

# EXECUTIVE SUMMARY OF MANAGEMENT PLAN

- Formation of Central Chanda Forest Project Division- 1969
- Headquarter at Ballarshah

## **1. GENERAL:-**

- Area taken over from Forest Department vide Government Resolution No.
  - i) G.R. No. FDC/1074/64746/F-5 dated 27<sup>th</sup> June 1978, Area 25379.864 ha.
  - ii) G. R. No. FLD/1087/ 2462/iz-dz-342/F2 dated 06/09/1990, Area 3587.544 ha. and
  - iii) G. R. No. 2006/C.No.32/F-5 Dt. 11 October, 2007, Area 2247.224 ha.
- Area handed over to Forest Department as per G.R. No. iv) FDC-2015.P.K.-125/ F-3 Dt. 12.06.2015 Area 321.725 ha. for Forest House and Biodiversity Park.

## **2. The total area of the Management Plan is 31102.257 ha.**

- Total Area Covered : 31102.257 ha.
- Period of plan : 2016-17 to 2025-26
- Total No. of Ranges : 4
- Total No. of Rounds : 16
- Total No. of Beats : 32
- Total No. of Compartments : 119

## **3. VISION OF MANAGEMENT PLAN :**

The National Forest policy of 1988 has been the guiding principal to decide the general objects of management and these are mentioned here as under :-

- (i) To preserve forest cover on steep hill slopes, along the nala banks and water courses and to prevent soil erosion.
- (ii) To enrich the growing stock in the natural forests and to restock all the under stocked and degraded forests, to achieve normality of growing stock in shortest possible time.
- (iii) To increase the productivity of forests by using improved technology and to maintain the same on sustained yield basis.
- (iv) To meet the requirement of small timber, fuelwood, fodder and minor forest produce of the rural and tribal population on top priority.
- (v) To increase the production of minor forest produce and to manage the same scientifically to utilize the potential to the maximum possible extent on sustained basis.
- (vi) To conserve and protect wildlife.

#### 4. THE FOREST

- According to classification of Forest Types by Sir H.G. Champion and Shri. S.K.Seth. the forest tract belongs to sub group Southern Indian Tropical Moist Deciduous Forest “3B/C1b” and “5A” Southern Tropical Dry Deciduous Forest

#### ❖ Sub types-

- Group 3 Southern Tropical moist deciduous forests
  - 3B/c 1b South Indian moist deciduous forests
  - 3B/c2 Southern Tropical dry deciduous forests
- Group 5 A Southern Tropical dry deciduous forests
  - 5A/c1b Southern Tropical dry deciduous Teak forest
  - 5A/c3 Southern Tropical dry mix deciduous forest

**Predominant Species** - Teak, Ain, Bija, Dhawada, Lendia, Garadi, Tendu, Salai, Mowai, Moha, Kalam, Khair, Bamboo etc.

### PAST SYSTEM OF MANAGEMENT

#### 5. Balki plan for the period 2005-06 to 2014 - 15

The Management Plan for the Central Chanda Forest Project Division was prepared by Shri G. S. Balki, the Divisional Manager for the period 2005-06 to 2014-15 and implemented. Total area of 28967.408 ha was allocated to following working circles.

S.N	Name of the Working circle	Area (in ha)
1	Teak Plantation Management Working Circle	8807.275
2	Teak Plantation &Reboisement Working Circle	8311.198
3	Improvement Working Circle	2982.206
4	Afforestation Working Circle	8013.656
5	Miscellaneous Working Circle	853.073
	Total	28967.408
7	Bamboo Production (over lapping) Working Circle	9423.000
8	Wild Life Management (over lapping) Working Circle	28967.408

#### 6. TEAK PLANTATION MANAGEMENT WORKING CIRCLE

##### 6.1 Consists of following types of areas.

- A)The old successful and established teak plantations fit for Silvicultural Thinning and the anticipated growth is more or less uniform having series of annual age classes.
- B)The miscellaneous crop of coppice origin existing in these plantations as a second storey.
- C)Total Area 8807.275 Ha.

## **6.2 Goals and Objectives of Management.**

- To carry out tending operations to produce good quality and big sized teak timber.
- To get intermediate yield and revenue.
- To carry out Thinning as per the Yield Table on the basis of age and Site Quality.
- To improve the crop by carrying out required silvicultural operations so as to achieve growth parameters comparable to those in the yield table.
- To obtain maximum sustained yield of teak timber of commercial value.

## **7. TEAK PLANTATION & REBOISEMENT WORKING CIRCLE**

### **7.1 Constitution :**

- (A) Un-tackled portion of natural Standing crop that is suitable for raising teak plantations after removal of over wood.
- (B) Teak plantations raised between year 2002 and 2014 rains that require further tending operation.
- (C) Total Area 8311.198 ha.

