

Summary of the Working Plan for the Amravati Forest Division.

Period from 2004 – 05 to 2013 – 2014

Distribution of the area:

This working plan covers the entire “A” class & “C” Class protected forest of the division.

A - Class	- 25265.550 ha.
C - Class	- 26171.908 ha.
Protected forest	- 6.630 ha.
Unclassed forest	- 55.790 ha.

	51499.878 ha.

State of boundaries:

The outer boundaries of “A” Class have been well laid down on the ground. They are either the natural features or a clear-cut line. From 2001- 2002 onward new boundary pillars have been erected with permanent RCC structures at places. In case of babulbans the boundaries have been demarcated through TCM but no pillars have been erected. In case of C- Class forests, no demarcation exists.

Legal position:

The entire forests of Amravati district have been declared as reserve forest under various notifications. However a distinction has been made by referring them as “A” & “C” class.

In previous working plan entire area (both “A” class & “C” class) has been brought under scientific management. In this working plan entire area (both “A” class & PF) has been brought under scientific management.

Rights & concessions:

No rights have been recognized, however few concessions have been granted.

The description of the forests:

According to Champion & Seth classification, the forests of Amravati division belong to sub group 5A- Southern tropical dry deciduous forest. They can still be classified as following.

- (a) Teak forests (5 A/C1a)
- (b) Open mixed forests (5A/C3)
- (c) Babul Forests (5/E3)
- (d) Salai forests (5/E2)
- (e) Grass land reserves, (5/DS 4 and DS 2)

In teak forest, the percentage is even up to 80. The site quality is IV (a) and IV (b). Teak is found mixed with its usual associates.

The injuries to which the crop is liable:

- i) Climate :- A long period of drought causes a large mortality.
- ii) Grazing :- Heavy uncontrolled grazing does the damage to the growing stock
- iii) Fire :- It is the single largest damaging factor to the forests here.
- iv) Lantana :- It has invaded a large part of area affecting young seedlings in growth.
- v) Wild animals :- Wild animals like Sambhar, Nilgai, Chital, wildboar & porcupines do considerable damage to the growing stock.
- vi) Man :- No serious case of encroachment is seen, but the illicit sale of fuelwood by the local dweller & is causing a serious damage.

Erosion :- It is a serious problem in “C” class forests.

Agricultural customs & wants of the Population :-

Barring some portion of Warud range, the entire forests exist in small patches & are surrounded by big & heavily populated villages. They depend on forest for the products like small timber, fuelwood, grasses & grazing, Bamboo & other minor forest produce like palas, Mahul, Kulu etc.

Market & marketable produce:-

The following are the marketable produce obtained from the forests.
Timber, fuelwood, grasses, Rosh grass, tendu leaves etc.

Line of Export:-

There is a good network of all weather roads in Amravati forest division & there is no problem in transporting the material from one place to another.

Method of harvesting & their cost:-

The agency of harvesting is Departmental only except in case of grasses & gum where the Kosan units are sold to contractors.

Staff :-

The tract dealt with is under the administrative control of Deputy Conservator of Forests, Amravati Forest Division. At present staff position of the division is as under –

Permanent	Temporary	Total
205	41	246

Labour Supply :-

Due to flourishing agriculture there is a shortage of labour for the forestry work.
Past system of management :-

