

INTRODUCTION

Sangli Region. Sangli of the Forest Development Corporation of Maharashtra Ltd, Nagpur was started in 2011. This region includes the districts of Pune, Sangli, Kolhapur, Satara, Sholapur of Western Maharashtra. This Management Plan deals with Reserved forest areas of Ajara and Gadhinglaj Talukas of Kolhapur District handed over by Kolhapur Forest Division as per R&FD Govt Resolution No.FDC-2014/PKR No.112/F-5 Mantralaya Mumbai- 32 Dated 19 June 2014.

The total Reserve Forest area covered in this plan is 2213.537 ha. which is spread over 29 compartments. The Reserved forest areas are part of Gadhinglaj and Ajara talukas of Kolhapur district. The scientific management of the Reserved forest areas of Sangli Region, Sangli have been proposed in the Management Plan for the period from 2016-17 to 2025-26.

a) Vision Statement

‘To increase the productivity of forests by using improved plantation technology and to maintain the same on sustained yield basis.’

b) Goals & Objective of Management

The National Forest Policy of 1988 will be the guiding principle to decide the general objects of management:

- (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 plantation technology and to maintain the same on sustained yield basis.
- (iv) To meet the requirement of small timber, fuel wood, 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.
- (vii) Arrest further degradation of the area and promote existing vegetative cover by proper soil conservation measures and intensive planting.

c) SWOT Analysis for prescription of strategies for achieving the goals and objectives.

Strength:

- i) Skilled manpower base for the sector.
- ii) Improved plantation & harvesting technology.
- iii) Conservation of Gene pool and Bio-diversity.

Weaknesses:

- i) Effective and efficient protection of forest.
- ii) Accurate and reliable data and information on forest resources.
- iii) Proactive interface with the stakeholders – Local People, Industry & Government.

Oppourtunities:

- i) Efficient utilization and value addition of forest produce.
- ii) Enhancing productivity of the resources.
- iii) Promote a strong research base and effective knowledge management.

Threats:

- i) Organized crime of timber mafias.
- ii) Encroachment by politically motivated groups.
- iii) Diversion of productive areas.

d) Expected Outcome:

- (i) To increase the productivity of forests by using improved plantation technology and to maintain the same on sustained yield basis.
- (ii) To increase the production of NTFPs/Medicinal plants and to manage the same scientifically to utilize the potential to the maximum possible extent on sustained basis.
- (iii) To meet the requirement of small timber, fuel wood, fodder and NTFPs/Medicinal plants of the rural and tribal population on top priority.
- (iv) To conserve and protect wildlife.

e) Past Systems Of Management And Their Results

Working Plan of Kolhapur Forest Division By Shri Vikas Gupta, Shri Nitin Kakodkar and Shri Devendra Kumar From 2008-09 to 2017-18.

The following Working Circles are proposed in the Working Plan.

- | | |
|---|--------------------|
| 1. Protection cum Watershed Management WC | Area- 68,834.38 Ha |
| 2. Improvement Working Circle | Area- 39,014.61 Ha |

3. Old Plantation Management Working Circle	Area- 13,253.44 Ha
4. SMC cum Afforestation Working Circle	Area- 10,279.55 Ha
5. Bamboo Management (O.L.) Working Circle	
6. Wild Life Management (O.L.) Working Circle	
7. Fodder Resources Mngmnt (OL) Working circle	
8. NTFP Management (O.L.) Working Circle	
Other	
9. Miscellaneous	Area 7,589.02 Ha
Total	Area -1,38,971.00 Ha

1. *Protection cum Watershed Management Working Circle*

This Working Circle includes the catchment areas of Radhanagari, Tulsi, Dudhganga, Warna, Kasari, Patgaon, Kumbhi, Kadbi, Chitri, Chikotra, Jangamhatti, Dhamni, Jambhare, Ghatprabha, Hiranyakeshi, Sarfnalla reservoirs. The water from these reservoirs is mainly used for hydro electricity generation, drinking water supply and for irrigation. This Working Circle also includes the forests areas situated on steep to very steep and precipitous hill slopes of Western Ghats and other hill ranges.