### **7.2 Objectives of Management :**

- To enhance productivity of the area by converting less valuable forest into valuable Teak stand by following improved technology.
- To convert existing uneven aged forest to even aged Teak forest.
- To provide employment to the local people in remote areas.

## **8. IMPROVEMENT WORKING CIRCLE**

### **8.1 Constitution :**

- (i) Area of linear strips retained as natural surround of earlier plantation and un-worked areas that need proper tending with density varying from 0.4 to 0.6 Crop is mainly of miscellaneous species.
- (ii) Partially successful areas tackled after 1987 as under planting of Teak without removal of over wood and where growth of the established teak plants were encouraged by removing over wood tree cover and
- (iii) Area of linear strip near nala boundary.
- Area having adequate regeneration and the young crop suppressed that requires removal of over head tree cover. Total area allotted to this working circle was 2982.206 ha.

### **8.2 Goals and Objectives of Management :**

- To improve the forest in terms of composition and density.
- To promote natural regeneration of various species.

- To maintain biodiversity.
- To remove dead, dying and diseased trees with a view to facilitate establishment of natural regeneration of important species.

## 9. AFFORESTATION WORKING CIRCLE

A) Includes Failed plantation areas fit for the plantation of miscellaneous / local species accounts for an area of 8013.656 ha.

### 9.2 Objectives of Management :

- To maintain the biological diversity of forests by introducing mixture of species & restore eco- balance.
- To check soil erosion and improve moisture regime.
- To reclaim the area by intensive soil and moisture conservation works and afforestation works to enhance the productivity through artificial regeneration consisting mainly the indigenous species of small timber, firewood and fodder value to meet the local demand

## 10. MISCELLANEOUS WORKING CIRCLE

The areas which could not be covered in any working circles, since the areas were diverted to other activities such as (a) Water bodies (b) Roads (c) Buildings (d) Depots are included in miscellaneous working circle.

### 10.2 Objectives of Management :

- To maintain existing buildings, roads, Jungle and sale depots.
- The existing depots are maintained and will be expanded as per requirement and demand.
- Roads will be maintained for extraction of forest produce as well as for intensive patrolling of forest areas for effective protection.
- Culverts and small bridges will be maintained for effective communication.
- To collect quality Teak seed from seed production areas.

## 11. BAMBOO PRODUCTION (OVER LAPPING) WORKING CIRCLE

This working circle includes all the areas where bamboo, natural or planted, was silviculturally available for working.

This was an overlapping working circle and included following areas.

A. Naturally regenerated bamboo areas = 9423.000 ha.

## 12. WILD LIFE MANAGEMENT (OVER LAPPING) WORKING CIRCLE

Animals commonly found in the tract are as under :-

a) Carnivore- Tiger, Panther, Hyena, Wild dog, Wolf, Jackal, Fox and Jungle cat.

- b) Herbivore- Bison, Sambar, Cheetal, Nilgai, Barking deer, Wild boar, Sloth bear, four horned antelope and Chinkara.
- c) Rodents- Flying squirrel, three striped palm squirrel, Porcupine and Hare.
- d) Birds- Painted sand grouse, Common sand grouse, peafowl, Grey jungle fowl, Painted partridge, Grey partridge, Jungle bush quail, Black breasted quail, Indian bustard quail, Indian button quail, Red spur fowl, Crane, spotted bill duck, Pigeon, Dove, Cotton teal and Whistling teal.

### **FUTURE MANAGEMENT DISCUSSED AND PRESCRIBED**

#### **14. BASIS OF PROPOSALS**

- The National forest Policy of 1988 has been the guiding principle to decide the general objectives of management of the new management plan.
- The new policy has emphasized the need for environmental stability as the prime objective.
- The general objectives of management are in accordance with the basis of the principles laid down in the National Forest Policy and the functions which forests have to perform as per State Government's Orders, the objectives of scientific management, the rejuvenation of growing stock depleted due to heavy grazing and illicit cutting.

