



सत्यमेव जयते

GOVERNMENT OF MAHARASHTRA

**WORKING PLAN
FOR
DHULE FOREST DIVISION
OF
DHULE CIRCLE**

**VOLUME-I: TEXT
(PART-I & II)
PERIOD: 2016-17 TO 2025-26**

BY

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CONSERVATOR OF FORESTS
Working Plan Division, Dhule**

FOREWORD

This present Working Plan of Dhule Forest Division encircles the whole Dhule District and replacing the two Plans of erstwhile different divisions which are now reorganized into one Division. The completion of this Plan is a brilliant effort in short span of time on the part of Shri R.M.Dayal, IFS. The forest area has been stock mapped and enumerated in a 15 cm. girth class. The data has been critically scrutinized by the Chief Forest Statistician at Nagpur. The data has been incorporated in the relevant sections of this Working Plan.

The whole Plan is well documented and is a brilliant documented effort to manage the forest resources on a sustainable basis. An attempt has also been made to rejuvenate the depleted forest by raising soil compatible species. As a matter of perfect document will it may be depends on its implementation. It is presumed that the Plan will be implemented in a letter and spirit.

An attempt has also been made to use G.I.S. technology for generation of maps for the Division. These maps once generated will go a long way in preparation of treatment map and future stock.

Today, the forest is most adversely affected due to certain extraneous agencies like fire, theft of timber and above all due to encroachments, and these detrimental agencies are often beyond control and do effect management practice. No prescription can be draft in the Plan to care of these factors. Only the control measures have been prescribed in the Plan.

Shri R.M.Dayal, IFS, and his team has done a commendable job in completing this Plan, which was in abeyance for last 25 years.

(Dr.V.D.Chafekar)

**Additional Chief Conservator of Forests,
(Working Plan-West), Pune.**

PREFACE

The present Dhule Forest Division came into existence with effect from 01.01.2008 after reorganization of the then North Dhule Forest Division and West Dhule Forest Division. The Working Plan of the then North Dhule Forest Division (R.L.Chaudhary's Plan (1970-71 to 1989-90), comprising Shirpur, Sangvi, Shahada and Boradi Ranges and expired in 1990. The Working Plan of old West Dhule Forest Division (S.H.Patil (1997-98 to 2006-07) expired in 2006-07, comprising Dhule, Sindhkheda, Sakri, Pimpalner, Kondaibari, Nawapur, Chinchpada and Nandurbar Ranges.

The area 1911.351 ha., covered under this Plan includes Boradi, Sangavi and Shirpur Ranges of the erstwhile North Dhule Forest Division and Dhule, Sakri, Sindhkheda, Pimpalner and Kondaibari Ranges of the old Dhule Forest Division. The proposed plan period is 2016-17 to 2025-26.

The preliminary Working Plan Report prepared by S.S.Dole, DCF (Territorial) Dhule and Sarvesh Kumar, CCF (Territorial) Dhule was approved by the Forest State Committee on 13th March 2007 subject to certain modifications. R.M.Dayal, IFS, C.F., WPC Dhule completed the draft plan of Dhule Division with few modifications were made as per new National Working Plan Code. The observations of the State Committee have been taken into consideration while preparing this Plan.

The stock mapping and enumeration for the entire Division have been carried out for the first time in its history. There is special emphasis in this Working Plan is on protection and settlement of encroachment cases. New chapters have been added on Eco-tourism and Encroachment (Management). As Non-Timber Forest Produces (NTFP) was giving no revenue for many years, the chapter has been omitted.

Another development is the 73rd Constitutional Amendment and Forest Rights Act, 2005 which gives right to major forest produce to the Gram Panchayats. The State Government has also carried out suitable modifications in the existing Acts and has given the right of minor forest produce (excluding Tendu, Apta and Bamboo) to the Gram Panchayats. The Panchayats are yet to absorb the spirit of these legislations and initiate action to take full advantage of them. Adequate considerations about these legislative measures are incorporated in plan.

I am very much thankful to Dr. B.D.Chafekar, IFS., Addl. Principal Chief Conservator of Forests, Working Plan Circle (West) Pune, Dr. V.S.Bardekar, IFS, Addl. Principal Chief Conservator of Forests, Working Plan Circle, Pune for his valuable guidance and encouragement in finalization of DWPR. I am also thankful to Smt. Sunita Singh, Chief Conservator of Forests (Territorial), Dhule for extending necessary co-operation and her valuable suggestions.

I am extremely thankful to Shri S.G.Chopde, IFS, Dy. Conservator of Forests and the staff of Dhule Forest Division without whose cooperation, this DWPR could not have been completed.

I keep on record the assistance of following subordinate staff associated with preparation of this Working Plan.

- 1) Shri B.B.Nikam, R.F.O.
- 2) Shri S.T.Pawar, Surveyor.
- 3) Shri P.R.Katkar, Surveyor and
- 4) Shri L.D.Chavan, Clerk.

(R.M.Dayal)
Conservator of Forests,
Working Plan Division, Dhule.

**(i) List of common trees, shrubs, herbs, climbers, bamboos and Grasses
Occurring in the forests of Nandurbar Forest Division, with vernacular names**

Local Name	Botanical name
(A) Trees.	
Ai	Morinda tinctoria
Amba	Mangifera indica
Apta	Bauhinia racemosa
Asana	Bridelia retusa
Asta or payar	Ficus arnottiana
Bel	Aegle marmelos
Behada	Terminalia belerica
Bahawa	Cassia fistula
Bhutkes	Cassine glauca
Bondara	Lagerstroemia parviflora
Bor	Zizyphus mauritiana
Charoli	Buchanania lanzan
Chinch	Tamarindus indica
Dhaman	Grewia tiliaefolia
Dhawada	Anogeissus latifolia
Ghatbor	Zizyphus zylopyra
Haldu, Hed	Haldina cordifolia
Hiwar	Acacia leucophloea
Jambhul	Syzygium cumini
Kalamb	Mitragyna parvifolia
Kakad	Garuga Pinnata
Kandol or Kadai	Sterculia urens
Karanj	Pogamia pinnata
Khair	Acacia catechu
Kusum	Schelichera oleosa
Kudi	Wrightia tinctoria
Kumbhi	Careya arborea
Mahuwa	Madhuca longifolia var latifolia
Medsing	Dolichandrone falcata
Modhal	Lannea coromandelica
Neem	Azadirachta indica
Palas	Butea monosperma
Papada (Papadi)	Holoptelea integrifolia
Panagara	Erythrina variegata
Phasi	Dalbergia paniculata
Peepal	Ficus religiosa
Sadada	Terminalia tomentosa
Sag	Tectona grandis
Salai	Boswellia serrata

Local Name	Botanical name
Sawar	Bombax ceiba
Shiras	Albizia lebbek
Shivan	Gmelina arborea
Sitaphal	Annona squamosa
Temburni	Diospyros melanoxylon
Tiwas	Ougenia oojeinensis
Umber	Ficus glomerata
(B) SHRUBS.	
Karvi	Strobilanthes callosus
Karvand	Carissa carandus
Kavani (murud sheng)	Helicteres isora
Nirgudi	Vitex negundo
Nivdung	Euphorbia nerifolia
Rui	Calotropis gigantia
(C) HERBS	
Chirchira (Aghada)	Achyranthes aspera
Rankel (Chivni)	Ensete superbum
Rantulus	Ocimum basilicum
Tantani (Ghavati)	Tridax procumbens
(D) CLIMBERS.	
Chilhar	Caesalpinia sepiaria
Gunj	Abrus precatorius
Gulwel	Tinosporia cordifolia
Kadu – Karand	Dioscorea bulbifera
Kuhili	Mucuna pruriens
Sagargota	Caesalpinia bonducella
Shatavari	Asparagus recemosus
Vasan	Cocculus villosus
(E) BAMBOOS	
Manvel	Dendrocalamus strictus
Kashti, Katang	Bambusa arundinacea
(F) GRASSES	
Phulora	Themada quadrivalvis
Kusali	Heteropogon contortus
Paunaya (marvel)	32Dicanthium annulatum
Rosha	Cymbopogon martinii
Sheda (Paunaya)	Sehima nervosum

**(ii) List Of Wild Animals, Birds And Snakes Found In Nandurbar Forest
Division**

Sr.No.	Local Name	English Name	Zoological Name
WILD ANIMALS			
1	Wagh	Tiger	<i>Panthera tigris</i>
2	Biblya or Bibtya	Panther	<i>Panthera pardus</i>
3	Taras	Hyena	<i>Hyaena hyaena</i>
4	Kolha	Jackal	<i>Canis aureus</i>
5	Khokad	Grey Fox	<i>Vulpus bengalensis</i>
6	Ran Dukkar	Indian Wild Boar	<i>Sus Scrofa</i>
7	Kalvit	Black Buck	<i>Antilope cervicapra</i>
8	Chinkara	Indian Gazelle	<i>Gazella gazella</i>
9	Bhekar	Barking Deer	<i>Muntiacus muntiak</i>
10	Mungoos	Common Mongoose	<i>Herpestes edwardsi</i>
11	Ran Manjar	Wild Cat	<i>Felis chaus</i>
12	Salu or Sayal	Porcupine	<i>Hystrix indica</i>
13	Sasa	Indian Hare	<i>Lepus nigricollis</i>
14	Khadi (Khar)	Fivestriped Palm Squirrel	<i>Funambulus pennanti</i>
BIRDS			
1	Baya	Baya Weaver Bird	<i>Ploceus philippinus</i>
2	Dharadwaj	Crow Pheasant of Coucal	<i>Centropus sinensis</i>
3	Chota Basant	Crimson fronted Barbet or Coppersmith	<i>Megalaima haemacephala</i>
4	Chimni	House Sparrow	<i>Passer domesticus</i>
5	Deshi Myna	Common Myna	<i>Acridotheres tristis</i>
6	Ghar	Black shouldered Kite	<i>Elanus caeruleus</i>
7	Ghar	Parian Kite	<i>Milvus migrans govinda</i>
8	Ghubad	Brown Wood Owl	<i>Strix leptogrammica</i>
9	Ghubad	Indian Screech Owl	<i>Stix javanica</i>
10	Ghubad or Pingla	Spotted Owlet	<i>Athene brama</i>
11	Harial	Common green pigeon	<i>Teron phoenicoptera</i>
12	Holga	Laughing Dove	<i>Streptopelia senegalensis</i>
13	Holga	Spotted Dove	<i>Streptopelia chinensis</i>
14	Kabutar	Blue Rock Pigeon	<i>Columba livia</i>
15	Kala Baza	Indian Black Ibis	<i>Pseudibis papillosa</i>
16	Kala Teetar	Grey Partridge	<i>Francolinus pondiceranus</i>
17	Khandya	Common or Small Blue Kingfisher	<i>Alcedo atthis</i>
18	Khandya	Pied Kingfisher	<i>Ceryle rudis</i>
19	Kokila	Koel	<i>Eudynamys scolopacea</i>
20	Kotwal	Black Drongo or King Crow	<i>Dicrurus adsimillus</i>

Sr.No.	Local Name	English Name	Zoological Name
21	Kotwal	Greater Racket tailed Drongo	Dicrurus paradiseus
22	Lahuri	Jungle Bush Quail	Perdicula asiatica
23	Lal Munia	Red Munia	Estrilda amandava
24	Mor	Common peafowl	Pavo cristatus
25	Nilkanth	Indian Roller or Blue Jay	Coracias benghalensis
26	Patringa	Little Green Bee Eater	Merops orientalis
27	Peelak	Blackhooded Oriole	Oriolus xanthornus
28	Peelak	Goldern Oriole	Oriolus oriolus
29	Popat	Rose ringed parakeet	Psittacula krameri
30	Satbhai	Common Babbler	Turdoides caudatus
31	Satbhai	Jungle Babbler	Turdoides striatus
32	Shikra	Shikra	Accipiter badius
33	Shimpi	Tailor Bird	Orthotomus sutorius
34	Sutar	Mahratta Woodpecker	Picoides mahrattensis
35	Tambat	Hoopoe	Upupa epops
36	Gai Bagala	Cattle Egret	Bubulcus ibis
37	Bagala	Grey Heron	Ardea cinerea
38	Bagla	Pond Heron or Paddy Bird	Ardeola grayii
39	Pan Kawla	Little Cormorant	Phalacrocorax niger
40	Pan Kombadi	White breasted waterhen	Amaurornis phoenicurus
41	Titavi	Red Wattled lapwing	Vanellus indicus
42	Kala Pidda	Pied Bushchat	Saxicola caprata
43	Swargiy nartak	Asian Paradise flycatcher	Terpsiphone paradisi
44	Dhanesh	Common Grey Hornbill	Tockus birostris
45	Telia munia (Sinewas)	Spotted Munia	Lonchura punctulata
46	Myna	Indian Night jar	Caprimulgus asiaticus
47	Khandya	White Breasted King fisher	Halcyon smyrnensis
48	Chuvak	Indian Robin	Sazicoloides fulicata
49	Dyal	Magpie Robin	Copsychus saularis
50	Khatik	Bay backed Shrike	Lanius vittatus
51	Jambhal Surya Pakshi	Purple Sunbird	Nectarinia asiatica
52	Ababed Leishra	Swallow	Hirundo rustica
53	Leishra	Wiretailed Swallow	Hirundo smithii
54	Myna	Tree Pie	Dendrocitta vagabunda
55	Parit	Gray Wagatail	Motacilla capsica