2. *Improvement Working Circle*

This WC includes forests which have the capacity to produce good quality timber and fuel wood for use in the future but as of now need improvement measures including singling and cut back operations, improvement fellings as well as SMC measures.

3. *Old Plantations Management Working Circle*

This WC includes all areas containing successful old plantations of *Acacia auriculiformis*, Eucalyptus, Miscellaneous species, Cashew and Teak. The prescriptions for their management will be different for each species and the emphasis will be on slow replacement of these species with local utility species.

Result: The prescriptions were not followed in the forest areas handed over to FDCM Ltd.

4. *SMC cum Afforestation Working Circle*

The typical areas which are included in this WC are mainly from low rainfall areas. These areas are also suitable for taking up soil and moisture conservation works. Afforestation works are recommended only after taking adequate SMC works.

5. *Bamboo Management (overlapping) Working Circle*

Bamboo is found mainly along the hilly slopes and along the nallahs in scattered but dense patches in Chandgad, Ajara, Gargoti and Malkapur ranges of Kolhapur division. These bamboo clumps have never been worked before and require immediate management interventions.

6. *Wild life Management (overlapping) Working Circle*
 Habitat improvement works, strengthening corridors along its Western Ghats i.e. Radhanagari Sanctuary and Chandoli National Park, reduction of man animal conflict and strengthening of the infrastructure to handle wild life emergencies will be aimed at in these areas.

7. *Fodder Resources Management (overlapping) Working Circle*
 This Working Circle overlaps with the forest areas which were previously allotted to 'Fodder Reserve WC' in Kate and Bapat's Plan but have now been allotted to various WCs. In these Kuran areas prescriptions regarding developing fodder resources as given in the previous WF were not followed and instead large scale plantations of *Acacia auriculiformis*, *Glyricidia* etc. were taken in these areas in the past. These areas need to be revived with luxuriant growth of fodder grasses.

8. *Non Timber Forest Produce (overlapping) Working Circle*
 In Kolhapur division harvesting of NTFP is being done through contractors or co-operative societies. The important NTFP are Tamal patra, Cashew fruits, Shikekai pods, Gum, Kokam, Hirda. Awala. Curry leaves etc.

9. *Miscellaneous Area*

This chapter includes those areas that cannot be effectively managed due to encroachments, forest diversions and legal or administrative hurdles.

f) Future Management

Keeping in view the objectives of management and methods of treatment, the following Working Circles are constituted:

Sr. No.	Working Circle	Area Allotted in Ha.
1	Plantation Management Working Circle	2213.537
2	Bamboo Management (OL) Working Circle	
3	Wild Life Management(O.L.) Working Circle	
4	NTFP Management (O.L.) Working Circle	

1. *Plantations Management Working Circle*
 This WC includes all areas containing successful old plantations of *Acacia auriculiformis* & *Eucalyptus*. The prescriptions for their management will be different for each species and the emphasis will be on complete replacement of these species with plantations of commercially important Bamboo species viz. *Dendrocalamus stocksii* and *Bambusa balcooa*.

2. Bamboo Management (overlapping) Working Circle

Bamboo is found mainly along the hilly slopes and along the nallahs in scattered but dense patches. Old bamboo plantations and naturally occurring bamboo are included in this WC. These bamboo clumps have never been worked before and require immediate management interventions.

3. Wild life Management (overlapping) Working Circle

Habitat improvement works, reduction of man animal conflict and strengthening of the infrastructure to handle wild life emergencies will be aimed at in these areas.

4. Non Timber Forest Produce (overlapping) Working Circle

The important NTFP are Tamal patra, Shikekai pods, Gum, Kokam, Hirda, Awala, Curry leaves etc. This WC deals with the management including utilization of the NTFP resource base on sustainable basis.