#### **Working Circle wise Allocation of Area**

S.N.	Working Circle	Total Area (Ha.)
1	Teak Plantation Management Working Circle	11505.454
2	Teak Plantation Reboisement Working Circle	3105.000
3	Improvement Working Circle	12201.228
4	Afforestation Working Circle	3259.000
5	Protection Working Circle	328.500
6	Miscellaneous Working Circle	464.078
7	Planting Stock Working Circle	238.997
	<b>Total</b>	<b>31102.257</b>
7	Bamboo (Overlapping) Working Circle	11425.000
8	Wildlife Management (Overlapping) Working Circle	<b>31102.257</b>
9	Non-Timber Forest Produce (overlapping) Working Circle	<b>31102.257</b>
10	Soil and Water Conservation Management (overlapping) Working Circle	<b>31102.257</b>

Range wise and Working Circle wise Distribution of Area

S. N.	Name of Working Circle	Zaran	Kanhargaon	Tohogaon	Dhaba	Total
1	Teak Plantation Management Working Circle	2100.329	4957.791	2780.361	1666.973	<b>11505.454</b>
2	Teak Plantation Working Circle	955.000	935.000	630.000	585.000	<b>3105.000</b>
3	Improvement Working Circle	4120.279	2959.498	2132.230	2989.221	<b>12201.228</b>
4	Afforestation Working Circle	1100.000	690.000	884.000	585.000	<b>3259.000</b>
5	Protection Working Circle	80.000	5.000	122.000	121.500	<b>328.500</b>
6	Miscellaneous Working Circle	298.203	21.375	9.500	135.000	<b>464.078</b>
7	Planting Stock Working Circle	72.837	123.160	31.000	12.000	<b>238.997</b>
	<b>Total</b>	<b>8726.648</b>	<b>9691.824</b>	<b>6589.091</b>	<b>6094.694</b>	<b>31102.257</b>
7	Bamboo (Overlapping) Working Circle	3430.000	4670.000	2010.000	1315.000	<b>11425.000</b>
8	Wildlife Management (Overlapping) Working Circle	8726.648	9691.824	6589.091	6094.694	<b>31102.257</b>
9	Non-wood Forest Produce (overlapping) Working Circle	8726.648	9691.824	6589.091	6094.694	<b>31102.257</b>
10	Soil and Water Management (overlapping) Working Circle	8726.648	9691.824	6589.091	6094.694	<b>31102.257</b>

## 15. TEAK PLANTATION MANAGEMENT WORKING CIRCLE

**GENERAL CONSTITUTION:-**Successful Teak plantations raised by Forest Department & F.D.C.M. Ltd up to 2014 which are fit for thinning are allotted to this Working Circle. Total area allotted to this Working Circle is **11505.454 ha.**

**The distributions of the areas of this working circle into various ranges are as under.**

S.N.	Name of the Range	Total Area of Range	Area of the W.C. in ha	% of the area of the Range	% of the area of the Division
1	Zaran	8726.648	2100.329	24.07	6.74
2	Kanhargaon	9691.824	4957.791	51.15	15.90
3	Tohogaon	6589.091	2780.361	42.20	8.92
4	Dhaba	6094.694	1666.973	27.35	5.36
	<b>Total</b>	<b>31102.257</b>	<b>11505.454</b>		<b>36.99%</b>

### **15.1 GENERAL CHARACTER OF THE VEGETATION :**

Area allotted to this Working Circle is of successful teak plantation having survival percentage more than 50%. This area consists of Teak crop intermingled with miscellaneous crop in patches. Density varies from 0.6 to 0.8 and Site Quality varies from II, to III and rarely IV in some areas. The crop is mostly young and in patches miscellaneous species & Bamboo are dominant over teak.

**15.2 GOALS AND OBJECTIVES OF MANAGEMENT:** Following are the objects of managements.

- (i) To carry out tending operations to produce good quality teak timber.
- (ii) To get intermittent yield and revenue.
- (iii) To carry out thinning as per the Yield Table on the basis of age and site quality.
- (iv) To improve the crop by carrying out required silvicultural operations so as to achieve growth parameters comparable to those in the Yield Table.
- (v) To obtain maximum sustained yield of teak timber of commercial value.
- (vi) To meet the market demand of poles, small timber and firewood.

### **15.3 METHOD OF TREATMENT :**

First thinning will be carried out in 10<sup>th</sup> year of planting and second thinning will be carried out at 15<sup>th</sup> year of planting. Second and subsequent thinning in teak plantation will be carried out at an interval of 5 year up to 70 year as per the revised instructions for thinning in Teak Plantation vide Managing Director letter No.PLN/05/F-III/2874, Nagpur dated 02/09/1999.

#### 15.4 ROTATION :

The rotation period of Teak in F.D.C.M. Ltd is fixed at 80 years vide Managing Director's Letters No.PLN/11/2004-05/984, Nagpur, dated 2.06.2004. Planting by Teak Stumps will be done after final felling at spacing of 2m x 2m.

#### 15.5 SUBSIDIARY CULTURAL OPERATIONS :

The following operations will be carried out in the year following the year of thinning as per requirement.

- (i) Worked area will be protected from fire.
- (ii) Felling of badly damaged or broken trees.
- (iii) Cutting back of malformed advance growth of teak.