(iii) Glossary Of Local Terms Used

Sr.No.	Local Terms	MEANING
1	Adiwasis	Aboriginal, the original and primitive natives of the territory.
2	Injalli species	Junglewood or species other than teak
3	Rab	An area burnt with debris etc. for planting.
4	Gully	A State in soil erosion earlier to the formation or nala
5	Katha	A produce obtained from catechu used for tanning.
6	Kuran	A pasture land for grass cutting usually closed to grazing
7	Nalla	A small stream.
8	Murram	Soil with an admixture of pebbles and stones of varying hardness
9	Mor	<i>Panicum miliaceum</i> var. <i>ghoti sava</i>
10	Rala (foxtail millet)	<i>Setaria italica</i>
11	Bunty (wild Rice)	<i>Onyza sativa</i> var. <i>fatua</i> . Red Rice
12	Gaothan area	Village habitation area
13	Chulha	Local earthen Shegadi (Hearth)

ABBREVIATIONS USED

A.C.F.	Assistant Conservator of Forests.
B.H.	Breast Height
C.B.O.	Cutting Back Operation
C.C.T.	Continuous Contour Trench
C.C.F.	Chief Conservator of Forest.
C.A.I	Current Annual Increment
C.W.R.	Coppice with Reserve
C.F.	Conservator of Forest
Compt.	Compartment
D.C.F.	Deputy Conservator of Forest
D.F.O.	Divisional Forest Officer
D.P.A.P.	Drought Prone Area Programme
Dept.	Department
Dist.	District
Dn.	Division
E.G.S.	Employment Guarantee Scheme.
F.L.C.S.	Forest Laborers Co-operative Societies
F.D.C.M.	Forest Development Corporation of Maharashtra Limited
F.R.H.	Forest Rest House.
F.S.	Felling Series.
G.B.H.	Girth at ik Breast Height.
Govt.	Government.
H.Q.	Head Quarter.
I.F.A.	Indian Forest Act.
J.F.M.	Joint Forest Management
M.A.I.	Mean Annual Increment
M.F.P.	Minor Forest Produce
M.P.A.U.	Mahatma Phule Agriculture University
M.S.L.	Mean Sea Level
M.S.	Maharashtra State
M.D.	Man Days.
N.T.F.P.	Non Timber Forest Produce
P.B.	Periodic Block
P.F.	Protected Forest
P.W.D.	Public Works Department
P.W.P.R.	Preliminary Working Plan Report.
R.F.	Reserve Forest
R.F.O.	Range Forest Officer
T.C.M.	Trench Cum Mound
V.S.F.	‘V’ Shaped Furrow.
Vol.	Volume.
W.C.	Working Circle
W.M.P.Dn.	Watershed Management & Planning Division
Z.P.	Zilla Parishad.

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CHAPTER-I

THE TRACT DEALT WITH

SECTION-1: NAME AND SITUATION

- 1.1 This Working Plan deals with the entire reserved forests, protected forests and unclassed forests of Dhule Forest Division of Dhule Forest circle. The total forest area of 191756.850 ha. of this division. The area is spread over in four talukas, namely, Dhule, Shindakheda, Sakari, and Shipur talukas of Dhule district. The Divisional headquarter situated at Dhule.
- 1.2 The division is divided into eight territorial ranges namely Boradi, Sangavi, Shirpur, Shindakheda, Dhule, Sakri, Pimpalner and Kondaibari. The forest are situated between $21^{\circ}04'03''$ north latitude and $74^{\circ}49'94''$ east longitude. The boundaries of the division are as follows:
- | | | |
|--------------|---|---|
| North | – | The boundaries of Nandurbar district and Badavani district of Madhya Pradesh. |
| South | – | Revenue lands Nashik district and Jalgoan district. |
| West | – | Revenue lands Nashik district and Gujrat state. |
| East | – | Revenue lands Jalgoan district. |
- 1.3 The area covered under this plan includes Boradi, Sangavi, and Shirpur, ranges of the erstwhile North Dhule Forest Division and Dhule , Sakari, Shindakheda, Pimpalner and Kondaibari ranges of the old Dhule Forest Division. The present Dhule Forest Division came into existence with effect from 01-01-2008.
- 1.4 The Working Plan of the then North Dhule Forest Division (R.L.Chowdhary's plan [1970-71 to 1989-90]), comprising expursd in 1990. The working plan old Dhule Forest Division (S.H.Patil's plan [1997-98 to 2006-07], expired in 2006-07.

SECTION-2: CONFIGURATION OF THE GROUND/TOPOGRAPHY

1.2.1 The forests are spread over the hill ranges of Sahyadri and Satpuda running north to south. The western part of the division i.e. Pimpalner and Kondaibari are marked by rugged terrain with precipitous slopes, as compared to the eastern ranges. Following are the important peaks I Dhule Forest Division.

Table – 1

1	Fort Lallig	594 M.
2	Fort Songir	290 M.
3	Mangitungi	323 M.

Source : D C F Dhule

1.2.2 The area drains into Tapi river basin, which enters the district at the southeastern corner and flows almost parallel to the R.F. boundary through a broad and fertile plain in the westerly direction. The Tapi river is the boundary which separates Shindakheda taluka of this forest division with Shahada Taluka. The main tributaries of Tapi are Panjra, Burai, Kan, Amaravati ,Arunavati and Bori. The Tapi Skirps the East to West. The tributaries of the river Tapi flowing through these forests are Burai, Panjara, and Kan draining the northern slopes of sahyadri and Satpuda.

SECTION-3: GEOLOGY, ROCK AND SOIL

1.3.1 The rock formation of the area includes:

Age	Name of the formation
Recent	Soil
Pleistocene recent	Laterite.
Upper - cretaceous Eocene..	Deccan traps.

1.3.2 **DECCAN TRAPS:**

These are the most extensive rocks in the area, also called “Plateau Basalt or Deccan plateau” because of their tendency to form flat topped plateau features, with basaltic composition. At the close of Mesozoic era, occurred, outpourings of voluminous lava flows, which spread over vast areas. The flows are called traps, because of their step like or terraced appearance of in outcrops. These trap flows are distinguished into

vesicular and non vesicular types. Satpudas form a broad belt of mountain ranges running from east to west, dividing the valley of Narmada on North and Tapi on South. Deccan traps cover almost the whole area except a few narrow strips of alluvium on both sides of the major streams. These trap rocks are the result of outpouring of enormous lava flows at the close of Mesozoic era. The traps of Deccan basalts have Plagioclase, Feldspar, and Labrodorite and pyroxene Agate as main minerals. These trap formations are distinguished into vesicular and non-vesicular types. Traps weather to give rise to black cotton soil. In north of Narmada, ash breccias are abundant amongst the rocks exposed. Some of these dykes are coarse – grained and are composed of feldspar and granular greyish agate. Minerals of economic importance have not been recorded from the area. The area abundance in limestone, which belongs to infra trappean age and is correlated with Bagh Beds, occurring in horizontal strata between the lower and upper sandstone formations. However the limestone here is somewhat impure containing a high content of silica. The geological formation is Deccan Trap all along.

1.3.3 LATERITES:

Laterites form a thin cover over Deccan traps at few places, which in general is vesicular.

SECTION-4. SOIL

1.4.1 The soil is generally black loam in the flatter areas. It is reddish to buff coloured, along the gentle and moderate slopes. The soil tends to be reddish with a high proportion of murum in areas, which are exposed. In parts, where erosion has been on an increasingly large scale, the underlying rock was exposed. Exposure of underlying rock is also quite common along the steep and precipitous slopes. At the feet of the ridges of Shayadris the soil is fairly deep and is black loam in structure, capable of supporting a good tree crop. It is a deep rich alluvial loam capable of supporting good quality high forests. At the foot of Sahyadry, the blackish – loamy character of the soil is maintained. The soil along slopes of Sahyadris is reddish mixed with gravel. On deep rich slopes, huge boulders are seen exposed and where the soil cover still exists the underlying rock has not been exposed. At places where the soil cover has become thin, underlying rock is exposed.

- 1.4.2 On the plateau, though the blackish loamy character of the soil is seen along the nallah banks, the depth is not much. Comparatively on flatter portions, the depth of the soil is quite poor and the soil is reddish to buff coloured. Along the moderate slopes, the soil depth is practically lost and the underlying rock is partially exposed, making it a refractory site. It does not support any tree growth.
- 1.4.3 Along steep slopes sheet rock is found completely exposed. Occasional occurrence of kankar along the nallah banks is also observed.
- 1.4.4 The basaltic rock disintegrates and produces soil of varying depth, colour and texture. The following broad soil types are noticed in the region:
1. Coarse shallow soils. (High altitudes) :
 2. Medium black soils. (Plains) : Trap Origin.
 3. Deep black soils (Valleys) :

SECTION-5: CLIMATE

- 1.5.1 The annual average rainfall is 555.10 mm. Monsoons are from June to September. In the northern parts of Shirpur talukas, the average annual rainfall ranges from 543.90 to 566.30 mm. Other talukas receive rainfall in the range of Sakri taluka 543.90 to 566.30 mm. of the rainfall is received during the period,
- 1.5.2 The recorded average minimum temperature in January is 20.01 C experiences comparatively lower temperature than the plain, due to its higher elevation and the surrounding wooded areas. Mercury soars Kondaibari, Pimpalner in Sakri Taluka during peak summer, whereas it dips to 20 C during peak winter.
- 1.5.3 Hot and dry wind blow from the beginning of March and last till the beginning of south west monsoon in July.
- No significant damage to the crop has been noticed on account of frost.
- 1.5.4 The last twelve years data of Maximum and minimum temperature and average annual rainfall is given in Table -2 below.

Table-2

Sr. No.	Year	Max. Temp.(C)	Min. Temp (C)
1	2000-01	40.78	32.91
2	2001-02	34.80	29.09
3	2002-03	34.80	29.09
4	2003-04	33.30	27.93
5	2004-05	33.67	27.37
6	2005-06	35.35	26.25
7	2006-07	33.07	23.06
8	2007-08	31.78	20.01
9	2008-09	36.54	21.02
10	2009-10	34.28	22.08
11	2010-11	31.25	23.04
12	2011-12	33.68	20.68
13	2012-13	33.70	21.32

Source : D C F Dhule

SECTION-6: WATER SUPPLY

- 1.6.1. The massive and fine-grained trap is unsuitable for ground water storage. It is through joints and fissures in them that the rainwater percolates and accumulates in the weathered portions, which are the most reliable source of groundwater in the trap. The baked or highly vesicular portion between trap flows also provides the passage or channel way for percolating rainwater. However it is uneconomical to install tube wells in these hard rocks.
- 1.6.2. Track generally experiences shortage of water during the hot season. Perennial supply of water is available in regions adjoining rivers and tributaries like Tapi, Panjara, Kan, Burai, Bori, Amaravti and Arunavati.
- 1.6.3 In many areas, the water level in the wells go very low in the summer and people experience great difficulty in getting sufficient quantity of water. Often people are forced to dig “Jhiras” in the streambeds to obtain water.

SECTION-7: HEALTH

1.7.1 No major or minor problem is specific to this area, that abundance in forest.

SECTION-8 : DISTRIBUTION OF AREA

1.8.1 The total area of Dhule Forest Division at Dhule District is distributed in 45 G.S.D.A. Sub watersheds. The abstract of G.S.D.A. Watersheds, including sub, mini and micro watersheds of Dhule Forest Division is given in **Appendix-I**.

SECTION-9 : CHANGE OF AREA

1.9.1 There had been quite a few changes in the forest area of this division, since the last plan. The area covered under this plan includes Shirpur Sangvi, Boradi ranges of the then North Dhule Forest Division and Dhule, Shindkheda, Sakri, Pimpalner and Kondaibari ranges of the then West Dhule Division. The present Dhule Forest Division came into existence with effect from 01-01-2008

1.9.2 A total of 1506.60 Ha. of R.F. area has been diverted for various purposes since 1970.

1.9.3 No area has been handed over to F.D.C.M. for their working.

1.9.4 Non forest area admeasuring 948.91 ha. has been taken over under compensatory afforestation scheme and has been declared as P.F. The range wise forest area presently under the charge of Dhule Forest Division is as follows in Table-3 below:

Table-3

Sr. No.	District	Taluka	Range	Reserved Forest (In sq. km.)	Protected Forest (In sq. km.)	Unclassed Forest (In sq. km.)	Total Forest area (In sq. km.)
1.	Dhule	Shirapur	Shipur	230.241	00	0.049	230.29
			Sangvi	246.910	00	00	246.91
			Boradi	245.420	00	00	245.42
		Shindakheda	Shindakheda	139.847	2.089	29.803	171.739
		Dhule	Dhule	297.550	1.614	1.563	300.727
		Sakari	Sakari	238.970	2.573	00	241.543
			Pimpalner	280.341	1.745	00	282.086
			Kondaibari	198.371	0.478	00	198.849
Total for Division				1877.65	8.499	31.415	1917.564

Source D C F Dhule letter No

1.9.6 The change of area for each range is given in following Table-4 below. The change in area is due to G.I.S.

SECTION-10 : STATE OF BOUNDARIES

1.10.1 The artificial boundaries of the Division have been marked with loose stone cairns. The position of these cairns has been shown on 1 c.m. = 320 m. scale map. These cairns are not of any use in the present situation and many of them need extensive repairs and that is the reason that the division has now started erecting permanent concrete pillars. However the work has been stopped for want of funds. The government may think of declaring these pillars as revenue pillars under Section 140/142 of Maharashtra Land Revenue Code, 1966.