ABSTRACT OF PLAN PRESCRIPTIONS

Chapter No.	Para No./ Sub para No.	Prescribed activity	Remarks
II	PLANTATION MANAGEMENT WORKING CIRCLE		
2.2	GENERAL CONSTITUTION OF WORKING CIRCLE.	All successful Acacia and Eucalyptus plantations	
2.3	GENERAL CHARACTERISTICS OF VEGETATION	Crop is not very pure	
2.4	FELLING SERIES, CUTTING SECTIONS AND JFM AREAS.	No. Felling series 4. No JFM areas.	
2.5	BLOCK, COMPARTMENTS AND JFM AREAS.	No. of compartments 29 No JFM areas.	
2.6	SPECIAL OBJECTIVES OF MANAGEMENT.	Described in the Para.	
2.6.01	ANALYSIS OF THE CROPS	No. of trees per ha. and Natural Regeneration assessment has been estimated on the basis of partial enumeration.	
2.6.02	SILVICULTURAL SYSTEM	Harvesting of over mature crop	
2.6.03	ROTATION PERIOD	15 years	
2.6.04	HARVESTABLE GIRTH	Harvesting of over mature crop	
2.6.05	REDUCING FACTORS AND REDUCED AREAS	Not applicable	
2.6.06	FELLING CYCLE	Harvesting of over mature crop	

2.6.07	DIVISION INTO PERIODS AND ALLOTMENT TO PERIODIC BLOCKS	Periodic blocks are not constituted.	
2.6.08	CALCULATION OF YIELD	Yield will be calculated on the basis of enumerated sample plots	
2.6.09	TABLE OF FELLING	Given in the Appendix No.VII A to VII B of Volume-II.	
2.6.10	METHOD OF EXCUTING THE FELLING	Described in the para.	
2.6.11	SUBSIDIARY SILVICULTURAL OPERATIONS CLEANING AND THINNING	As per instructions issued by the Managing Director, FDCM Ltd., Nagpur.	
2.6.12	REGENERATION	Already regenerated area	
2.6.13	ASSOCIATED REGULATIONS AND MEASURES	Area will be protected from fire, grazing and illicit felling	
III	BAMBOO OVERLAPPING WORKING CIRCLE		
3.2	GENERAL CONSTITUTION OF WORKING CIRCLE	Harvested area will be planted by commercially important bamboo species.	
3.3	GENERAL CHARACTERISTICS OF VEGETATION.	Harvested area with mixed crop	
3.4	FELLING SERIES, CUTTING SECTIONS AND JFM AREAS.	No. Felling series 4 No JFM areas.	
3.5	BLOCK, COMPARTMENTS AND JFM AREAS.	No. of compartments 29 No JFM areas.	
3.6	SPECIAL OBJECTIVES OF MANAGEMENT.	Described in the Para.	
3.6.01	ANALYSIS OF THE CROPS	No. of trees per ha. and Natural Regeneration assessment has been estimated on the basis of partial enumeration.	
3.6.02	SILVICULTURAL SYSTEM	Described in the Para.	
3.6.03	ROTATION PERIOD	After sporadic/Gregarious flowering clums will be cleared felled.	
3.6.04	HARVESTABLE DIAMETRE	Described in the Para.	
3.6.05	REDUCING FACTORS AND REDUCED AREAS	Described in the Para.	
3.6.06	FELLING CYCLE	Described in the Para.	
3.6.07	DIVISION INTO PERIODS AND ALLOTMENT TO PERIODIC BLOCKS	3 years Described in the para	
3.6.08	CALCULATION OF YIELD	Yield will be regulated on area basis.	
3.6.09	TABLE OF FELLING	Given in Appendix No.X of	