#### 16. TEAK PLANTATION REBOISEMENT WORKING CIRCLE

**16.1 GENERAL CONSTITUTION :** Un-tackled portion of natural Standing crop suitable for raising Teak Plantations after removal of over wood or failure patches of Teak Plantations.

The area is 3105.000 Ha.

##### **Distribution of Area into various ranges.**

S.N.	Name of the Range	Total Area of Range	Area of the W.C. in ha	% of the area of the Range	% of the area of the Division
1	Zaran	8726.648	955.000	10.94	3.06
2	Kanhargaon	9691.824	935.000	9.65	3.00
3	Tohogaon	6589.091	630.000	9.56	2.02
4	Dhaba	6094.694	585.000	9.59	1.88
	<b>Total</b>	<b>31102.257</b>	<b>3105.000</b>		9.98%

#### 16.2 GENERAL CHARACTER OF THE VEGETATION :

- The forest area allocated to this working circle belongs to Southern Tropical Moist as well as dry deciduous.
- Site quality II, II/III, III and III/IV. Site Quality IV also occurs in this division.
- Teak is predominant species with its common associates like Bija, Ain, Haldu, Kalam, Dhawda, Mowai, Khair, Garadi, Anjan, Bhirra, Lendia, Char and Moha&Tendu.
- Density varying from 0.5 to 0.8.

#### 16.3 SPECIAL OBJECTS OF MANAGEMENT :

- To enhance productivity of the area by converting less valuable forest into valuable Teak stand by following improved technology.
- To convert existing uneven aged forest to even aged Teak forest.
- To provide employment to the local people in remote areas.



#### 16.4 METHOD OF TREATMENT :

The Silvicultural system of "Conversion to uniform system with supplemental artificial regeneration of genetically superior Stock" as suggested by Government of India shall be adopted. The broad prescriptions for over wood removal for raising Teak Plantation are as under and are in consonance with the guidelines of Government of India.

- (i) All young to middle aged fruit bearing trees at least 20 Trees per ha will be retained.
- (ii) Young to middle aged trees of Semal, Khair, Rosewood and other superior miscellaneous species having medicinal values at least 20 trees per ha uniformly spread over the areas will be retained.
- (iii) No felling will be done on either side of Nallas, Streams, and River banks up to a distance of 20 meters.
- (iv) The section size at a place should not exceed 20 ha.
- (v) 20m wide strip of natural forest will be retained around a section.
- (vi) Effective measures will be adopted to protect the plantation from fires for all times to come.
- (vii) Improved Planting stock will be used in order to increase the productivity of the area.
- (viii) The detailed instructions for over wood removal are given in the **Appendix No. XX** of Volume-II.

#### 16.5 METHOD OF EXECUTING FELLING/ WORKING :

Working in the Teak Plantation working circle will be carried out as per the instructions received from the office of the Managing Director F.D.C.M. Ltd. Nagpur vide letter No. PLN-26/(2001-02) 5154 dated 4-2-2002, is given in the **Appendix No. XX** of Volume-II.

- **Demarcation of Coupe-** Coupe line of 20 mtr. wide strips of natural forest.
- **Demarcation of Section-** Section line of 5 mtr. wide strip of natural forest.
- **Preparation of Grids-** Grids of size 100m x 100m (1 ha.)
- **Unworkable Area –**
  - 1) Area of site quality IV
  - 2) Water logged area
  - 3) Rocky area
  - 4) Eroded area
  - 5) Steep slopes
  - 6) Areas having crop girth less than CCG
- **Enumeration-** 100% trees above 15 cm
- **Basal Area -** Basal Area in each grid will be measured by using wedge prism of suitable BAF (Basal Area Factor) or computed by summing up the cross sectional area of the individual trees based on over bark girth measurements.
- **Crop Girth -**  $\text{Crop girth} = 2 \times (\pi \times B/N)^{1/2}$   
Crop girth in cm = 250 x square root of (B/N)  
Where B = Basal Area, N = Number of trees in each grid (1 ha.)

Advanced growth will not be considered while finding basal area and number of trees

Advanced Growth      Girth upto 30 cm for site quality III

Girth upto 45 cm site quality II/III and II

Girth upto 60 cm site quality I/II and I

## 6. 6. SUBSIDIARY SILVICULTURAL OPERATIONS:

Operation will be carried out in the plantation already raised and to be raised during this plan. Cleaning operations will be carried out during 4<sup>th</sup> and 7<sup>th</sup> year as per the standard instructions.

## 6. 7 OTHER REGULATIONS :

- i) Fire protection measures will be carried out in plantations.
- ii) The area planted will be closed for grazing for 5 years period.