SECTION-11: LEGAL POSITIONS

1.11.1 All the forest areas in the Division with the exception of the areas falling in un-surveyed villages, had been duly constituted as R.F., between the year 1879 to 1910. Non-forest area taken over for raising compensatory afforestation, have been declared as protected forests. However, there are still 33.844 Sq.km. of unclassed forests, yet to be brought under Reserved Forests. There is an urgent need to send a proposal to the Revenue Commissioner for its notification under Section 4 of Indian Forest Act, 1927; and its subsequent reservation under Section 20. A similar action is required for protected forest in the Division. The extent of the Protected Forests in this division is 1.374 sq. km.

1.11.2 The forest areas of un-surveyed villages were included in the previous plan, as unclassed forests. However these areas have been subjected to severe encroachments in the past and the long pending work of surveying and declaring these areas as reserved forests needs to be taken up on a war footing. The list of notification with the extent of forest area in the notification is given in **Appendix II.**

1.11.3 To facilitate the provision of reservation and the subsequent mapping of the area by the forest officer, the Government of Maharashtra vide its notification No. 30/10/2000/CR.456/F-6, under Section 72(i) (a) of Indian Forest Act, 1927, has delegated the power to survey upon any land. This will ultimately help in the process of reservation.

SECTION-12: MAPS.

1.12.1 There are 4 toposheets of scale 1:50,000 and 61 toposheets of scale 1:15,000 scale.

Table-5

DHULE FOREST DIVISION TOPOSHEET Nos.

Sr. No.	Map 1:50,000	Map 1:25,000	Map 1:15,000	Village Maps
	Toposheet No.	Toposheet No.	Toposheet No.	
1	46/0/3	Nil	255/NW/4	Out of 241 Villages, 185 village maps of bandobast are available in the Division.
2	46/0/2		255/SW/4	
3	46/K/15		255/NW/3	
4	46/K/14		255/SE/IW	
5			255/Sw/I	
6			256/NE/3	
7			256/NE/4	
8			256/NW/2E	
9			255/SE/3	
10			255/SW/2	
11			255/SE/4	
12			255/SE/2	
13			255/Sw/I	
14			254/SE/3W	
15			254/NW/3W	
16			255/NW/2	
17			255/NE/1	
18			254/SE/1	
19			254/NW/2	
20			254/SW/2W	
21			254/SW/4	
22			222/SE/2	
23			254/SW/1	
24			223/NE/2	
25		Nil	255/NW/1	
26			222/SE/2	
27			255/NW/1	
28			222/SE/4	
29			222/NE/4	
30			221/SE/4	
31			254/Sw/3	
32			254/NW/3	
33			222/SE/3	
34			222/NE/1	
35			222/NW/4W	
36			222/SW/2	
37			222/SE/1	
38			223/NE/4	
39			223/SW/1	
40			223/NE/3W	
41			223/NW/4	
42			223/SW/3	
43			223/SE/1	

Sr. No.	Map 1:50,000	Map 1:25,000	Map 1:15,000	Village Maps
	Toposheet No.	Toposheet No.	Toposheet No.	
44			188/SE/4	
45			223/SE/4	
46			223/NW/3E	
47			189/NE/2	
48			223/NW/1	
49			255/SW/1	
50			189/SE/2E	
51			189/NE/4E	
52			189/NE/2	
53			222/SW/4	
54			223/SE/2	
55			223/SE/4	
56			188/NW/4	
57			223/SW/2	
58			223/NW/2	
59			223/SE/2	
60			223/SE/2	
61			223/NE/2	

Source D C F Dhule Letter no surve 1501-deted 11-12-2013

SECTION-13: List of Notification.

1.13.1 The list of the notifications is given in Appendix-III.

SECTION-14 : RIGHT AND CONCESSIONS

1.14.1 **Rights :** The only public rights, with which these forests are burdened, are rights of way and access to water.

1.14.2 **Concessions:-** As regards concessions, these are enjoyed in accordance with the forest privileges code which forms a part of Bombay Forest Manual Vol. III part C section 93. The villagers are aware of the privileges allowed to them. Section 95 extends to all ranges in the division. Section 95 of Bombay Forest Manual Vol. IV part C is reproduced as below.

Special privileges for the East and West Khandesh Districts (in addition to the General Privileges)

1.14.2.1 Cutting and removing grass including baru from such portions of closed forest as the Divisional Forest Officer or the Sub-Divisional Forest Officer may permit (in additional to that from open forest which the villagers may remove under General Privilege 8)

- 1.14.2.2 Collecting deadwood other than teak (Tectona grandis), khair or such portions of closed forest as the Divisional Forest Officer or the Sub Divisional Forest Officer may permit.
- 1.14.2.3 Taking teak leaves from open forest or such portions of closed forest as the Divisional Forest Officer or the Sub-Divisional Forest Officer may permit when required for the villagers own use. (R.4409 of 5.5.1911)
- 1.14.2.4 Removal of Karvi (Madhuca indica) by head loads for agricultural purposes.
- 1.14.2.5 Removal of moha (Madhuca indica) fruit for the gatherer's own use or for sale. (R.8691/33 of 12.7.1941)
- 1.14.2.6 Removal by forest villagers in the areas named below of thorns in head loads or cart loads or both for their own agricultural and domestic purposes:-
- 1.14.2.7 Carts will be allowed to go off the recognized tracks within a quarter of a mile of the area of supply in open areas but only along recognized tracks in closed areas.
- 1.14.2.8 Free permits for removal of thorns in cart loads should be obtained by the villagers who are entitled to them, from the Round or Depot officers as and when required from 1st November to 30th June of each year.
- 1.14.2.9 For the purpose of this concession the following species of thorns are allowed to be removed:-
1. Amoni. (Rhus mysorensis)
 2. Arati, arpur (Mimosa hamata).
 3. Henkal (Gymnosporia emarginata) (R.L.A. 6 of 2.8.1930)

These rights and concessions are now of historical value only and do not exist in reality at present. As of now, most of these special privileges are of de facto absent and are of academic value only.

- 1.14.3 Forests Rights Acts:** Under the law enacted a total of 21753 tribals have put claims for the forest lands. All these applications have been accepted by Gram Sabha. The SDO committee has accepted 18325 claims so far. The 13679 - claims have been accepted by District level Committee. The area involved in these -claims is 47540.706 ha. of forests lands. Subsequently claim of further 1111 applicant, involving - ha of forest land, are also accepted by District level committee. Hence a total claim - applicants involving - ha of forest land has been settled by District level Committee till now.

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CHAPTER-II : THE FORESTS

SECTION-1 : COMPOSITION AND CONDITION OF GROWING STOCK

II A- FOREST FLORA

SECTION 1: (i) GENERAL DESCRIPTION AND CONDITION OF THE FOREST

- 2.1.A The forests of this division are entirely deciduous in nature and belong to Group-5, 'Tropical Dry Deciduous Forests' of Champion and Seth's revised classification of Forest Types of India.
- 2.1.A The local types occur on account of soil texture, depth, topography and biotic factors. These have been classed either as edaphic type or serial type depending on its variations. The altitude does not influence the composition of forests to any appreciable extent. The aspect, however, appears to play an important role in determining the composition and density of forests in hilly areas, as it is commonly observed that the northern and western hill slopes are better stocked than the southern and eastern parts. The clayey soils, which tend to be waterlogged, affect the growth adversely. The quality of the crop is also determined to a great extent by the depth of the soil.
- 2.1.3A The biotic factors, which affect the adverse condition of the crop are, frequent occurrence of fires, reckless cutting of tree, grazing and its lopping. The pure crop of teak is seen near habitations, whereas due to repeated hacking and cutting of trees, other species with poor coppicing power are getting disseminated. The areas which are frequently affected by forest fires, the fire-hardy species like teak, dhawda, salai etc. survive due to their corky bark. The places affected by heavy, uncontrolled grazing, unpalatable and thorny xerophytes species show a better chance of survival. The serial type and edaphic type of forest exist frequently in the area. The riparian zone is marked at places with the existence of big sized Terminalia arjuna trees. Normally these sites have been preserved for the benefit of wildlife.
- 2.1.4A Miscellaneous forests with a great diversity of species, including teak, have been noticed to occur in the forests of this division although at places, aggressive species like Salai (Boswellia serrata), Tiwas (Oogema oujenris) and Anjan (Hardmickia binatal) tend to grow almost like a pure crop. At few places, teak tend to occur pure, in number, due to its inherent quality of surviving in arduous conditions.

2.2.2 In the Western part of the tract the forests are of type Dry, teak i.e. 5 AC 1 as per Champion's Classification. The rainfall is moderately good about 1000 mm. And the soil condition is fairly good and as such the tree growth is fairly good. The height of the trees is upto 15-17 meter. The percentage of Teak in the stands varies from 15 to 22 % . Teak is principal species of the stand and the proportion of the other valuable species is quite low, as compared to that of teak. The more valuable species in the order of incidence are : Sadada, Shisham, Sawar, kalamb, Haldu. The density of the stands varies from 0.2 to 0.5. The site quality is of III rd & Iva. The forests of this type are distinctly, divided into one blocks, namely the Umarpata block (Pimpalner Range).

The forests of the Umarpata block are inferior in quality to those in the Hill block. They have a more open appearance. The terrain is very much rugged. The forests have been devastated by fires. In all other respects, they are a kin to those in the Hill blocks. The general floristics of the forests coming under the above type are:

I & II - Tectona grandis, Dalbergia latifolia, Terminalia tomentosa, Pterocarpus marsupium, Acacia catechu, Adina cordifolia, Anogeissus latifolia.

2.2.5 In the central portion that is on the plateau, and along the Sahayadris, the forest are of the type South Indian Dry mixed deciduous forest i.e. 5 AC 3 as per Champion's & Seth's classification. The forest are quite open. The density ranges from 0 to 0.4 The height growth is also poor and seldom exceed 8 to 10 M. Reproduction of teak and miscellaneous species of seedling origin is inadequate the trees mostly hollow and malformed due to excessive damage by fires. On the hilltops and along hill slopes Salai and Modal are found almost gregarious. Attempts of artificial regeneration of miscellaneous species have been made in patches, in the recent years. Teak coppices are present all over the area. Soil erosion is severe. The soil depth is quite low along the moderate and steep slopes The forest are of IV a and IV b quality.

The General Floristics Are :

I & II Tectona grandis Terminalia tomentosa, Anogeissus latifolia, Boswellia serrata, Grewia tiliaefolia, Bombax ceiba, Acacia catechu, Mitragyna parvifolia, Madhuca longifolia, Acaia leucopohloea, Lagerstroemia parviflora, Lannea coroamedelica, Diospryos melanoxyton, Acacia nilotica.

- 2.2.6 The Eastern portion of tract has forest of the type Southern thorn forests i.e. 6 ACI and Hardwickia forest i.e. 5A/E4 as per Champions & Seth's revised classification of forest types. Forest of the type Southern thorn forest spread over the parts of grass reserve i.e. kurans. The Hardwickia type of forests are spread over parts of kurans where almost a pure crop of Hardwickia binata is seen.
- 2.2.7 In the Southern thorn forest the stocking is very poor. The areas are very much open and the tree growth is stunted, malforemed and crooked. The growth in height is poor seldom exceed 8 metre. The growth of grasses is short and the area are heavily grazed. Soil erosion has progressed to a very considerable extent. Soil depth is almost lost along gentle and moderate slopes and underlying rock is found partially exposed. Along steep slopes the underlying rock is completely exposed in the flatter portions the soil fertility is lost. Regeneration of seed origin is absent. Attempts of artificial regeneration made in the past have met with mixed results. Due to heavy demand for grazing it is difficult to successfully establish tree crop in these areas.

The General Floristics are:

I & II : Acacia catechu, Acacia leucophloea, Albizzia amara, Azadirachta indica, Acaia nilotica, Lannea coromandelica, Garuga pinnata, Zizyphus xylopyrus, Bauhinia racemosa.

- 2.2.8 The Hardwickia forests which confirm to Champion & Seth's subsidiary edaphic type under the Southern dry tropical forest i.e. 5 A/E4 are in the Eastern parts of the tract. Hardwickia binata is the principal species of the stands. The areas are all under stocked as the trees of Hardwickia binata which form the top canopy are widely spaced. The height growth is up to 12 metre. The soil is very much impoverished and out crops of the underlying rock are found exposed at places.