		Volume-II.	
3.6.10	METHOD OF EXECUTING THE FELLING	Described in the para.	
3.6.11	SUBSIDIARY SILVICULTURAL OPERATIONS CLEANING AND THINNING	As per instructions issued by the Managing Director, FDCM Ltd., Nagpur.	
3.6.12	REGENERATION	Already reenerated	
3.6.13	ASSOCIATED REGULATIONS AND MEASURES	Area will be protected from fire, grazing and illicit felling.	
IV	WILD LIFE MANAGENENT (OVERLAPPING) WORKING CIRCLE		
4.2	GENERAL CONSTITUTION OF WORKING CIRCLE	Entire area of the division	
4.3	GENERAL CHARACTERISTICS OF VEGETATION.	Described in the respective main working circle.	
4.4	FELLING SERIES, CUTTING SECTIONS AND JFM AREAS	Details given in the respective main working circle.	
4.5	BLOCK, COMPARTMENTS AND JFM AREAS	The total area is 2213.537 ha. which is directly divided into 29 compartments. No JFM areas.	
4.6	SPECIAL OBJECTIVES OF MANAGEMENT	To ensure wildlife (animals & plants found in wild) protection and conservation in the managed forests.	
4.6.01	ANALYSIS OF THE CROP	Described in the respective main working circle.	
4.6.02	SILVICULTURAL SYSTEM	Described in the respective main working circle.	
4.6.03	ROTATION PERIOD	Described in the respective main working circle.	
4.6.04	HARVESTABLE DIAMETER	Described in the respective main working circle.	
4.6.05	REDUCING FACTORS AND REDUCED AREAS	Described in the respective main working circle.	
4.6.06	FELLING CYCLE	Described in the respective main working circle.	
4.6.07	DIVISION INTO PERIODS AND ALLOTMENT TO PERIODIC BLOCKS	Described in the respective main working circle.	
4.6.08	CALCULATION OF THE YIELD	Described in the respective main working circle.	
4.6.09	TABLE OF FELLING	Described in the schedule of respective main working circle.	
4.6.10	METHOD OF EXECUTING THE FILLING	Described in the respective	

	(CUTTING)	main working circle.	
4.6.11	SUBSIDIARY SILVICULTURAL OPERATIONS CLEANING AND THINNING	Described in the respective main working circle.	
4.6.12	REGENERATION	Described in the respective main working circle.	
4.6.13	ASSOCIATED REGULATION AND MEASURES	Standing order (Wildlife) No.001.	
4.7	INJURIES TO WILD ANIMALS	Poaching, degradation of habitat, diseases, fire. Description given in the para.	
4.8	DAMAGES TO PROPERTIES AND INJURIES TO HUMAN DUE TO WILDLIFE	Damage to crop and Injuries to cattle and human. Described in the para.	
4.9	FUTURE MANAGEMENT	Described in the Para.	
4.10	CREATION OF DATA BASE	Given in the Para.	
4.11	HABITAT DEVELOPMENT WORKS	Waterhole development, Improvement in prey base, Eradication of invasive weed.	
4.12	ECO-DEVELOPMENT, AWARENESS GENERATION AND ECO-TOURISM	Described in the Para.	
V	NON-TIMBER FOREST PRODUCE (OVERLAPPING) WORKING CIRCLE		
5.2	GENERAL CONSTITUTION OF WORKING CIRCLE	Overlaps the entire area of the division.	
5.3	GENERAL CHARACTERISTICS OF VEGETATION	Described in the respective working circle.	
5.4	FELLING SERIES, CUTTING SECTIONS AND JFM AREAS	Details given in the respective working circle.	
5.5	BLOCK, COMPARTMENTS AND JFM AREAS	The total is 2213.537 ha. which is directly divided into 29 compartments. No JFM areas.	
5.6	SPECIAL OBJECTIVES OF MANAGEMENT	To conserve and develop all the non-timber forest produce existing in the forest.	
5.6.01	ANALYSIS OF THE CROP	Described in the respective working circle.	
5.6.02	SILVICULTURAL SYSTEM	Selection system. Only silviculturally available NTFP's will be harvested.	
5.6.03	ROTATION PERIOD	Annually or biannually depending upon the life-span of the individual species.	
5.6.04	HARVESTABLE DIAMETER	Not applicable	
5.6.05	REDUCING FACTORS AND REDUCED AREAS	Not prescribed	