## 17. IMPROVEMENT WORKING CIRCLE

### 17. 1 GENERAL CONSTITUTION :

This working circle constitutes the following areas :-

- (i) Area of linear strips retained as natural surround of earlier plantation and un- worked areas that need proper tending. Density varying from 0.4 to 0.6 and crop is mainly of miscellaneous species.
- (ii) Partially successful areas tackled after 1987, as under planting of Teak, without removal of over wood and where growth of the established teak plants will be encouraged by removing over wood tree cover and
- (iv) Area of linear strip near nala boundary that need proper tending. Crop is mainly of miscellaneous species.
- (v) Area having adequate natural regeneration.

Total area allotted to this working circle is 12201.228 ha. The distribution of these areas into various ranges are as under.

S.N.	Name of The Range	Total Area of Range	Area of the W.C.in ha	% of the area of the Range	% of the are of the Division
1	Zaran	8726.648	4120.279	47.21	13.21
2	Kanhargaon	9691.824	2959.498	30.54	9.49
3	Tohogaon	6589.091	2132.230	32.36	6.84
4	Dhaba	6094.694	2989.221	49.04	9.61
	<b>Total</b>	<b>31102.257</b>	<b>12201.228</b>		<b>39.22%</b>

### 17. 2 GENERAL CHARACTERS OF THE VEGETATION :

Area allocated to this working circle are mainly linear strips surrounding Teak Plantation having density between 0.4 to 0.6 with all India site quality varying from II, II/III, & III/IV and partly under stocked. Most of the areas consist of miscellaneous crop with density above 0.4

Predominant species are, Teak, Bija, Ain, Haldu, Dhawada, Kullu, Mowai, Shisham, Khair, Anjan, Garadi, Bherra, Lendia etc. along with sparse teak

In successful and partial successful teak plantations, along with teak, Ain, Dhawda, Anjan, Bherra, Garadi, Surya, Sehana, Mowai species also exist as secondary growth. The density of the crop varies between 0.4 to 0.6 and all India site quality varies from III to IV.

Crop is near to maturity and the regeneration of principal species is adequate but is suppressed due to mature top tree canopy. The forests allotted to this working circle are in a degraded stage and require improvement.

**17.3 OBJECTIVES OF MANAGEMENT:** Following will be the objects of management.

- (i) To improve the forest in terms of composition and density.
- (ii) To promote natural regeneration of various species.
- (iii) To maintain biodiversity.
- (iv) To remove dead, dying and diseased trees with a view to facilitate establishment of natural regeneration of important species.

#### **17.4 METHOD OF TREATMENT :**

**Type A Area :-** Protection Areas, No marking will be done in such areas. However seed sowing of Neem, Maharukh etc. will be carried out.

**Type B Area :-** Under stocked areas.

- i) Removal of dead, dying, diseased and crooked trees.
- ii) All high live stumps shall be cut back.
- iii) Enrichment of sizable gap with plantation of Teak, Khair, fast growing species like subabul, and other medicinal plant species etc. or any other suitable species feasible. The plantation of Bamboosa balcooa shall be taken where irrigation facility is available.

**Type C Area :-**

- i) The advance growth up to the extent of 0.50 ha. and above will be demarcated and thinning will be carried out to a spacing of one third of the top height of healthy poles, intended to be retained.
- ii) Removal of dead, dying, diseased and crooked trees.
- iii) All high live stumps shall be cut back.
- iv) Subsidiary cultural operations such as cut back operation, cleaning etc.

**Type D Area:-**

- i) These are well stocked areas with miscellaneous species. where valuable misc. trees occur. The trees with girth more than harvesting girth prescribed in Management Plan will be marked for felling.

## 18. AFFORESTATION WORKING CIRCLE

### 18.1 GENERAL CONSTITUTION :

- 1 Tackled and un-tackled area, of density below 0.4
- 2 Area fit for Plantation for miscellaneous species and Medicinal Plants.
- 3 Failed plantation areas fit for the plantation of miscellaneous / local species accounts for an area of 3259.000 ha. are allocated to this working circle.

#### Range wise distribution of areas :

S.N.	Name of the Range	Total Area of Range	Area of the W.C. in ha	% of the area of the Range	% of the are of the Division
1	Zaran	8726.648	1100.000	12.61	3.53
2	Kanhargaon	9691.824	690.000	7.12	2.21
3	Tohogaon	6589.091	884.000	13.42	2.83
4	Dhaba	6094.694	585.000	9.59	1.88
	<b>Total</b>	<b>31102.257</b>	<b>3259.000</b>		<b>10.47%</b>

### 18.2 GENERAL CHARACTER OF THE VEGETATION :

- Most of the areas are degraded blanks or under stocked with low density having stunted tree growth of Rohan, Bherra, Anjan, Garadi, Khair, Ain, and rooted stock of Ain, Bija, and other miscellaneous species.
- The rooted stock is also depleted in the area.
- Soil is eroded and nutritionally deficient.
- Vegetation in such areas is mainly bushy in which shrubs like Dikamali, Jilbili, Kuda, Kharata, Bharati, Kharasali and Lokhandi predominate.