The Floristics are :

- I&II: Hardwickia binata, Acacia catechu, Acaia leucophloea, Lannea coromandelica.
- III: Gymnosporia Montana, Cassia tora,

GENERAL DISCRIPTION OF THE GROWING STOCK

2.2.2 The growing stock in dry teak forest is fairly good.but have been badly rocked . These forest areas are potentially capable of producing good timber. In the recent past, they have been subjected to severe biotic interference rendering most of the areas either barren or under stocked. In the well stocked areas, fires damaged the regeneration of teak and other valuble Species. The site quality is degrading fast because of frequent fires, grazing and illicit cutting.

The forest of the type, Southern tropical dry deciduous forests are minor forests. These areas are not capable of producing large sized timber. These forest were subjected to large scale biotic interference, resulting most of the areas blank devoid of any vegetation. Large scale afforestation were taken up in the area in the recent years and vegetal cover was brought back in few areas. Miscellaneous species such as Subabul, Neem and Shiras were planted. Many parts of the area are still understocked. While afforesting the area Teak was not planted. But coppies of Teak can be seen in the area, showing that Teak was the principal species of the area in the past.

2.2.3 In forest of the type Southern thorn forest the stocking is Sparse, soil, erosion is severe and the depth of the soil, even on comparatively flatter area is less in most parts of the afrea mother rock was totally exposed calling for immediate attention for the closure and re-biosement of these areas. The tree growth is stunted. In the recent years, large scale afforestations works have been carried out in the area.

2.2A The composition of the forests is altered to varying degrees by the interference of biotic factors. The following main types (as per Champion and Seth's Revised Survey of Forest Types of India, 1963) and local sub-types are distinguished for the purpose of describing these forests.

(a) Forest classification as per Champion & Seth.

Group-5 – Tropical Dry deciduous forest.

Group-5A- Southern tropical dry deciduous forest.

Forest Type-

- (i) 5AC₁-Dry teak bearing forest.**
- (ii) 5AC_{1b}-Dry teak forest.**
- (iii) 5AC₃- Southern dry mixed deciduous forests**
- (iv) 5/DSI – Dry Deciduous Scrub Forests**
- (v) 4E – Tropical Reparion Fringing Forests.**

Sub-group – 5A C₃-Southern dry mixed deciduous forest.

All above sub types have been described in brief in the following paragraphs and the details of main vegetation association and other important characteristics of the crop are also indicated therein.

2.2.IA Southern Tropical Dry deciduous Forests

5AC₁-Dry teak bearing forest. – This type of forest is now found in depression with good well drained soil and in other places in a deep soil. The teak is somewhat straight boled in shape and the canopy is fairly complete, except at places where the human interference has adversely affected the composition due to large scale encroachment. However, the soil condition indicates that these areas once had supported these Dry teaks bearing forest. This forest type has by now retreated at many places.

2.2.2A Sub type-5AC₁1b-Dry teak forest – Dry teak forest- This forest is usually found well spread over the entire division, and especially on the dry part of the hill portion situated in hilly and undulating, terrain and on slopes, that are often steep to precipitous. The soil is often deep and fertile in the lower hill slopes, in depressions and in narrow strips on both sides of nallah banks, but is usually shallow, and murrummy on the upper hill slopes. Outcrops of rocks are frequently seen on the upper hill slopes and hilltops. Site quality associated with it, is usually IV a, and the height of the crop rarely exceeds 15meter in the drier portion. In depression with good deposit of soil, the height may exceed up to 21 meter, corresponding to site quality IV, These forest are mostly in area Pimplaner, Shirpur, Sangvi and Koindaibari Range etc. of the Division. Stocking varies from 0.3-0.5. Large blank and under stocked areas are usually seen on the steep hilly portions in these areas.

2.2.2.2A The natural regeneration of teak is generally scanty over most of the area. Scattered regeneration of teak is often seen at places, particularly in the moist localities, but it is not adequate to restock the area. The conditions are generally not congenial for natural regeneration and the surviving young saplings often suffer extensive damage on account on account of frequent ground fires.

2.2.2.3^a The general floristics are:-

I&II: Tectona grandis, Anogeissus latifolia, Garuga pinnata, Lanea coromandelica, Lagerstroemia parviflora, Pterocarpus marsupium, Terminalia tomentosa, Soymide febrifuga, Diospyros melanoxylon, Mitragyna parvifolia, Acacia catechu, Boswellia serrata, Sterculia urens, Madhuca indica, Morinda tinctoria, Terminalia arjuna, Ficus glomerata, Pongamia pinnata and Hardwickia binata.

III.: Woodfordia fruticosa, Helicteres isora, Vitex negundo, Nyctanthes arbor-tristis, Cassia auriculata, Flacourtia sp, Strobilanthes callosus, Cassia auriculata, Cassia tora, Achyranthes aspera, Apluda varia, Andropogon pumilus, Ischaemum sulcatum.

IV-a: Andropogon helpenses and Andropogon contortus, Cymbopogon martinii

IV.: Calycopteris floribunda, Caesalpinia sepiaria, Millettia auriculata, Butea superba.

Parasites: Loranthus species.

2.2.3.A (II) Sub Group- 5Ac3-Southern Dry Mixed Deciduous Forest.

2.2.3.1A These forests are mainly noticed to occur in the marginal areas in Shahada range along the reserved forest boundary. The configuration of the ground is undulating and the area is deeply cut by numerous nallahs. Sheet and gully erosion is noticed to be progressing at an alarming rate in these areas. The soil is generally poor, dry and shallow. Stony portions and waterlogged areas are also frequently seen. Lime and kankar nodules are also found at places. The site quality of the crop varies from IV-a to IV-b. The land is quite open and the density of stocking generally varies from 0.4 to 0.5. Being near the habitations, grazing incidence is very heavy and illicit lopping and hacking of trees is noticed to cause considerable damage to these forests. The reproduction of dhawada is occasionally seen but the same is scanty and inadequate to restock the area. Root suckers are common, but the natural regeneration is nearly absent.

2.2.3.2A The general vegetational association is Kanser-Dhavada-Khair, with Salai as another common member. Owing to biotic interference like frequent fires, heavy grazing and heavy illicit felling, these areas are fast degenerating into scrub forests and there is an immediate need to arrest this degrading trend.

2.2.4.2A The general floristic is:-

I&II : Anogeissus latifolia, Boswellia serrata, Lannea coromandelica,
Hardwickia binata, Acacia leucophloea, Moringa pterygosperma,
Ougeinia oojeinensis, Tectona grandis, Sterculia urens, Zizyphus
xylopyra, Butea monosperma , Acacia catechu , Euphorbia species,
etc.

III: Cassia auriculata (o), Strobilanthes callosus (f), etc.

IV-a: Andropogon contortus (f), Andropogon pumilus (f), Apluda varia (f),
Cymbopogon martinii (f), etc.

2.2.5A: 5/ DSI Dry Deciduous Scrub Forest.

2.1.5.1A This sub-type occurs over large areas in Sakri, Sindkheda Ranges along the southern reserved forests boundaries. These are poor, open, low forests situated on inferior sites, having shallow soils. The soil is often hard, murrumy, bouldary and gravelly and outcrops of rocks are frequently seen. In many places, kankar or lime nodules are also noticed either on the surface or in the soil underneath. The growth is poor and stunted and large blanks and under stocked areas is frequently seen. The density of stocking is very low, and incidence of grazing is very high. The illicit hacking and lopping of trees for fuel and fodder are noticed to cause considerable damage to these forests. Due to inadequate soil cover, frequent fires and excessive pasturage, sheet and gully erosion is progressing at an alarming rate and large tracts are seen cut up with deep nallahs and gullies. Reproduction of the valuable species is absent on account of the above –mentioned factors. Frequent fire has also caused considerable damage to the growing stock. The crop exhibits pronounced xerophytic ecological association, in which the growing stock is stunted and malformed. The common vegetational association is Khair- Ghatbor- Henkal.

2.1.5.2A The general floristic is as below:

I & II: Acacia catechu, Acacia leucophloea, Acacia arabica, Balanites aegyptica,
Zizyphus xylophyra, Soymida febrifuga, etc.

III: Cassia auriculata, Mimosa hamata, Euphorbia species etc.

IV-a: Cassia tora.

IV-b: Heteropogon contortus and other grasses form a thin cover.

V: Caesalpinia sepiaria, Calycopteris floribunda, Loranthus species.

2.2.7A 4E- Tropical Riparian Fringing Forests.

2.2.7.1A **RS₁**- Riparian Fringing Forests- This type of forest is noticed near a narrow strip of water and is marked by the presence of tall trees of Terminalia arjuna, Terminalia myriocarpa, etc. The soil here is usually sandy. The other associates found here are Tectona grandis, Terminalia tomentosa, Pterocarpus marsupium, Acacia catechu, Zizyphus Xylobura, Bamboo, is practically absent. Helicteres isora, cassia auriculata, Cassia tora and Andropogon contortus.

2.3A Classification of Forests as per Gaussen Norms

2.3.1A Gaussen, by taking six parameters like hypsometry, geology soil types, bioclimatic, land use and potential vegetation has classified the forests into two series.

(a) Tectona-Terminalia series.

(b) Anogeissus-Terminalia-Tectona series.

2.3.2^a It is based on assumption that the different physiognomic stages of vegetation encountered in the region leads to a same forests type and it goes to form a series of vegetation. The final maximum stage of the series is called plesioclimax. It is thus defined as a stage which a given plot of vegetation would achieve in a sufficiently long period of time, without human interference. This classification of vegetation map indicates the potential vegetation that can exist on that area.

2.4A: RET species

2.4.1A: The list of endangered species along with their status is as below in table-6. Many “Endangered”, “Vulnerable”, and “Near Threatened” species of medicinal plants are found in this tract. The list of some such rare species is given below.

Table-6

Sr. No.	Endangered – EN
1	<u>Clorophytum arundinaceum</u>
2	<u>Clorophytum borivilianum</u>
3	<u>Eulophia nuda</u>
4	<u>Eulophia ramentacea</u>
5	<u>Oroxylum indicum</u>
6	<u>Santalum album</u>
	VULNERABLE – VU
7	<u>Aegle marmelos</u>
8	<u>Gloriosa superba</u>
9	<u>Moringa concanensis</u>
10	<u>Mucuna monosperma</u>
11	<u>Pueraria tuberosa</u>
12	<u>Pterocarpus marsupium</u>
	Near Threatened – NT
13	<u>Nervilia aragoana</u>
14	<u>Nervilia prainiana</u>
15	<u>Tinospora sinensis</u>
16	<u>Terminalia arjuna</u>

(Source DCF Dhule Letter no. 3/plan/1596/Dt.01.01.2014)

2.5.A Important medicinal plants in the area .

2.5.1A (1) MEDICINAL TREES:- Cyperus scariosus, Datura metel, Dioscorea hispida, Eclipta alba Linn, Embelia ribes, Evolvulus alsinoides, Gloriosa superba, Gymnema sylvestre, Hemidesmus indicus, Hyptis suaveolens, Ocimum sanctum, Piper longum, Phyllanthus amarus, Plantago ovata, Plumbago zeylanica, Psoralea corylifolia, Rauwolfia serpentina, Ruta graveolens, Sida acuta Burm, Sida cordifolia, Sida rhombifolia, Smilax macrophylla, Solanum nigrum, Sphaeranthus indicus, Tinospora cordifolia, Tylophora indica, Urginea indica, Vitex negundo HERBS:- Abrus precatorius, Abutilon indicum, Acanthospermum hispidum, Adhatoda vasica, Argyrea speciosa.

(ii) MEDICINAL SHRUBS /CLIMBERS

2.6A Grass-associates. Schima- Dichanthium type:

2.6.1A: This grass associates is found in Dhule Forest Division and the dominant perennial grass species are Dichanthium annulatum, Sehima nervosum, Bothriochloa pertusa, Chrysopogon fulvus, Heteropogon contortus, Iseilema laxum, Themeda triandra, Cynodon dactylon, Aristida setacea, Cymbopogon spp. etc.

2.7A Phyto-Geography of the Division.

2.7.1A: The vegetation here responders both in endemic and exotic component. It is evident from the fact that this forest division is located in semitropical region and which is marked by the intermetent growth in a year, and which result in a ring formation. In the tropical region, the growth is continuous and there are no ring formations. A large number of tree species found here show no ring formation meaning that these species have migrated from tropical region. The following chart shows few the species with different origin.

(a) **African origin:-**

Stylosanthes fruiticosa, Caesalpinia pulcherrima, Desmanthus virgatus, Klinia grandiflora, Cryptostegia grandiflora.

(b) **Australia origin:-**

Seleria tessellate, Dimeria connivens.

(c) **South America origin :-**

Opuntia elatior, Acanthospermum hispidum, Hyptis suaveolens, Ocimum americanum, Alternanthera pungens.

(d) **Tropical America origin:-**

Malachra capitata, Prosopis cineraria, Prosopis juliflora, Eriocereus bonplandii, Parthenium hysterophorus.