5.6.06	FELLING CYCLE	Described in the respective working circle.	
5.6.07	DIVISION INTO PERIODS AND ALLOTMENT TO PERIODIC BLOCKS	Described in the respective working circle.	
5.6.08	CALCULATION OF THE YIELD	Potential data is not available hence not possible to calculate yield.	
5.6.09	TABLE OF FELLING	Not prescribed.	
5.6.10	METHOD OF EXECUTING THE FILLING (CUTTING)	Described in the para.	
5.6.11	SUBSIDIARY SILVICULTURAL OPERATIONS CLEANING AND THINNING	Described in the para.	
5.6.12	REGENERATION	Described in the para.	
5.6.13	ASSOCIATED REGULARION AND MEASURES	Protection from Fire, Grazing and Illicit.	
VI	SOIL AND WATER RESOURCE MANAGEMENT (OVERLAPPING) WORKING CIRCLE		
6.2	GENERAL CONSTITUTION OF WORKING CIRCLE	With a view to provide desired soil conservation treatment to the affected areas of the division.	
6.3	GENERAL CHARACTERISTICS OF VEGETATION	Given in the respective Working Circle.	
6.4	FELLING SERIES, CUTTING SECTIONS AND JFM AREAS	Details given in the respective main working circle.	
6.5	BLOCK, COMPARTMENTS AND JFM AREAS	Total area 2213.537 ha. which is directly divided into 29 compatements. No JFM area.	
6.6	SPECIAL OBJECTIVES OF MANAGEMENT	Conservation & development of valuable natural resources like soil and drying water sources.	
6.6.01	ANALYSIS OF THE CROP	Described in the respective main working circle.	
6.6.02	SILVICULTURAL SYSTEM	Described in the respective main working circle.	
6.6.03	ROTATION PERIOD	Described in the respective main working circle.	
6.6.04	HARVESTABLE DIAMETER	Described in the respective main working circle.	
6.6.05	REDUCING FACTORS AND REDUCED AREAS	Described in the respective main working circle.	
6.6.06	FELLING CYCLE	Described in the respective main working circle.	

6.6.07	DIVISION INTO PERIODS AND ALLOTMENT TO PERIODIC BLOCKS	Described in the respective main working circle.	
6.6.08	CALCULATION OF THE YIELD	Described in the respective main working circle.	
6.6.09	TABLE OF FELLING	Described in the schedule of main working circle.	
6.6.10	METHOD OF EXECUTING THE FILLING (CUTTING)	Described in the respective main working circle.	
6.6.11	SUBSIDIARY SILVICULTURAL OPERATIONS CLEANING AND THINNING	Described in the respective main working circle.	
6.6.12	REGENERATION	Described in the respective main working circle.	
6.6.13	ASSOCIATED REGULARION AND MEASURES	Protection from Fire, Garzing and Illicit. Soil conservation works.	
VII	BIO-DIVERSITY CONSERVATION AND DEVELOPMENT (OVERLAPING) WC		
7.2	INTRODUCTION	Described in the Para.	
7.3	TYPES OF BIODIVERSITY	There are three interrelated levels of biodiversity namely, genetic diversity, species diversity and community or ecosystem diversity i.e at the level of ecosystem.	
7.4	IMPORTANCE OF BIO-DIVERSITY	Described in the Para.	
7.5	USES OF BIODIVERSITY	Described in the Para.	
7.6	THREATS TO BIODIVERSITY	Described in the Para.	
7.7	CONSERVATION OF BIODIVERSITY	Described in the Para.	
VIII	FOREST PROTECTION PLAN		
8.1	INTRODUCTION	Described in the Para.	
8.2	OBJECTIVES OF PROTECTION PLAN	To develop a database to monitor various forest and wildlife offence cases in a systematic manner.	
8.3	RANGE, ROUND AND BEAT	1 Ranges, 2 Round and 4 Beat.	
8.4	GENERAL PRINCIPLES OF EFFECTIVE FOREST PROTECTION	Described in the Para.	
8.5	FIRE PROTECTION	Described in the Para.	
8.6	FIRE CONTROL MEASURES	Described in the Para.	
8.7	ENCROACHMENT ON FOREST LAND	Punishable offence under the provisions of Indian Forest Act 1927 vide sections 26 (h) & 33 (c).	
8.8	METHOD OF TREATMENT	Described in the Para.	
8.9	MEASURES TO TREAT	Described in the Para.	