### 18.3 SPECIAL OBJECTIVES OF MANAGEMENT :

- To maintain the biological diversity of forests by introducing mixture of species & restore eco- balance.
- To check soil erosion and improve moisture regime.
- To reclaim the area by
  - a. Intensive soil and moisture conservation works.

b. Afforestation works to enhance the productivity through artificial regeneration by mainly medicinal plants, the indigenous species of small timber and suitable species of Bamboo including Bamboosa balcooa.

- To ensure maximum land utilization so as to generate additional revenue and employment.
- To enlist participation of local communities in order to develop awareness regarding medicinal plants, their cultivation, harvesting and marketing.

#### **18. 4 METHOD OF TREATMENT :**

The primary object of management of these areas is to restore the soil fertility and increase the productivity of land. Therefore, soil and moisture conservation works will be taken up and the areas will be afforested with suitable indigenous species of medicinal value as well as non-wood forest produce. The species to be planted will depend upon the soil type, its depth and local requirement. The following operation will be carried out.

- Removal of dead and dying trees as a part of hygienic operation.
- Tending of coppice growth, if any with preference to fruit trees and important species.
- Intensive soil and moisture conservation works will be carried out in the entire area.
- In Ex-situ conservation, plantation of medicinal plants and local species will be carried out as per the site requirement.

#### **19. PROTECTION WORKING CIRCLE**

##### **19. 1 GENERAL CONSTITUTION OF THE WORKING CIRCLE :**

Unworkable areas on account of reasons such as steep undulating slopes, rocky and refractory sites, nalla banks, river banks & encroachments etc. are included in this working circle. The extent of area of this working circle is 328.500 ha. The details are as under.

- Un-workable areas on account of steep slopes, rocky & refractory sites, nala banks, river banks accounts for an area of 318.500 ha
- Encroachment areas accounts for an area of 10.000 ha

Total area of this working circle is 328.500 ha. The distribution of the areas of this working circle into various Ranges are as under.

<b>S.N</b>	<b>Name of the Range</b>	<b>Total Area of Range</b>	<b>Area of the W.C. in ha</b>	<b>% of the area of the Range</b>	<b>% of the are of the Division</b>
1	Zaran	8726.648	80.000	0.92	0.26
2	Kanhargaon	9691.824	5.000	0.05	0.02
3	Tohogaon	6589.091	122.000	1.85	0.39
4	Dhaba	6094.694	121.500	1.99	0.39
	<b>Total</b>	<b>31102.257</b>	<b>328.500</b>		<b>1.05%</b>

## **19.2 GENERAL CHARACTERS OF THE VEGETATION :**

- The forest areas allocated to this working circle are rocky and refractory type besides area under encroachment.
- It consists of degraded blanks of rocky patches. Area needs intensive soil and moisture conservation works supplemented by direct seed sowing.
- The forest areas on the banks of nala, river and tanks having site quality varying from II to IV with density varying from 0.6 to 0.8 with a good growth of Teak and superior misc. species may be seen. Plenty of these areas need protection and hygienic cleaning. These areas will be supplemented by direct seed sowing as per site requirement.
- Encroachment areas are deprived of any vegetation requires artificial regeneration with suitable local species.

## **19.3 SPECIAL OBJECTIVES OF MANAGEMENT :**

- To protect the available crop from any further deterioration.
- To reclaim this area by adequate soil and moisture conservation works along with seed sowing.
- To Protect vegetative cover along the nala and river banks and to minimize further erosion and to keep forest belt intact around water bodies.
- To reclaim encroachment areas and to prevent any further encroachment.
- To ensure maximum land utilization so as to generate additional revenue and employment by conservation of medicinal plants.
- To enlist participation of local communities in order to develop awareness regarding medicinal plants, their cultivation, harvesting and marketing.

## **19.4 METHOD OF TREATMENT :**

- The primary object is to protect available crop from further deterioration.
- To restore the soil fertility, to check further soil erosion by intensive soil and moisture conservation works along with the suitable tending operation.
- As area allotted to this working circle is unworkable due to various reasons.
- No harvesting work will be carried out as area is unworkable.
- Area will be completely protected from fire, grazing & illicit cutting etc.
- Soil & moisture conservation work like continuous contour trenches, gully plugging and Nalabunding.
- Seed sowing on trenches of suitable local indigenous species such as Neem, Khair, and Babul including species of medicinal plants and non-wood forest produce.