(e) **Endemic origin :-**

Cordia macleodii, Bridelia retusa, Dolichandrone falcate, Cryptolepis buchani, Ischaeman salcutum, Andropogen haelapensis, Buchania lanzan, Xanthium strumarium, Diospyros melanoxydon, Terminalia arjuna, Eugenia jambolana, Careya arborea.

2.7.2: The forests of the Hill block are spread along the plains, at the foot of two ridges. The conditions of growth are not as favourable as in the case of the Deomogra block. The percentage of Teak in the stand has reduced to quite low, because of selective illicit felling of teak trees. Fires have played decisive role in keeping down the reproduction of teak and other valuable species. The areas appear to be more open. The density ranges from 0.1 to 0.5 the site quality is IV (All India site quality).

2.8.A THE STATUS OF NATURAL SEG.

2.8.1A The natural regeneration in the area is poor to scanty. In the area protected by effective JFM committees, good natural regeneration is noticed.

SECTION 2 : INJURIES TO WHICH THE CROP IS LIABLE.

2.9A NATURAL CAUSES.

2.9.1A: The natural causes for injuries are:

1. Wild animals,
2. Climbers and weeds,
3. Insects and fungi,
4. Parasites and epiphytes,
5. Frost and drought,

2.9.2A GRAZING BY WILD ANIMALS:- In some areas, Chinkaras and barking deer occasionally cause damage to young saplings in plantations, but the population of wildlife has already dwindled to a negligible proportion, however, this loss is not very trivial.

2.9.3A WEEDS: -

The common climbers are chilar, palaswel, and deolas etc. These are usually seen in moist localities along stream banks and in better quality areas, but the damage is not very serious. Weeds like parthenium also cause some damage to young regeneration. Effect is less marked.

2.9.4A INSECT & FUNGI: -

Celostema scabrotor is seen to attack Acacia nilotica during months from September to March. Similarly Atteva fabriciella attack Ailanthus excelsa during the same period. Albizzia lebbeck and Albizzia procera is attacked by shoot feeder Sperama retorta in the month of June and bark eating caterpillar Indarbela quodrinotata in the month of April. Neem is attacked by shoot borer Lasperyresia koernigana. Sissoo and Shisham are attacked by the shisham defoliator Plecoptera reflexa is attacked by shoot gall insect Betousa stylophora. Gmelina arborea is attacked by calopepla leayana and Sahyadraassus melobaricus. Tectona grandis (teak) is attacked by Hyblaea puera and skeletonizer Eutoctona machearalis, which is sporadic and does not assume epidemic proportions.

2.9.5A PARASITES EPIPHYTES:- Pathogens are also known to attack tree species, but mostly in nursery conditions. Some attack in natural conditions are also reported. These mainly are:-

- (a) Fusarium Oxysporum- It causes wilting and is known to affect Seacia moloticam, Dalbergia sissoo and Dandrocalamus strictus.
- (b) Fusarium solam- It is known to attack Azadirachta indica and Dalbergia sissoo.
- (c) Uncinula tectonee- It causes rust in teak.
- (d) Colletotrichum dematium- It affects Albizzia procera, Dalbergia sissoo.
- (e) Rhizoctonia solani- It affects Dendrocalamus as collar root.
- (f) Rhoma nivea- It affects leaves of Dalbergia sissoo, as leaf shot.
- (g) Fusicladium pongamiae- It affects Karanj (Pongamia pinnata) plant as leaf bright.
- (h) Dendrophthoe falcata (Loranthus) attack has been noticed on 35 tree species in the forests of this division. The important species that are affected are Albizzia odoratissima, Anogeissus latifolia, Bombax ceiba, Boswellia serrata, Cassia fistula, Dalbergia latifolia, Grewia tiliaefolia, Haldina, Terminalias etc. The attack on genus Anogeissus, Boswellia and Grewia is particularly heavy.
- (i) Viscum arthculatum attack was found in about 10 species namely Dalbergia latifolia, Grewia tiliaefolia, Cordia myxa, Cordia macleodii, Schleichera oleosa, Diospyros

melanoxyton etc. The attack is heavily noticed in genera. Dalbergia and Grewia, sometimes the damage is to the extent of causing death to the host tree.

- (j) Epiphytes like Vanda and Dendrobium were found on the species like Pterocarpus marsupium, Terminalia bellirica, Erythrina indica / subrosa, Butea monosperma, Ougeinia oojeinensis, Boswellia serrata, Bombax ceiba, etc. but these do not cause any damage to the host trees.

2.9.6A FROST AND DROUGHT:-

2.9.6.1A: Frost occurs sometimes in Pimplener and Koindaibare range causing a dying back damage to young seedlings of teak and other frost-tender species, but the damage due to this natural agency is not very serious, as these coppicing species soon send shoots in next season. Drought is not common in this tract; hence the damage is not much in evidence.

2.10. A: DAMAGES CAUSED BY MAN.

2.10.1A: The maximum damage to the crop is caused by biotic interference especially by man and cattle, in the following forms:

1. Forest fires.
2. Encroachments.
3. Illicit cutting.
4. Grazing.

2.10.2A: **FOREST FIRES:** - Forest fires are both accidental and deliberate. The deliberate fires are caused (i) for the purpose of cleaning the ground for collection of moha flowers during moha season. (ii) By the grazers who set fire to forests in the hot season to get early and succulent grasses. (iii) By the cultivators for rab burning so as to cultivate carols. (iv) . By Tendu contractors who burn forests for better flush of leaves.

2.10.2.3A: Fires cause and have caused extensive damage to the young crop and seedlings. Fires damage the base of big trees and reduces their timber value and produce hollowness in poles and trees. Fires also accelerate soil erosion by destroying soil cover, as a result of which, the soil gets hardened and its moisture retention capacity is reduced. This leads to a high run-off. Repeated fires cause soil to lose

its fertility and also it tends to destroy the natural regeneration. In hilly areas, before start of local corals, rab burning is practiced, wherein a small portion of forest land is burnt with dry leaves with the result, the forests have become more open and the entire undergrowth along with established natural regeneration gets burnt. The trees are lopped to get leaves for rab burning. The entire tract suffers from heavy fire damage. The steep terrain and inadequate communication make the task of firefighting quite difficult. The statement below in Table-7 show the area affected by fires as per record in the last 12 years.

TABLE-7

Year	No. of fire cases	Area burnt (in ha.)	Estimated loss in Rs.
2000-01	17	224.00	28300/-
2001-02	15	126.50	22350/-
2002-03	04	41.50	2750/-
2003-04	15	208.100	33550/-
2004-05	03	33.00	9200/-
2005-06	33	92.300	9450/-
2006-07	26	52.050	9800/-
2007-08	36	263.600	39125/-
2008-09	32	167.175	70125/-
2009-10	27	152.750	36650/-
2010-11	25	163.930	37740/-
2011-12	43	148.050	33275

(Source: D C F Dhule letter No offence 1364 dt. 16-11-2013)

2.10.2.4A: There is every risk that through a large tract of forest area is burnt annually but it is not recorded and the extent of area burnt shown in the above table, may be a fraction of actual fire. There is a need to have alternative monitoring of forest fire. It is essential that annually a digital image processing be carried out in June to know the exact extent of forest area burnt up to May. FSI, Deharadun is also sending warning signals through SMS to the concerned Division, about the prevalent fire, wherever the mobile number of concerned division has been recorded with FSI.

- 2.10.3A:** **ENCROACHMENTS:** - The history of encroachments in Dhule Division makes an interesting case study. Systematic destruction of forests, which took place in this division during the last five decades, has rendered thousands of hectares of forest land barren. The typical honeycomb pattern of encroachment makes the task of forest management unimaginably complex. To make things worse, powerful lobbies and armed mafia back the encroachers for their own vested interests.
- 2.10.3.1A:** The seeds of this destruction can perhaps be traced back to the forest villages, where labours from distant places were encouraged to settle down to carry out timely forestry operations in remote areas. These labours enjoyed the benefit of various forestry schemes, and initially shared a symbiotic relationship with the Forest Department.
- 2.10.3.2A:** For about two decades i.e. from 1944-45 to 1964-65, the Forest Department had adopted a managerial strategy for artificial regeneration namely the leasing out of forest land for agriculture, on the basis of taungia plantation, locally called Eksali. In this system, beneficiaries were selected from local villagers and they were allowed to cultivate in forest land in patches of 1 to 2 ha. along with forestry tree crop, for a period of one year (extendable up to 3 years). The system was subsequently abandoned when it was found that the agri-silvi plots were gradually transformed into pure agricultural plots.
- 2.10.3.3A:** Moreover, many villagers moved away from the forest villages and settled down in these plots for supervising their agriculture more closely. This laid the foundation for extensive encroachments in the future. In 1976, Govt. vides FLD-1674/ST-97232/ F-3 took a decision in principle to allot these agri-silvi plots permanently to the plot holders. In this process, even successfully regenerated agri-silvi areas were hacked and projected as unsuccessful plots, long under cultivation. Jaribkharda plots and Eksali plots given for cultivation to villagers also met a similar fate.
- 2.10.3.4A:** Eksali plots were also situated in Boradi, Sangvi, Shirpur Ranges of Shirpur Taluka and in all, there were 1701 plot-holders, who claimed among themselves an area of 1876.133 ha. Some of these lands have been used for

various projects and at present there are 1701 plot holders with an area of 1876.133 ha. As per Govt. order No.FLD1069/4317/dt. 22.3.1969, a proposal for the permanent disforestation of these lands were submitted to Govt. of India and the proposal has been accorded conditional clearance, subject to the decision of the Hon. Supreme Court in a related case.

2.10.3.5A: Encroachments between 1972 to 1978.

The encroachments made between 1972 to 1978 on forest land were given legitimacy by the Govt. of Maharashtra vide its order LEN 1078/3483 GI dated 27/12/1978 and G.R.No.PLO-1079/1366 F-8/dated 12.09.79. Accordingly,,4823.40ha. of forest land were identified as encroachments eligible for regularization by the Revenue Department, but the same was challenged before Supreme Court vide Writ Petition No. 7339-G3/82 dated 06.10.1982. The Supreme Court ordered an maintenance of status quo in the above case and therefore the Forest Department together could not do anything more to evict the ineligible encroachers from the forest land. The encroachments between 1972 to 1978 are yet to regularized.

2.10.3.6A Encroachments After 1979

Between 1979 to 1983,1874 persons once again encroached upon the forest land, to the extent of 3187.742 ha. and between 1984 to 1994-95, 1560.768 ha. of forest land came under fresh encroachment.

2.10.3.7A: The present position of encroachments, that took place between 1972-78 and deemed as ‘eligible’ by the Revenue Department, is reflected in the following table-8:

Table-8
Details of encroachments.

Sr. No.	Range (prior to re-constitution)	Encroachments as per Govt. order dt.27.12.78		Encroachments as per Govt. order dt. 12.9.79		Total No. of Encroachments	Eligible Encroachments. Area (Ha.)
		Number	Area (Ha.)	Number	Area (Ha.)		
1	Shirpur	1032	1502.27	00	00	1502.27	3241.76
2	Sakari	1750	3233.13	436	422.452	3655.582	3057.77
3	Dhule	44	88	233	389.43	477.43	382
4	Pimplner	00	00	1205	2375.86	2375.86	00
	Total	2826	4823.40	1874	3187.742	8011.142	6681.53

2.10.3.8A: The present position of ineligible encroachers till 1978 are given in Table 9 below:-

Table-9

Ineligible encroachers in the period 1972-78

Sr. No.	Range	List of eligible encroachers	
		Number	Area (Ha.)
1	Shirpur	131	230.009
2	Sangvi	19	19.00
3	Sakari	21	22.980
4	Dhule	52	91.00
	Total	223	362.989

2.10.3.9A: There are ineligible encroachers in agri-silvi plots also. The Details of such encroachment is given in Table 10 below.

2.10.3.10A: However these figures are likely to change once again, subject to the decision of the District Level Committee constituted by the Govt. of Maharashtra on 20.12.1995 in pursuance of Hon'ble Supreme Court directives, to look into the eligibility of encroachments that took place during the period 1972-78. The Bagul committee had enquired into complaints of those villagers, who claimed to have encroached upon the forest land between 1972-78, but those were declared as ineligible encroachments. List of the ineligible encroachers is given in **Appendix-III**.