	ENCROACHMENT		
8.10	REFORESTATION IN ENCROACHMENT EVICTED AREA	Area shall be planted by suitable local species	
8.11	REGULATIONS IN ENCROACHMENT EVICTED AREA	Described in the Para.	
IX	GENERAL FINANCIAL FORECAST & FINANCIAL PLAN OF OPERATION		
9.1	FUTURE YIELD, EXPENDITURE AND REVENUE	Given in tabular form.	
9.2	COST OF THE PLAN	The cost of Management Plan per hectare worked out is about Rs.30.90 only.	
X	MISCELLANEOUS REGULATIONS		
10.2	BOUNDARY DEMARCATION	Priority areas are Reserve Forest.	
10.3	SPECIAL OBJECTIVE OF DEMARCATION	To maintain territorial integrity of forestlands in the division.	
10.3	APPLICATION OF GPS	GPS instrument for demarcation and fixing the location of boundary pillars.	
10.4	1/5TH BOUNDARY DEMARCATION SCHEME	Forest boundaries should be annually maintained under the 1/5 th Boundary Demarcation Scheme.	
10.5	DEMARCATON OF COUPE	Described in the Para.	
10.6	DEMARCATON OF PLANTATION SEGMENTS / SECTION	Described in the Para.	
10.7	PREPARATION OF TREATMENT MAP	Described in the Para.	
10.8	MARKING OF TREES FOR HARVESTING	Described in the Para.	
10.9	SOIL AND MOISTURE CONSERVATION WORK	Described in the Para.	
10.10	GUIDELINE FOR REENERATIONS	Described in the Para.	
10.11	SEEDS AND PLANTIN STOCKS	Described in the Para.	
10.12	CHOICE OF SPECIES	Described in the Para.	
10.13	SPACING AND PLANTATIONS	Described in the Para.	
10.14	FENCING OF PLANTATION	Described in the Para.	
10.15	THINNING	Described in the Para.	
10.16	HARVESTING AND DISPOSAL	Described in the Para.	
10.17	IRREGULAR HARVESTING	Described in the Para.	
10.18	PERMANENT NURSERY AND CENTRA DEPOT	Described in the Para.	

XI CONTROL AND RECORDS		
11.1	DEVIATION PROPOSALS AND PROCEDURE FOR OBTAINING SANCTION	All the deviation proposals require sanction as per process and guidelines of Government of India
11.2	CONTROL AND RECORDS	List of items for which control forms to be prepared is given.
11.3	REGISTERS OF VARIOUS ACTIVITIES	To be maintained and kept up to date.
11.4	MAPS	To be prepared and kept with Division and Range level.

WORKS PRESCRIBED DURING THE PLAN PERIOD

Chapter No.	Para No./Sub Para No.	Prescribed activity	Year wise (Year 1-10) distribution of physical target in ha.				
			2016-17	2017-18	2018-19	2019-20	2020-21
II	Plantation Management Working Circle	Harvesting of over mature crop	261.00	210.020	200.153	195.740	233.6
III	Bamboo (OL) Working Circle	Bamboo Harvesting.	210.000	170.000	170.000	173.000	203.0

Chapter No.	Para No./Sub Para No.	Prescribed activity	Yearwise (Year 1-10) distribution of physical target				
			2021-22	2022-23	2023-24	2024-25	2025-26
II	Plantation Management Working Circle	Harvesting of over mature crop	236.500	266.950	266.240	125.010	218.0
III	Bamboo (OL) Working Circle	Bamboo Harvesting.	203.000	232.000	234.000	110.000	190.0

FDCM is committed for Protection, Development and Conservation of Biodiversity through intensive Management of the Forest area, leased out by the Forest Department, by giving proper treatment to the area of each compartment.