## 20. MISCELLANEOUS WORKING CIRCLE

### 20.1 Constitution :

- The areas which could not be covered in any working circles, since the areas are diverted to other activities such as (a) Water bodies (b) Roads (c) Buildings (d) Depot are included in miscellaneous working circle.
- The total area under this working circle is 484.578 ha.

Distributions of the area of this working circle into various Ranges are as under.

S.N.	Name of the Range	Total Area of Range	Area of the W.C. in ha	% of the area of the Range	% of the are of the Division
1	Zaran	8726.648	298.203	3.42	0.96
2	Kanhargaon	9691.824	21.375	0.22	0.07
3	Tohogaon	6589.091	9.500	0.14	0.03
4	Dhaba	6094.694	135.000	2.21	0.43
	<b>Total</b>	<b>31102.257</b>	<b>464.078</b>		<b>1.49%</b>

### 20.2 SPECIAL OBJECTIVES OF MANAGEMENT :

- To maintain existing buildings, roads, sale and Jungle depots.
- The existing depots are maintained and will be expanded as per requirement and demand.
- Roads will be maintained for extraction of forest produce as well as for Intensive patrolling of forest areas for effective protection.
- Culverts and small bridges will be maintained for effective communication.

## 21. PLANTING STOCK IMPROVEMENT WORKING CIRCLE

- The areas which could not be covered in any working circles, since the areas are diverted to other activities such as (a) Central Teak Nursery (b) Seed Stands (c) Seed Production Areas (d) Research Plots are included in Planting Stock Improvement working circle.
- This working circle also includes areas of nurseries. The total area under this working circle is 238.997 ha.

Distributions of the area of this working circle into various Ranges are as under.

S.N.	Name of the Range	Total Area of Range	Area of the W.C. in ha	% of the area of the Range	% of the are of the Division
1	Zaran	8726.648	72.837	0.83	0.23
2	Kanhargaon	9691.824	123.160	1.27	0.39
3	Tohogaon	6589.091	31.000	0.47	0.10
4	Dhaba	6094.694	12.000	0.19	0.04
	<b>Total</b>	<b>31102.257</b>	<b>238.997</b>		<b>0.77%</b>

### 21.1 SPECIAL OBJECTS OF MANAGEMENT :

- To maintain existing Central Teak Nursery, Seed Stands, Seed Production Areas & Research Plots.

### 22. BAMBOO OVERLAPPING WORKING CIRCLE

This working circle includes all the areas where bamboo, natural or planted, and silviculturally mature is available for working. All natural Bamboo bearing area and established Bamboo plantations which are capable of giving marketable bamboo are included in this working circle. This is an overlapping working circle and it includes following areas.

A. Naturally regenerated bamboo areas = 11425.000 ha.

Total area allocated to this working circle is 11425.000 ha.

The distribution of these areas into various Ranges are as under.

S.N.	Name of the Range	Total Area of Range	Area of the W.C. in ha	% of the area of the Range	% of the are of the Division
1	Zaran	8726.648	3430.000	39.30	11.00
2	Kanhargaon	9691.824	4670.000	48.18	14.98
3	Tohogaon	6589.091	2010.000	30.50	6.45
4	Dhaba	6094.694	1315.000	21.57	4.22
	<b>Total</b>	<b>31102.257</b>	<b>11425.000</b>		<b>36.73%</b>



## **22.1 GENERAL CHARACTERS OF THE VEGETATION :**

- Dendrocalamus strictus which occurs abundantly in the tract of Bamboo occurring in the tract.
- Bamboo forms an under-storey in better quality areas.
- Variation in quality, growth of Bamboo and frequency of its occurrence are on account of variation in soil and drainage. Bamboo clumps in these areas are well established and well formed.
- These are capable of giving marketable bamboo if worked in a systematic manner.
- Bamboo mostly occupies hill slopes and is dense particularly along nalas and moist sheltered slopes.

## **22.2 SPECIAL OBJECTS OF MANAGEMENT :**

- To enhance the productivity of Bamboo area.
- To sustainably harvest bamboo areas following established silvicultural system.

## **22.3 METHOD OF TREATMENT :**

- Bamboo will be harvested on a three years cycle basis.
- The crop will be treated on clump basis i.e. each clump will be treated independently as per the requirement.
- A cutting cycle of 3 years has been fixed. As 1<sup>st</sup> and 2<sup>nd</sup> year bamboo culms provide food and nourishment to the rhizomes under soil, the same will not be cut.
- Only 3<sup>rd</sup> year culms are fit for harvesting.