2-10.3: Actual Encroachment in Division as on 1st July 2015, as reported by DCF Dhule vide letter No. A/D-8/Survey/602, dated 22.06.2015 is as follows:

Sr. No.	Range	Total Area of Range	Details of Encroachment					
			Encroachment of 1972-78	Agrislivi Plots	Eligible Encroachment of 2006 Act.	Pending Encroachment of 2006 Act.	Total Encroachment	Balance Area.
1	2	3	3	4	5	6	7	8
1	Sakri	24154.360	186.725	162.000	170.110	3575.426	4094.261	20060.099
2	Pimpalner	28208.610	0.000	0.000	1830.612	1010.152	2840.764	25367.846
3	Koundaibari	19884.960	656.910	0.000	1005.034	4222.714	5884.658	14000.302
4	Dhule	30072.700	457.970	8.000	256.819	1151.740	1874.529	28198.171
5	Shindkheda	17173.940	0.000	0.000	0.000	0.000	0.000	17173.940
6	Shirpur	23029.080	231.690	215.340	4181.640	5697.920	10326.590	12702.490
7	Sangavi	24691.210	229.510	0.000	5637.504	2968.060	8835.074	15856.136
8	Boradi	24541.990	0.000	0.000	7552.420	6132.410	13684.830	10857.160
	Total -	191756.850	1762.81	385.340	20634.14	24758.42	47540.706	144216.144

2.10.4A: INITIATIVES BY THE FOREST DEPARTMENT.

2.10.4.1A: During 1987-88, the Forest Department launched a series of operations to evict illegal encroachments in the Division. Several illegal villages were evicted and cultivated forest lands were recovered, as a result of these operations. However the Department received a major setback in Chinchpani village in Sangvi Range, where a mob attacked the officials and a forest guard was burnt alive. A couple of other officials were also seriously injured. A series of enquiries followed, which only helped in further demoralizing the field staff. In effect, this was a shot in the arm for the encroachers.

2.10.4.2A: Since 1997, the Deputy Conservator and Assistant Conservator of Forests have been bestowed with the power conferred on District Collector (as per section 53,54 & 55 of Maharashtra Land Revenue Code 1966) for eviction of encroachers and so far, only 6422 notices have been issued to illegal encroachers, but final decision could be taken only in one case, and the total eviction effected is just in one-hectare. There is a need to give to power of Collector under Section 242 of Maharashtra Law Revenue Code, 1966.

2.10.4.3A: The Deputy Conservator of Forest of the erstwhile Dhule Forest Division had compiled a compartment wise list of extent of encroachments in each compartment of in the Division, which is given in **Appendix-IV**.

2.10.4.4A: A proposal has been submitted in general to provide the services of a Tahasildar, for the purpose of evicting the encroachment but the approval is awaited..

2.10.5.A: FACTORS RESPONSIBLE:

2.10.5.1A: Although encroachment is common in forests all over the state, the factors that have made Dhule Forest Division as probably the worst affected, are summarized below:

- 1) The remoteness of the area, rugged terrain and lack of adequate communication and transport network in the area.
- 2) The Madhya Pradesh State border is very close by and this has actively favoured cross-border immigration of tribal on a large scale.

- 3) A series of litigations, indecision on encroachment regularization proposals, and it has made it impossible to fix the exact extent of eligible encroachments during years 72-78.
- 4) There is a social value attached to the land by the tribals.

2.10.6A: ILLICIT CUTTING: -

The forest dealt with under this plan, consist of valuable species like Teak, Shisam, Bija etc. Illicit cutting is resorted to, by local people to meet their own requirements of firewood and small timbers, as well as to make easy and quick money. Some people have taken it as a profession, particularly in Range, where firewood for sale by headloads is quite common.

Owing to excessive dependence on forest for firewood, large chunks of forest have become either barren or sparsely stocked unless we address the basic needs of the people, entire forests will turn into barren in near future. This problem can be alleviated by supplementing the availability of firewood and by providing alternatives to the wood based chulhas.

2.10.6.1A: Damage to the forests on account of illicit cutting of timber and firewood is also serious in easily accessible areas of Pimplener and Sangvi ranges. Widespread illicit cutting has inflicted heavy damage to the forests, and drastically altered the composition of the crop. Valuable timber species are being removed from the forests by local inhabitants, especially by labours and marginal farmers, for their own bonafide agricultural use and as also to earn a livelihood during the lean period of agriculture. At present not many sound mature teak trees are found in the forests, and at many places, this precious tree exists mostly in the form of crooked coppice growth, resulted due to repeated coppicing, of late, the quantum of the illicit cutting of valuable timber species has come down considerable, for the reason that few such trees are now left in the forests.

2.10.6.2A: However, illicit felling for collecting fuel-wood continues unabated, particularly due to heavy demand from nearby towns. In fact, it is the primary source of livelihood for many people living in the fringes of forests.

2.10.6.3A: The extent of illicit felling during the last ten years is evident from the following table-11 below.

Table-11

Table showing illicit felling, estimated loss owing to same and value of the material seized

Year	No. of trees cut	Estimated lose in Rupees.	Value of material seized in Rupees.
1	2	3	4
2000	826	10.59	8.32
2001	1606	05.22	12.33
2002	--	--	-
2003	--	-	-
2004	--	-	-
2005	1811	2.21	00.56
2006	1193	1.15	0.36
2007	1489	1.19	3.57
2008	8599	7.64	3.81
2009	5169	3.97	2.30
2010	4909	3.90	1.63
2011	5634	2.48	1.78
2012	4381	2.52	3.25

(Source: D C F Dhule letter No. Offence 1364 dt 16-11-2013)

2.10.7A GRAZING:-

Even First Grazing Settlement Report (1969) speaks of tremendous grazing pressure on forests. The large number of uneconomic cattle in the track is causing heavy damage to the forests, particularly in Shirpur, Boradi, Sakri, Dhule, Pimplaner, Koindaibari, and Sangvi ranges. In the remote hilly areas of Akrani & Toranmal ranges, however, the grazing pressure is comparatively low. Although open grazing by goat and sheep is strictly prohibited in these forests, Katewadis from Gujarat and Rajasthan bring their herds of cattle to graze in these forests. These peculiar zebu brahmini cows are habituated to eat any leaf as fodder and cause much heavy damage to the forest. The grazing restrictions in the forests do not seem to bother them at all. Due to excessive grazing in the forests, the regeneration is either browsed or trampled upon and the soil becomes hard compact, rendering the conditions for regeneration extremely unfavorable. Sheeps and goat do a close level grazing, by uprooting even entire seedlings and hence cause much more damage to a regenerating forest.

2.10.7.1A: The cattle census data of to 2011 from Dist. Social and Economically Booklet as per District Statistical Officer dhuieis reproduced in table -11 below.

Table-11A

Census date of cattle in DhuleForest Division in 2011

Sr. No.	Taluka	Cow and Bullocks	Buffalo and Oxe	Sheep	Goat	Horses	Others	Total
1	Dhule		26949 892	66497	85581	1544	138	181601
2	Shindkheda		21770 672	229691	10211	4574	203	265777
3	Shirpur		11391 202	1003	46585	252	179	59612
4	Sakri		13465 190	21567	54983	588	23	90816
			75531	318758	197360	6958	543	599150

(Source D C F Dhule letter no offence 1364 dt 16-11-2013)

The table indicates an average increase of 5% in cattle population over 10 Years. If the areas under protection working circle and areas under plantations are deleted, the forest area available for grazing is less than 0.5 ha. per cattle head. This indicates the high grazing pressure on the forest area. The grazing fee collected by the division during the last ten years is given below:

2.10.7.2A Statement showing the number of grazing permits issued and grazing fee collected in the last 12 years is reproduced in Table-12 below.

Table-12

Numbers of Grazing permits issued and revenue collected in past twelve years

Year	No. of Grazing permits Issued	Grazing fee collected in Rs.
1	2	3
2001-2002	62923	82300
2002-2003	70234	79343
2003-2004	75286	85576
2004-2005	83255	98179
2005-2006	70116	75526
2006-2007	74375	97962
2007-2008	105517	143732
2008-2009	98408	131131
2009-2010	113362	219221
2010-2011	114048	219759
2011-2012	111958	219309

(Source: D C F Dhule letter No Surve y/1501, dt. 11-12-2013)

2.10.7.3A: The abstract statement showing the number of grazing offences booked in the last 12 years are reproduced in Table-13 below. .

Table-13

Statement of grazing offence of past 12 years

Year	No. of offences booked	Grazed area in ha.
1	2	3
2000-2001	81	--
2001-2002	53	--
2002-2003	38	--
2003-2004	548	--
2004-2005	47	--
2005-2006	61	--
2006-2007	54	--
2007-2008	121	--
2008-2009	164	--
2009-2010	56	--
2010-2011	55	--
2011-2012	59	--

(Source: D C F Dhule letter No. Offence 1364 dt 16-11-2013)

2.10.7.4A: Analysis of the data of cattle census, grazing fee collected and offences booked clearly indicates that the mandatory collection of grazing fee is not enforced properly. It means that there are lots of unauthorized cattle grazing in the forest. The field staff does not seem to treat the issue with the seriousness it deserves. This was evident during the reconnaissance survey, when a large number of cattle were observed grazing in the forest area. If effective grazing control measures are not taken immediately, even the little natural regeneration occurring in patches may get trampled or browsed.

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CHAPTER-IIB
FOREST FAUNA

Section-1 MAMMALS

2.b.0 The tract dealt with is neither rich in variety nor rich in number as far as wildlife is concerned. The tract had Aner Dam Sanctuary earlier, which has now been transferred to Dhule Forest Division.

2.b.1 In this tract, wild animals, like chinkaras and barking deer occasionally cause damage to young sampling plantation. However the animals like dog, jackal, hyena, wolf, barking deer, sambar, neelgai, and common hares are rarely found. Apart from these mammals, a number of avi fauna is also found in this area. As per the census carried out in the Division, the wild animals found in the tract are as given in Table-14 below.

Table-14

Census of Wild Animals in 2011

S.No	Wild Animal	No of Animal's Habitat as per 2010 census
1	Tiger	Nil
2	Panther	Sighted in Pimplaner charnmal, Kelpada, Umarpata, Nadrkhe, Malgoan, Danshirvada, Koindaibari Sirsola, BurudKa
3	Neelgai	Nil
4	Sambar	Nil
5	Chital	Nil
6	Sloth Bear	Nil
7	Barking Deer	Sighted in Dhule Chudaon , Pimparkeda, Laling, Purmepada , Udane, Sanjori
8	Wild Boar	Sighted in Dhule Sanjori Tikhi, Kalkheda
9	Rhesus Macau	Sighted in Pimpalner Kelpada
10	Common Langur	Nil
11	Jackal	Sighted in Pimpalner Malgaon, Pankheda
12	Chinkara	Sindakheda Vadel, Lamkani
13	Black Buck	Nil

S.No	Wild Animal	No of Animal's Habitat as per 2010 census
14	Wolf	Sighted in Pimpalner Pankheda. Sighted in Sakri Ubhand, Vadhna, Mahir, Mhasale, Ghanegaon, Hatti Kh. Sighted in Koindaibari Vitave Janbhora, Sirsola, Chaupala Burudkha. Sighted in Dhule Ankvadi Sadgaon , Moghan,Purmepada,Horpada, Borvir, Shirud, Kalkheda, Chugaon ,Pimparked Kusumba Udane, Sanjori, Chitod, Tikhi,Lailig Sighted in Shindhakeda Sdongir, Dangurne, Vadel, Lamkani Burzad, Nimdale ,karle, Vikharn, Salve, Chimthana, Khalane
15	Hyena	Sighted in Pimpalner Umrpata, Malgoan Sighted in Sakri Vardhana ,Mahir, Sighted in Koindaibari Sirsola, Chupada, Burudkha, Dahivel Sighted in Dhule Nandara , Kusuma, Kalkheda. Sighted in Shindkheda Songir , Nagav, Karle.
16	Peafowl	Sighted in Pimpalner kelpada Nadrkhe , Malgoan Sighted in Kondaibari vitave Sighted in Dhule Lalling. Sighted in Shindkheda Khalane.
17	Hare	Sighted in Kondaibari vitave, Burudkha Sighted in Dhule Tikhi Sanjori. Sighted in Sakri Vardha Mahir Ghanegoan.
18	Jungle Cat	Sighted in Koindaibari Dahivel
No Wild Life Found in Shirpur, Sangvi and Boradi Ranges		

(Source: D C F Dhule letter no Wild life 3244dt 29-03-2014)

2.b.2: Leopards : Among the big cats, the leopard is without doubt, the most versatile and resilient species in context of cover requirement, food habits and adopting to

the local conditions. During the last one and half decade, leopards have appeared in townships and 100 other human habitation with some regularity. It is reportedly frequently taking toll of livestock. It is said to be causing injury to humans and restoring to man-eating habits with greater frequency than in the past, and it is a testimony to its struggle for coming to terms with the rapidly changing habitat conditions. The loss of habitat as well as replacement of the significantly depleted natural prey by livestock is an integral to such unfortunate interface with humans and human activities.

2.b.2.1: India constitutes 2.5% of the world's landmass. The human population of India currently stands at one billion (16% of the world population) with a decadal rate of growth of about 2%. Going by the census of 1991, and assuming that the proportion percentage is the same as 74.3 % of the total human population, residing in forest dependent rural areas, the presence on the forest is going to be perpetual. The census of 1987 had put the figure of livestock population at >445 million (18% of the world). The per capita availability of forest is 0.08 ha. as against the world average of 0.64 ha. Against these startling statistics, it would be necessary to consider factors that is arbitrary to the naturally low rate of growth and survivorship of a top carnivore like leopard. Such review would prima facie dismiss the popular notion that leopard population is booming. This is not to deny the existence of a problem but the recognition ought to be for the right reasons. A well-structured study on status and ecology of leopard is therefore essential for mitigating problems and conservation of the species.