In 1902, the working plan for the forest of Amravati division was drawn up by Shri. E.E.Fernandiz, the Conservator of Forests, Hyderabad assigned district. It laid the prescription for the period from 1902-03 to 1926-27. Under this plan, 4149 acres of babulbans were proposed to be planted under agrisilviculture method. The method of treatment prescribed consists of clear felling followed by “ Sowing in plough-made furrows 6’apart or in patches of 3’x5’,6’ apart . The control forms show that working was irregular. The Chirodi reserve was put in the Bushwood working circle with simple coppice treatment and a rotation of 15 years was prescribed. Only two felling series were laid down. The area did not give any satisfactory result, so the system was abandoned and it was replaced by a clear felling and planting under agrisilviculture. In Warur felling series, the system continued till 1922 and in Chirodi reserve upto 1928. Shekdari, Mehedari and Lakhara reserves of Morshi range constituted teak working circle. Each of three reserves was divided into two felling series, each felling series comprising ten coupes. The method of treatment prescribed was coppice improvement felling on a rotation of 20 years. This working plan was never sanctioned by the Government. In 1919, Shri. H.S. George prepared the working scheme for the babul bans. The scheme envisaged to plant 3776 acres under agri-silviculture method and fourteen coupes were laid down. This scheme was abandoned because of some unavoidable reasons. In 1930 a working scheme was prepared by Sardar Kesar singh, Extra Assistant Conservator of Forests. It was an attempt to revive Shri. Fernandez’s plan by dividing each felling series into 20 annual coupes. A light, a very light and ordinary improvement felling was prescribed. In 1935 Shri. Gurdial Singh’s working plan came in force for babul ban and grass reserve areas. Shri. W.N.Sharma’s plan came into force from 1941. From 1961-62 Shri. B.H.Upadhyay’s working plan for Amravati division came into force. It had following working circles- the coppice with reserve working circle,

the improvement working circle the miscellaneous working circle, the babulban working circle, the bamboo (overlapping working circle). The C class forests was not brought under any scientific management.

In coppice with Reserve Working circle the treatment map was to be prepared for each coupe. The total area included this working circle was 7944.4 ha. All areas capable of producing small timber and fuel-wood were kept in this circle. The treatment map was to contain the following details- unworkable area, areas to be clear felled for raising teak plantation, the old plantations and well stocked areas of forests with density above 0.4 but less than 0.7 salai forests over 0.4 density, remaining area. The different prescriptions were prescribed according to crop there. A similar treatment was prescribed in improvement working circle as well. The stress was made on taking plantation. In babulbans, thirty annual coupes were laid down and plantation was to be done by agri-silviculture method. The total area allotted to this working circle was 9935.25 acres. The babul plantation raised on good soil i.e. black cotton soil established very well. While on the poorer soil, they turned out to be failure. In kuran Working Circle, there are total 29 ramnas, out of which 8

were developed during this plan period. Not much was done to establish the grasses there. The ramnas mostly remained under-stocked. Miscellaneous working circle included the compartment belonging to the forest villages. No treatment was prescribed with the result these compartments deteriorated. In Bamboo (overlapping) working circle, the areas of the coppice with reserve were included and it had two felling series. No efforts were made to restock the area by raising the plantation, with the result, the area has deteriorated.

Basis of Proposal :-

The Government of India on December -7-1988 revised the old forest policy of 1952. It laid a special emphasis on environmental Protection and ecological balance. It states that at least 1/3 of the country land should be under tree – cover. It emphasis sizes on large-scale plantation and meeting the requirements of the local people especially tribal who strive on forest . It states that no forest should be worked without management plan and forestland should not be diverted for the non-forestry purposes.

Factors influencing the general objects of management :-

The National forest policy, 1988 is the guiding principles to decide the general objects of management. This policy recognizes the services rendered by the forest to all living creatures. The services (indirect benefits) given to the society by the forest through its existence are indispensable & have more weightage then physical benefits in terms of timber & firewood coming from felling of trees. The existence of life on any planet simply cannot be imagined without the existence of the Negotiation. Therefore, taking out direct benefits from the forests cannot be the primary objectives of the forest management. However, the direct benefit will also come through operation & required to maintain the forests in healthiest conditions of the forests, automatically, both direct &

indirect benefits will be optimum. Thus the orientation of the management is to have first the forest in balance & healthiest condition so as to have optimum perpetual benefits from it.

