Anas poecillorhyncha
Pigeon	Treron phoenicoptera
Dove	Streptopelia spp.
Cotton teal	Nettapus coromandelienus
Whistling teal	Dendrocygna javanica

C . ENDANGERED WILDLIFE

ANIMALS

Bison
Wolf
Panther
Sloth bear
Tiger

BIRDS

Pea fowl

---000---