## **22.4 SUBSIDIARY SILVICULTURAL OPERATION :**

- Climbers interfering with the growth of Bamboo clumps should be cut.

## **22.5 BAMBOOSA BALCOOA :**

- Planting of Bamboo including Bambusa balcooa will be carried out where irrigation facilities are available.

## **23. WILD LIFE MANAGEMENT (OVERLAPPING) WORKING CIRCLE :**

Comprises of entire forest area covered in this Management plan.

Total area is 31102.257 ha.

## **23.1 FAUNAL WILD LIFE FOUND IN THE AREA :**

- a. Carnivore - Tiger, Hyena, Wild dog, Wolf, Jackal, Fox and Jungle cat.

- b) Herbivore- Bison, Sambar, Cheetal, Nilgai, Barking deer, Wild boar, Sloth bear, Black buck, four horned antelope and Chinkara.
- c) Rodents- Flying squirrel, three striped palm squirrel, Porcupine and Hare.
- d) Birds- Painted sand grouse, Common sand grouse, peafowl, Grey jungle fowl, Painted partridge, Grey partridge, Jungle bush quail, Black breasted quail, Indian bustard quail, Indian button quail, Red spur fowl, Crane, spotted bill duck, Pigeon, Dove, Cotton teal and Whistling teal.

### **23. 2 SPECIAL OBJECTIVES OF MANAGEMENT :**

- i) To conserve the wild life found in the areas and also to improve their habitat.
- ii) To manage, protect and multiply the wild life by providing protection and shelter to them.
- iii) To conserve the biodiversity of the area.
- iv) To bring awareness among the people about wild life prevailing in the area.
- v) To reduce man animal conflict situations.
- vi) To train the staff and to strengthen the infrastructure to handle wild life emergencies.
- vii) For monitoring wildlife advance technology like Trap Camera suggested.

### **23. 3 METHOD OF TREATMENT :**

- 2 dead trees / ha. in any felling coupes will be retained.
- Existing water holes will be maintained & new water holes will be created.
- A vigilant watch will be kept on poachers
- Estimation of the wildlife population will be carried out.

### **24. NON-TIMBER FOREST PRODUCE (OVERLAPPING ) WORKING CIRCLE**

- This is an overlapping working circle.
- Total area is 31102.257 Ha.
- Non-Timber Forest produces (NTFP) include all forest produce other than timber and firewood of both plant and animal origin, occurring naturally or sometimes as augmentation in forests.
- As compared to animal products like honey and wax, plant products natural and man-made are much diversified depending upon the availability of forest types
- Species grown in man-made forests and also the extent of forest in a given area or region.
- NTFP is an output from the forest without disturbing the eco-system.
- Reduction in revenue from timber could be compensated.

#### **24.1 SPECIAL OBJECTIVES OF MANAGEMENT :**

- To manage the Non-wood Forest Produce on a sustainable basis.
- To integrate the developmental activities for the welfare of local people to improve their standard of living
- To develop and adopt a package of scientific practices for sustainable extraction and usage of medicinal plants.
- To ensure holistic development and welfare of local people of the region

#### **24.2 NON -WOOD FOREST PRODUCE OF THE TRACT :**

- |                            |                 |
|----------------------------|-----------------|
| 1. Mohaflowers.            | 10. Behada      |
| 2. Gum                     | 11. Hirda       |
| 3. Myrabolons and Dikamali | 12. Achar       |
| 4. Honey                   | 13. Amaltas     |
| 5. Biba                    | 14. Awala       |
| 6. Bel                     | 15. Murud sheng |
| 7. Broom Grass             | 16. Salai       |
| 8. Sabai Grass             | 17. Siras black |
| 9. Bija                    | 18. Siras white |

#### **24.3 METHOD OF TREATMENT :**

- All climber except medicinal valuable species interfering with trees and advance growth would be cut.
- Mature and fruit bearing trees should be freed from over head and lateral shade.
- These species will be planted in regular plantation programme as well as gap filling operations.
- Wherever possible plantation of these species be done to the extent of 5 %.

#### **24.4 MISCELLANEOUS REGULATIONS :**

- Area will be protected from fire rigidly.
- Plantation area will be closed for grazing for the period of 10 years.
- The existing system of harvesting NTFP is not scientific but destructive at the same time.
- Need to provide training to staff and villagers engaged in the harvesting.

#### **25 SOIL AND WATER RESOURCES MANAGEMENT (OVERLAPPING) WORKING CIRCLE.**

- This is an overlapping working circle covering the entire area of the division.
- Total area is **31102.257 ha.**
- This tract represents large number of water tanks available in the division.