Objects of Management :

The basic objects of Management are to bring normalcy in the forest to prevent soil erosion, to meet the local demand, to increase the production of NTFP, to protect, develop & conserve wild animals, to involve JFMCs in harvesting ,afforestation and other forestry related activities.

Analysis & valuation of the crop :-

Under this plan density maps for the tract dealt with will be prepared by visual interpretation technique using remote sensing data in the office of Conservator of Forests Working plan Nagpur.

Enumeration:-

The enumeration of the existing stock was done by the survey of forest Resources unit , Amravati in the year 2001- 02 .

Functional classification :-

The Government of Maharashtra vide No.MFP-1365/ 13221 date 6th December 1968 announced the grazing policy of the State Government and along with that gave the functional classification of the forest,. The forest is classified into-

- (a) Protection forests
- (b) Tree forests
- (c) Minor forests
- (d) Pasture land
- (e) Grass reserves.

Grazing Policy :-

The cattle were defined in terms of cattle unit and each type of above forest was assigned the carrying capacity for their areas.

- (a) Protection forests:- No grazing was to be permitted, except in a very rare case and it should be one cattle unit for ten acre (approx.)
- (b) Tree forests :- one cattle unit for three acres of land.
- (c) Minor land :- one cattle unit for 1.5 to 2 acres of land.
- (d) Pasture forest :- one cattle unit for one acre of land.
- (e) Grass reserve :- No grazing is permitted. However agriculturists can remove

grass for stall feeding as per rules.

The cattle units were also defined as below.

- | | | | |
|-----|----------------------------|---|---------|
| (a) | Adult Buffalo | - | 2 units |
| (b) | Adult Cow, Bull | - | 1 unit |
| (c) | Buffalo Calf under 3 year- | | 1 unit |
| (d) | Cow Calf | - | ½ unit |

Treatment of the crop:-

The following working circles have been formed-

- Selection cum improvement working circle and allotted to this working circle is 15097.241 ha.
- Afforestation working circle :- area allotted to this working circle is 27386.055 ha.
- Kuran working circle: area allotted to this working circle is 7451.226 ha.
- Miscellaneous Working Circle: Area allotted to this working circle is 1565.356
- Old plantation working circle: area allotted to this working circle is 590.71 ha.
- Bamboo overlapping working circle: This is an overlapping working circle in those area where bamboo has been successfully introduced.
- Wildlife management overlapping working circle: area allotted to this working circle is 51499.878 ha.
- Non Timber forest produce (overlapping) working circle. This is an overlapping working circle covering entire forest area.

Table

Range	SCI WC (ha)	Afforestat. W.C. (ha)	Kuran W.C.(ha)	Misc. W.C (ha)	Unclass (ha)	Total area in ha.
Amravati	5322.151	11057.119	4929.151	93.457	55.79	21457.662
Paratwada	1727.038	5148.281	953.267	229.820	-	8058.406
Morshi	1405.400	7566.657	1405.561	1046.944	-	11424.562
Warud	6642.652	3613.998	163.247	139.351	-	10559.248
Total	15097.241	27386.055	7451.226	1509.566	55.79	51499.878

Period of the Plan:

The period of the plan shall be 10 years . However midterm review will be taken after five years.

I) Working plan for selection cum improvement working circle.

General constitution:

Total area allotted to this working circle is 15097.241 ha. This working circle contains the area with density generally over 0.4.

General Character of the vegetation :

The site quality of the tract is mainly IVa & IVb & even quality III is found in better soil supporting areas.

The density of the crop is less than 0.4, 0.4 to 0.6 or even more at places.

The area in general supports the poor, high and low forest crops of Teak & its associates & other trees which are largely of low grades. Teak constitutes more than 35% of the stock.

Blocks & Compartments :

The total compartments allotted to this working circle are seventy-three .

Enumeration :

The enumeration was carried out by S.O.F.R. Amravati unit.

Special objects of management:

- i) To improve the crop stocking, composition & condition.
- ii) To get maximum sustained outturns of small sized timber & firewood to meet the local demand.
- iii) To involve JFMC's in harvesting & other forestry related activities.