2.b.2.2: For long term conservation of large carnivores like the leopard, and pack of hunting wild dogs, it is essential to maintain a large populations of the entire spectrum of natural prey species as a food base for the carnivore animals. These natural preys are hunted by the human being itself.

2.b.2.3: Gaur and sambar are the principal prey species of carnivore while leopard preys on a much wider base of prey including peafowl and jungle fowl. Often herds may not be attended. Though much easier to kill than to the wild prey, the numbers killed by leopard is appreciably lower in proportion to the availability. In consideration to the habitat, the local livestock using that habitat ecologically need to be regarded a legitimate prey of carnivore.

2.b.2.4: In order to effectively reduce the possibility of leopards being poisoned on the carcass of livestock and killed as retaliation by owners, the State governments have since long instituted a system of awarding compensation to the owners of such animals killed by a leopard. Safeguards are built into the procedure of settling such compensation. Monitoring the predator concerned is an integral part to the system. Likewise ex-gratia payment is awarded for injuries sustained by humans or loss of human life as a result of mauling. In case of injury, there is a sliding scale of payment for treatment. Death of humans due to mauling by leopard or even injuries is rare. However given the situation only a few such incidences are capable of attracting much greater public ire. The poaching of leopard has not been noticed in this Division.

2.b.3: Bear: The Sloth Bear Melursus ursinus is distributed throughout the area and is conspicuous by its characteristic tracks, scats and claw marks leading to the canopy of the tall Terminalia arjuna trees in riparian forests. The outcrops of rocks and boulders along the drainage areas with numerous caves provide an ideal habitat for this species to harbour himself. Termites, beehives of the rock bee Apis dorsata and wild fruits constitute favoured food items. During the height of summer, bears feed on flowers of mahua (Madhuca indica), the fruits of wild mango, tendu (Dyospyros melonxylon), and jaman (Syzigium cumini). Since the interests of bear and the local inhabitants converge on these natural produces, the maximum injuries to the human take place during this time of the year.

2.b.4: Monkey and langur: There are three species of non-human primates in the area. The common langur Presbytis entellus a graceful and handsome monkey is distributed across the Division. The Rhesus Macaque Macaca mulatta occurs in north of Tapi River. The population of the two macaques is small and patchily distributed. They usually avoid each other. The langur is a prey of the leopard. The macaques however are seldom preyed, though they spend most of their time on the ground as opposed to the highly agile and arboreal langur. The young of all the three species are encountered throughout the year. Langurs are excellent sentinels therefore quick to detect the presence of large predators like leopard from their perch atop the trees.

2.b.5: Porcupine: The Indian porcupine Hystrix indica is widely distributed and is mainly seen during the dark hours. Its presence is conspicuous by the large burrows in which it lives, and the characteristic droppings. Signs of gnawing tree bark are not as visible as in the semi-arid habitats of the species. It is one of the favorite preys of the leopard that seems to have mastered the technique of killing a porcupine without getting injured by its quills. Local inhabitants also hunt porcupines for pot. The most popular method involves smoking out the animal from their burrows and then bludgeoning the animal to death as it emerges from its burrow. The quills are said to bring misfortune to the person who possesses them. The population seems to undergo significant change periodically. The reasons are not very clear. Porcupines live in a system of burrows with several burrows leading to a central chamber that is considerably large.

2.b.6: Wild Boars: The wild boars are distributed throughout the division and are considered to be a serious pest of agricultural crops all over India where the pigs naturally occur. Historically various measures have been adopted for its control, some of these go by default since they were not designed for this purpose, such as hunting. It had been on the list of 'vermin' for long, which meant that pig hunting was free for all. Later as a means to curb the possibility of over hunting the species, measures were taken so that wild pig could only be shot in the agricultural fields for protection of standing crop. The origins of the crop protection guns in central India can be traced to regulations such as this. With realization of its significance as a prey species of large carnivores, it gradually came under greater legal protection afforded by Wildlife (Protection) Act 1972, as amended from time to time. The species continues to be at the top of the list of problem species for agriculture crops.

2.b.7 SECTION 1 : (B) & (C) BIRDS & REPTILES

Among avifauna peafowl (*Pava cristatus*), grey Jungle fowl (*Gallus sonnerati*) are found in the tract. Other raptor birds like kites, eagles, owls, etc. have also been observed. Among reptiles pythons, cobras & other variety of snakes are commonly reported. The details list of wild animals & birds found in the Division is given in the Annexure-V.

2.b.8 SECTION 1 : (D) FISH :

The list of fish that has been recorded locally is as given in Table-15 below.

Table -15

List of Fishes in Dhule Forest Division

Sr. No.	Classification
	Class : Pisces
	Sub-Class : Teleostei
	Order-I : Clupeiformes
	Family-I : Notopteridae
1	<i>Notopterus notopterus</i>
2	<i>Notopterus chital</i>
	Order-II : Cypriniformes.
	Family-II : Balitoridae.
3	<i>Nemacheilus moreh</i>
	Family-III Cyprinidae
4	<i>Labeo rohita</i>
5	<i>Cyprinus carpio</i>
6	<i>Rasbora daniconias</i>
7	<i>Puntius sophore</i>
8	<i>Thynictmys sandkhol</i>
9	<i>Salmostoma novacula</i>
10	<i>Catla catla</i>
11	<i>Cirrhinus mirgala</i>
12	<i>Garra mullya</i>
	Order-III : Siluriformes
	Family-IV: Bagridae
13	<i>Mystus aor</i>
14	<i>Mystus seenghala</i>
15	<i>Rita rita</i>
	Family-V : Siluridae
16	<i>Wallago attu</i>
17	<i>Ompak bimaculatus</i>
	Order-IV : Mugiliformis
	Family-VI: Mugilidae
18	<i>Rhinomugil carsula</i>
	Order-V: Synnbranchiformes
	Family-VII: Mastacembelus
19	<i>Mastacembelus armatus</i>
	Order-VI: Chnniformes
	Family-VIII: Channidae
20	<i>Clarius batrachus</i>
21	<i>Channa gachua</i>
22	<i>Channa marulius</i>
23	<i>Channa punctatus</i>
	Order-VII: Perciformes
	Family-IX: Chandidae

24	<i>Chanda nama</i>
25	<i>Parambassis ranga</i>
	<i>Family- X : Cichlidae</i>
26	<i>Oreochromis mossambicus</i>
	<i>Family-XI : Gobidae</i>
27	<i>Glossogobius giuris giuris</i>
	<i>Family-XII : Belonidae</i>
28	<i>Xenotodon cancila</i>

2.b.9 SECTION 2 : INJURIES TO WHICH THE FAUNA IS LIABLE AND PROTECTION

2..b.9.1: Forest fires, which occur frequently, destroy the natural habitat of the forest fauna, so also the scarcity of water, forces the animals to migrate. Poaching is also a threat to the animals.

2..b.9.2: The number of poaching incidences that had occurred in the Division in the past ten years is given in the following table -16 below

Table -16

List of the Poaching Incidences in Dhule Forest Division

Year	Type & No. of Animal
2003	Nil
2004	Nil
2005	Nil
2006	Nil
2007	Nil
2008	Nil
2009	Nil
2010	Nil
2011	Mandul Sneke -2
2012	Nil

(SOURCE: DCF DHUE LETTER NO. 1944DT 26-02-2014)

The Wild Life Protection Act 1972 as amended in 1991 is applicable and being implemented for protection and preservation of the Wild Life found in the area.

CHAPTER - III

UTILIZATION OF THE PRODUCE

3.0 SECTION 1: AGRICULTURAL CUSTOMS AND WANTS OF PEOPLE.

3.1 : The economy of the district is primarily dependent on agriculture which is supported by the fact that cultivators which are 220664 and the agricultural labours which are 365828 together constitute 586492 of the main workers in the district, as against the state average of 59.62%. The agricultural sector thus absorbs nearly three fourth of total main worker's force.

3.2. PEOPLE :

Local population consists of Pawaras, Kokani Bhils, Lewa Gujar, Patil , Rajput, and Harijans etc. Out of these Patil are the most successful and advanced cultivators in the area.

3.2.1: According to 2011 census, the total population of Dhule district is 2050862 persons, comprising of 1054031 males and 996831 females which is about 0.018 % of State population. Out of existing population of the district, 0.66% are residing in rural areas and 33% in urban areas. The overall density of population is 285 persons per sq. km. for district Dhule and 285 persons per Sq. km. for District Dhule which corresponds favorable with the state average of 365 per Sq.km.

3.2.2: The growth rate of population in the decade is 20.08% for District Dhule, against the stats average of 15.99%. The sex ratio of Dhule district is 996831 female against 1054031 male, and 922 female per 1000 male for Dhule district, and was slightly higher than the State average of 82.91 The male literacy rate is 89.82 while the similar figure for the female is 75.48 The table -17 and table 18 below show population distribution and the literacy rate respectively.

Table-17

District wise distribution of population, sex ratio, density and decadal growth rate of population in Maharashtra.

Sr. No.	District	Persons	Males	Females	Sex ratio	Density/ Sq.km.	Growth Rate
	MAHARASHTRA	112372972	58361397	54011575	922	365	15.99
1	Dhule	2050862	1054031	996831	1000:946	254	20.08

(Source: D.C F Dhule Survy/ 1501, dt.. 011.12.2013)

Table-18
Literacy rates by residence and sex- State, Districts, Tahsils, 2011

State / District / Tahsil / Taluka etc.	Literacy rate								
	Total			Rural			Urban		
	Persons	Males	Females	Persons	Males	Females	Persons	Males	Females
1	2	3	4	5	6	7	8	9	10
27- MAHARAS HTRA	82.91	89.82	75.48	77.09	86.39	67.38	89.84	93.79	85.44
Dhule	4.57	0.45	0.46	0.31	0.31	0.31	0.74	0.73	0.74
Sakari	0.19	0.20	0.19	0.27	0.27	0.27	0.048	0.048	0.048
Shidkeda	0.16	0.16	0.16	0.21	0.21	0.21	0.077	0.078	0.076
Shirpur	0.17	0.018	0.017	0.20	0.20	0.20	0.13	0.13	0.12

(Source: D C F Dhule letter No .A/D-8/ Survey/ 2092, dt 29-03-2014)

3.2.3 The area and population figures of Dhule, Shindkheda, Sakri and Shirpur Talukas over which forests of the Division are spread, is given in table-19 below.

Table-19
Population, Literates by residence and Sex- State, District, Tahsil / Taluka etc. 2011

State / District / Tahsil / Taluka etc.	Total / Rural / Urban	Area in Sq. km	Population			Population density per Sq.km.
			Persons	Males	Females	
1	2	3	4	5	6	7
27-Maharashtra	Total	307731	112372972	58361397	54011575	
	Rural		61545441	31593580	29951861	
	Urban		50827531	26767817	24059714	
01- Dhule	Total		591295	325738	265557	
	Rural		267324	152874	114450	
	Urban		323971	172864	151107	
Shindakheda	Total		214050	120714	93336	
	Rural		180213	102292	77921	
	Urban		33837	18422	15415	
Sakari	Total		255770	145150	110620	
	Rural		234702	133820	100882	
	Urban		21068	11330	9738	
Shipur	Total		232801	131786	101015	
	Rural		175201	100492	74709	
	Urban		57600	31294	26306	

(Source: D C F Dhule letter No. A/D-8/Survey/ 2092, dt 29-03-2014)

3.2.4 : It is seen that the population of talukas of Sakri, Shirpur are sparsely distributed, compared to Dhule, with the maximum population of Scheduled tribes (Bhils, Kokani Gavit and Pawras) is in taluka Dhule. The distribution of tribals according to ranges are given in table-20 below.-

Table-20
Percentage distribution of Tribal population in different Taluka

Sr.No.	Taluka	Total Population	Tribal Population (approx.)	% of Tribal Population
1.	Shirpur	422137	202826	48.05
2.	Dhule	-	-	-
3.	Shindkeda	-	-	-
4.	Sakri	464913	247970	53.34
	Total	887050	450796	50.82

(Source: D C F Dhule letter No. A/D-8/Survey/ 2092 dt 29-03-2014)

3.2.5: The main occupation of the population is agriculture. A few people live in pucca houses, but the dwellings of the vast majority of the people are of small huts built with bamboo mats or Karvi stalks plastered with mud. The roof of most of these houses consists of cheap tiles and thatch of leaves and grasses, but nowadays, local inhabitants are also using local tiles. Improved agricultural practices are prevalent in Dhule talukas but the farmers of Shirpur, Sakri, Shindkheda talukas are still resorting to age-old agricultural practices like shifting cultivation. However these tribes are not included in primitive tribes.

3.2.6: Forests play an important role in the rural economy, and the livelihood of a large rural population depends upon forest-linked occupations, as listed below:-

[a] Some villagers eke out a living by selling dry firewood.

[b] Basket and mat making generate some employment in the forest areas.