Silvicultural system : Selection cum improvement.

Choice of species :

The species to be regenerated will be as per site requirement & if people's participation is available the site suitability & peoples requirement to be harmonized.

Rotation 40 years

Felling Series – Nine working series have been formed.

Yield:- It will be regulated by the area.

Agency for harvesting : It will be carried out departmentally.

Demarcation of coupes :

Demarcation of first & second coupes will be done in first year of operation. Barring first coupe rest of coupes will be demarcated one year in advance.

Treatment map :

The treatment map will be prepared & different treatment will be given to different category.

Method of Regeneration :-

In the first year of marking, soon after the monsoon is over, a treatment map will be prepared, which will show the following.

- i) Areas with adequate natural regeneration .
- ii) Areas with inadequate regeneration.

Areas with adequate regeneration:

In the next year of main felling, the naturally regenerated seedlings will be cleared off all undergrowth & will be spaced out uniformly so that the number of seedlings per unit area (hectare) is equal to the number given in normal stand table. The species indigenous to the area like Teak, Bamboo, ain, Arjun, shivan, Jamun, Ber, Biba, Anjan, Apta, Bija etc will be preferred.

Both NR & AR will be protected rigidly from fix Areas with inadequate NR. In such areas planting will be done in the following year of the main felling. In plantation upto 20 % Teak, 18 % fruit species & rest other superior miscellaneous species may be preferred.

Subsidiary cultural operations :

It will include cutting back operation & cleaning.

Fire Protection:

The main felling coupe will be rigidly & effectively fire protected for the period of five years & from the year of main felling.

Closure to grazing :

The main felling coupe will remain closed to grazing for a period of five years from the year of main felling.

II) Working plan for afforestation working circle

General Constitution :

Total area included in this working circle is 27386.055 ha.

General character of the Negotiation:

Normally vegetation here is scanty. However stunted growth of ber, ain, Khair, palas is seen oftenly.

Special objects of management

- to increase the green cover.
- to enhance the productivity of land.
- to meet the demand of local people.
- to maintain the biological diversity of forest.

Analysis & valuation of Crop :

Most of the areas are sparsely stocked or blanks, so no stock mapping was carried out . No enumeration has been done.

Silvicultural system:

No regular silvicultural system will be applied. The rootstock present in the area, which has been constantly hacked for firewood, will be redressed properly.

Babul will be harvested at 35 years rotation (105 cm at gbh). The species other than babul shall be marked for felling if the girth exceeds 105 cm.

Choice of Species:-

According to the soil conditions, the species will be planted. Indigenous species of local economic importance are preferred.

Rotation :

No rotation is fixed, as the primary object is to afforest.

Agency for working:

The work will be done departmentally. Local forest protection committees will be involved in afforestation work.

Demarcation of coupes:

Demarcation of first & second coupes will be done in first year of operation . Barring first coupe rest of coupes will be demarcated one year in advance.

Method of executing the work:

Treatment map will be prepared on the available map. The treatment map will include following type of areas:

Protection areas: No marking for felling.

Under stocked areas: Measures to increase the density.

Pole crop & old plantation areas: marking for thinning will be done.

Well stocked areas: No tree will be marked for felling unless it attains the girth of 105 cm gbh.

Plantation technique: It will be as per soil depth.

operations Subsidiary silvicultural: It will include CBO, cleaning & thinning.

Fire protection: Main working coupe will be rigidly fire protected for a period of five years from the year of main felling / working .

Closure to grazing: It will be for five years from the year of planting.

III) Working plan for the Kuran Working Circle:**General Constitution:**

This working circle includes 52 Ramnas . Total area allotted to this working circle is 7451.226 ha.

General character of the vegetation :

Area allotted to this working circle is salai forest of under stocked nature & most of the areas are devoid of tree growth.

Special objects of management:

- to improve the quality & quantity of fodder.

- to meet the local demand for fodder

Analysis & valuation of the crop :

The area is sparsely wooded. The trees where ever present are young to middle aged.

Method of Treatment:

Every year 1/5 th of each Ramna has been proposed to be taken for treatment. In the first year of operation treatment map will be prepared for each coupe to be treated with following works.

- All obnoxious weeds & thorny shrubs will be uprooted
- Seeds of superior fodder grasses will be sown after ploughing the area
- The area under treatment will be effectively wire fenced or cattle proof trenches will be dug.

Choice of species:

Seed broadcasting & tussock planting of superior fodder grasses like Paunya, marvel, shedha etc will be taken up.

Fire Protection: Main working coupe will be fire traced every year.

Closure to grazing : Main working coupe will remain completely closed to grazing.

IV) Working plan for old plantation overlapping working circle:

General constitution of the working circle:

This working circle comprises of old plantations taken in past & scattered in all four ranges. Area allotted is 590.71 ha.

General character of the vegetation:

The area is fully stocked crop is uniform. In teak plantations, the subsequent silvicultural operations have been carried out to some extent but not such operations have been observed in plantations of miscellaneous species.

Special objects of management:

- to carry out thinning as per the yield table.
- to improve the crop, doing required silvicultural operations
- to cover thinning in all overdue plantations.
- to involve JFMC's in the management of Kurans.

Analysis Valuation of the crop:

All plantations have been shown on stock map on 1:50,000 scale. Generally crop is fully stocked.

Enumeration:

Enumeration has been carried out by SOFR unit of Amravati.

Treatment map:

Treatment map : Treatment map classifying total area in following three types.

Type- I	Fully stocked area
Type- II	Patches where plantation is failure
Type-III	This will include the portion of plantation, which is not completely failure, rather stem / ha. Is less than the required.

Thinning will be carried out in type I & type III areas.

Method of executing thinning:

- The number of stems / ha. & their distribution among different girth Diameter classes will be obtained by 1 % point sampling method.
- Site quality is assessed.
- Number of stems /ha. & their distribution among different diameter / girth classes will be obtained from the yield table.
- Comparing the actual stand table with that obtained from the yield table, the no. of stems to be retained in each diameter class will be obtained.
- The deficiency of teak stems in any girth class will be compensated with available miscellaneous species in that girth class
- If stems in higher girth classes are to be compensated with stems in lower girth class then the number to retained will be more & vice versa.

Fire protection: Plantations will be rigidly protected from fire.

Closure to grazing:

The worked coupes will remain closed to grazing for a period of five years from the year of working.

IV) Working plan for Bamboo (overlapping) working circle.

General constitution of the working circle:

This working circle will include all areas where bamboo is present in workable quality either in plantation or in natural forest.

General Character of the vegetation :

The general character of the vegetation in the area included in this working circle has been described in the respective working circles. Species of bamboo commonly found is *Dendrocalamus strictus*.

Special objects of management:

- To boost up clump formation
- To harvest bamboo from all over area.
- To meet demand of local people.
- To improve the productivity of the area.

Method of treatment:

Since crop is mostly young & clumps are yet to be formed. Therefore, in the first phase efforts will be made to boost up clump formation. The crop will be treated on clump basis i.e. each clump will be treated independently as per the requirement.

Method of working:

For regeneration:

- Around established bamboo plants a radius of 1 mtr. Will be cleared off all other seedlings.
- Soil of the cleared area will be ripped
- On the periphery of cleared area a circular trench of width 30 cm. & depth 20 cm will be dug & up soil will be heaped on soil of the planted bamboo.

For established clumps:

- No clump should be considered fit for harvesting unless it contains more than 12 mature culms.
- No culm below the age of two years will be felled.
- All dead, decayed bamboos to be removed.
- Digging of rhizomes prohibited.
- Climbers interfering with growth of bamboo clumps shall be cut .

Fire protection: Bamboo area will be protected completely from fire

Closure to grazing: In flowering area grazing will be strictly prohibited.

VI) Working Plan for NTFP (overlapping) working circle.

General constitution:

Forest area included in this working circle is 51499.838 ha.

Special objects of management:

- To manage NTFP scientifically

- To generate employment to local people.

Method of Treatment:

The treatment to be given will be different for different types of NTFP like moha flower, tendu, bamboo, broom grass, khair etc.

Research work :

There are so many NTFP & medicinal plants in the forest which are unidentified & untapped. The identification of medicinal plants in the field to be taken for study immediately.

VII) Working plan for wildlife (overlapping) working circle.**General constitution of the working circle:**

Total area of the working circle is 51499.879 ha.

General condition of fauna & flora :

The forest area of Amravati forest division is found in scattered & small to medium blocks of forests. Never the less, ample number of wildlife are found in these forests.

Special objects of management:

- To educate & motivate local people for wildlife conservation.
- To conserve wildlife.
- To develop habitat.

Method of Treatment :

No regular schemes are being prescribed for the management of wild animals in this tract. However creation of environment of security to wildlife, increasing infra structure for wildlife management & trying to restore the status of wildlife in this tract.

VIII) Working plan for miscellaneous working circle:

This working circle includes the areas handed over to other department but not notified. The total area of this working circle is 1509.566 ha. No treatment has been prescribed.

Miscellaneous regulations:

- i) **Demarcation of coupes:-** Annual coupes will be demarcated by cutting and clearing 3 meter wide line and erecting stout durable pillars of about 30 meter in length in a line.
- ii) **Section:-** The coupe shall be divided into four sections. Each section will be demarcated by 1.5 meter wide cut lines. Trees above 45 cm. In girth will be given a two coal-tar bands 15 cm apart, the lower coal-tar band being at breast height.
- iii) **Unworkable coupes:-** It will be demarcated by giving two geru bands and a serial number on selected trees on the periphery.
- iv) **Marking technique:-**
- (a) All trees to be felled will be given a geru band and will bear a distinct hammer mark at Breast Height and at base.
- (b) Trees of valuable timber species of 45 cm. Girth and over and all other species over 60 cm. girth at breast height will bear digit serial number.
- (c) All remaining trees shall bear serial numbers, which shall be given by coal tar.

ABBREVIATIONS USED IN THE PLAN

ACF	:	Assistant Conservator of Forests
AR	:	Artificial Regeneration
C.A.I.	:	Current Annual Increment
C.B.O	:	Cutting Back Operation
C.W.R.	:	Coppice With Reserve
C.C.T.	:	Continuous Contour Trench
Cum	:	Cubic Meter
Comptt.	:	Compartment
Dn.	:	Division
F.L.C.S.	:	Forest Labourer's Co-operative Society
FRSSU	:	Forest Resources Survey Scheme Unit
F.S.	:	Felling Series
F.Y.O.	:	First Year Operation
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.	:	Hectare
JFMC	:	Joint Forest Management Committee

M.A.I.	:	Mean Annual Increment
M.S.L.	:	Mean Sea Level
N.W.F.P.	:	Non Wood Forest Produce
N.R.	:	Natural Regeneration
No.	:	Number
P.A.	:	Protection Area
P.A.I.	:	Periodic Annual Increment
P.B.	:	Periodic Block
P.F.	:	Protected Forest
P.P.O.	:	Pre Planting Operation
P.Y.O.	:	Preliminary Year Operation
R.F.	:	Reserved Forest
R.F.O.	:	Range Forest Officer
S.C.I.	:	Selection Cum Improvement
S & M	:	Soil and Moisture
S.O.F.R.	:	Survey of Forest Resources
S.Y.O.	:	Second Year Operation
T.Y.O.	:	Third Year Operation
W.C.	:	Working Circle
W.S.	:	Working Series