[c] Besides forestry works, collection of moha flowers & fruits, honey, gum, tendu leaves also provide a seasonal employment.

3.2.7: The main requirements of village population from the forests are as under:

3.2.7.1: Timber:

Timber is required for construction of houses, agricultural implements and other articles. The demand is mostly for small timber and poles. Teak is the preferred species, but because of its non availability due to strict vigilance by the Forest Department, other species like sadada, dhawda & tiwas are oftenly used. Estimated local annual market demand for timber is 17741 cum but the present production of timber is about 591 cum. which basically comes from wind fallen and seized materials, leaving a huge gap between demand and supply. Timber from the private land meets the deficit of the timber. Some illicit import of timber from adjacent Dang Forest Division has also been reported.

3.2.7.2: Firewood:

The population of the tract is about 887050 (**2011 census**). Assuming a unit family of 05 members and that only 31% of such families are obtaining their requirement of fossil fuel, from these forests, the annual demand is to the tune of 887.05 M. tones or roughly 887.00 tonnes / year (taking the average requirement of a family A tonne/year). The annual production of firewood through collection of wind fallen material is about 1384.881 cum. per year. Even after discounting for the unauthorized collection from forests, there remains a yawing gap between demand and supply. Much of the demand is met through agricultural waste.

3.2.7.3: Bamboos: -

Bamboos are in demand locally for basket and for mats making and for construction of huts. Considering that only 10% of the families use bamboos and assuming an annual requirement of 10 bamboos per family, the demand for bamboo culms is over 1.62 lakhs. Presently no bamboo is removed officially and villagers are meeting their requirement, to some extent, through illicit cutting.

3.2.7.4: Grass :

Grass is required for thatching and stall feeding of cattle.

3.2.7.5: Grazing :

The cattle population of the tract is 945336 (2011 census). The available forest areas for grazing is about 85.30 Ha, which shows the severe grazing pressure on the forest. The demand for grazing land is acute in Sakari Range, as compared to Dhule and Shindkheda Ranges.

3.2.7.6: Other Produce:

The other forest produce commonly required by villagers from the government forests are edible fruits and flowers, bark for tan and roots, gum, thorns etc. To protect the crop from wild and domestic animals, thorns of arkati, henkal, amoni, bor etc., are used by villagers for fencing off their fields.

SECTION 2 : MARKETS AND MARKETABLE PRODUCE

3.0: Markets:

After meeting the local demand, much of the forest produce is exported to the neighboring villages and townships. The most important centers of distribution are sakri, Dhule, Shindakheda, Shirpur. All these markets are well connected by metal roads.

3.1 : The market of Pimpal and Dhule are important for sale of timber and its purchase, as there is brisk business of small timber and poles in the annual fairs held at these places. These fairs attract a large number of buyers and sellers from far off areas, even from Gujarat.

3.2 MARKETABLE PRODUCE:

3.2.1: Major Produce :-

3.2.1.1: Timber:

Teak, which is in great demand, is saleable in all sizes. The other species like Sadada, Tembhorni, Neem, Amba, Babul, etc. are also saleable as large sizes poles or in sizes of 45 cms & above.

3.2.1.2: Fuel wood:

Fuel wood, though much in demand does not attract many purchasers due to its high cost in Govt. sale depots and also due to its alternative availability from the malki (private) areas. The fuel wood from the depots is mostly lifted by Govt. tribal schools at fixed government rates.

3.3 : Minor Produce or Non-Wood Forest Produce.

3.3.1: Bamboo:

The common species of bamboo found in this division is Dendrocalamus strictus. Bamboo is in great demand, but the supply is limited. Bamboo is found in Pimpalner, Kondaibari And Boradi ranges in large quantities. Scattered clumps of bamboo are noticed in ranges.

3.3.2: Grasses:

Fodder grass to stall-feed the cattle and thatching grass for roofing are extracted throughout the Division. Rosha grass (Cymbopogon martinii) occurs largely in Kondaibari , Pimpainer, Dhule and Shirpur ranges.

3.3.3 Leaves:

Apta (Bauhinia racemosa) and Tembhurni (Diospyros melanoxylon).

These leaves are used as wrappers for tobacco in bidi industry. The demand for apta leaves for bidi is mostly from Gujarat State, while tembhurni leaves are used in other areas for manufacturing bidi.

3.3.4 :Karayee Gum:

There is a considerable demand for this gum in Mumbai market. This is also a valuable foreign exchange earner. Safed musali is in great demand for its ayurvedic properties and fetches a foreign exchange.

3.4: Other Non Timber Forest Produce.:

Tarwad and Chillhar Barks, Ghatbor, Karvi, Nirgudi, Thorns, Palas leaves, Anjan leaves, Moha flowers, Murrum, Stones etc. are some of the minor products, for which there is a significant demand.

3.5 SECTION : 3 LINE OF EXPORT:

3.5.1: Railways:

Only broad-gauge railway line, Dhule to Chalisgoan, passes through the tract, traversing across 50 kms and Surat to Bhusaval Talukas of Shindkheda of Dhule Forest Division. The main stations on the line nearby are Dondaicha and Nandurbar.

3.5.2: Metalled roads:

The metalled roads, constructed and maintained by the Public Works Department or by the Zilla Parishads, over which the forest produce are transported to the markets within the Division or to the railheads are :

- (1) Mumbai- Agra road (National Highway)
Via Dhule, Nardana (32km.), Shirpur (56 km.), Indore(259 km.), Agra (890 km.).
- (2) Nagpur – Surat road (National Highway) Via Dhule ,Sakri, Kondaibari (80 K.M.)

- (3) Dhule- Dondaicha (57 km.), Shirpur- Shahada (57 km.),
- (4) Dhule- Shirpur (50km.),
- (5) Dhule –Ammlner (40 km)
- (6) Dhule-Chalisgoan (50km)

3.5.3: Forest Roads: With the exception of 08 ranges the division is well served with a good network of forest roads and cart tracks. All these are mostly earth roads or murrumy roads and are generally motorable only during the open season. The list of forest roads, managed by Dhule Forest Division is given in Table-21 below.

Table-21

Existing Roads, tracks (in charge forest dept.) Statement Showing the list of existing Forest Roads in Dhule Forest Division

Sr.No.	Range	Name of the forest Road	Length in km.
1	2	3	4
1	Pimpalner	Malgaon To Malangaon	33.60
2	Dhule	Laling To Rajkada	11.20

(Source: D C F Dhule latter No. A/D-8/Survey/1501 dt 11-12-2013)

3.6 SECTION 4 : METHODS OF HARVESTING AND THEIR COST

Earlier all the coupes were worked through the agency of Forest Labourers Co-operative Societies (FLCS). However the coupes have not been worked for the last 18 years and hence details of coupes of harvesting are not available. The current wage board rates of year 2012-2013 of Dhule circle is given in **Appendix No V**.

3.7 SECTION 5 : PAST AND CURRENT PRICES

For the last many years, no regular harvesting of timber and firewood has been carried out. However some yield has been obtained from extraction of material from diverted forest areas and from removal of wind fallen and seized material. The price fetched on sale of such materials from year 2000-01 to 2011-12 in given in the table-22 below.

Table -22

Past and current Prices Trend of Timber, Fire wood and Bamboo

Year	Teak Timber /M3	Non-teak Timber/M3	Firewood/ tonne	Average Price for each bamboo in Rs.
1	2	3	4	5
2000-2001	477.717	00	6000	Nil
2001-2002	24.799	140.625	711.932	
2002-2003	10.598	96.309	495.608	
2003-2004	4.00	219.535	1494.337	
2004-2005	00	488.198	1195.698	
2005-2006	30.007	371.037	474.641	
2006-2007	191.516	5717.253	37.000	
2007-2008	107.911	30.173	29.160	
2008-2009	49.461	1510.716	350.480	
2009-2010	100.520	850.404	108.500	
2010-11	206.914	4108.840	592.362	
2011-12	229.871	7428.656	3057.982	

(Source: D C F Dhule Letter No Sale//10//883/Dt.21.06.2014)

This shows that there is an irregular behavior in the sale price of timber during last 12 years. The sale price realized from it sale of rosa grass is given in later section.

3.8 REVENUE REALIZED BY NON TIMBER FOREST PRODUCE

3.8.1: Tendu leaves:

The details of total royalty received and per std. bag obtained are given in the following table-23 below.

Table -23

Past and current yield and Revenue realized from Tendu

Sr. No.	Year	St. Bag	Royalty received
1	2000-01	2400	875776
2	2001-02	2400	529342
3	2002-03	2400	520919
4	2003-04	2400	441075
5	2004-05	1800	175000
6	2005-06	1800	933004
7	2006-07	3298	1880794
8	2007-08	4220	157724
9	2008-09	3300	1878786
10	2009-10	3300	1586786
11	2010-11	3300	986786
12	2011-12	3300	413572

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CHPATER-IV
ACTIVITIES OF FOREST DEVELOPMENT CORPORATION
OF MAHARASHTRA LIMITED (FDCM)

4.0 CONSTITUTION OF FOREST DEVELOPMENT CORPORATION OF MAHARASHTRA LIMITED.

- 4.1:** Forest Development Corporation of Maharashtra Limited (An undertaking of Maharashtra State) at Nagpur was constituted in 1974. Its aim was to cover and develop the under stocked and poor quality forest areas into productive forests by introducing valuable and production enhancing species. Forest Development Corporation is totally Maharashtra State undertaking i.e. a public sector undertaking (PSU). It is independent of Forest Department and is accountable to Maharashtra State Government directly. The FDCM activities in Dhule Forest Division is Nil. No forest area of Dhule forest division is handed over to FDCM.

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CHAPTER-V

PAST SYSTEM OF MANAGEMENT

SECTION-1: GENERAL HISTORY OF THE FORESTS

- 5.1.1:** The forests dealt under this plan are located in the erstwhile “Khandesh “, which included the present districts of Dulia and Jalgaon. It is believed that the name “ Khandesh “ was derived from “Khan” – the title of the Farukh king of the land from 1370 – 1600.
- 5.1.2:** Dynasties changed and Khandesh passed in turn from Hindus to Mohomdeans and again to Hindu rule till it finally lapsed to the British in 1817.
- 5.1.3:** The first recorded appearance of the English, as a military power, in Khandesh was in 1799 when Colonel Goddard on his march from central India to Surat found Khandesh most prosperous. Sir Thomas Hislop and Sir John Malcolm defeated the Marathas in a well fought battle at Mahidpur in 1817. Under the terms of the treaty of Mandesar, made after the defeat, Holkar ceded to the British all his territory South of the Satpudas, including the entire province of Khandesh.
- 5.1.4:** In 1863 Khandesh and Ahmednagar forests were made the joint charge of a European Officer. In 1870 the then Inspector General of Forest Dr. Brandis was to visit Khandesh but his visit could not materialize. He however suggested the formation of Khandesh into a separate division under the whole time district forest officer. Since then the Khandesh forests formed a separate charge. With the appointment of a separate officer, the work of demarcating reserve forest was taken in hand and steadily pressed forward. A total area of 1,028,623 acre was surveyed and demarcated in the beginning and was classified as 1st and 2nd class reserve. In the year 1879 an area of 1,612 sq. Miles was declared as reserved forest and 714 sq. Miles as protected forest. The distinction between 1st and 2nd class reserves disappeared with the introduction of tripartite classification in 1897 – 98. The Khandesh was split up into 2 forest divisions, East and West in 1882 – 83 and the latter was again split up into two, North (North to Tapi) and West Khandesh in 1907 – 08.

SECTION 2 : PAST SYTEM OF MANAGEMENT AND THEIR RESULTS

Prior to the Working Plans of J. Dodgsoon (1904-1905) for Umatpata reserves of Pimpalner & Deomogra reserves of Nandurbar, Irregular cuttings were carried out according to the North Tapi privelege code, chiefly dead wood was removed on payment of Rs. 4/- per cart load of Teak and Rs. 1/- per cart load for other species. The forests of Dhule Division came under systematic management with the commencement of J. Dodgson's plan.

1. J. Dodgson's Plan (1904) for Umarpata Reserves -

This plan meant for Umarpata Reserved Forest of Pimpalner range was sanctioned by the Govt. Of Bombary under No. 4268, Revenue Department Dt. 6th June 1904. The plan aimed at improvement of the composition of growing stock. The silvicultural system adopted was improvement fellings. All attention was cocentrated on Teak & all healthy and sound Teak trees up to 40" g.b.h. were to be reserved. Trees of other species were permitted to be removed under the North Tapi Code. A felling cycle of 25 years was adopted. The privilege of cutting live wood was allowed one year in advance of the coupe working. The whole area was divided in to 5 periodic blocks. A sub periodic block was to be worked in 5 years by dividing it in to 5 comptts. Of approx equal area. No cleaning & thinning were prescribed in view of the open nature of the stands.

2. J. Dodgson Plan (1905) for Deomogra Reserves -

J. Dodgson's also wrote the plan for Deomogra reserves of Nandurbar Talukas. The working plan was sanctioned by the Govt. Of Bombay under No. 3408 Revenue Department Dt. 26th April, 1905. The prescriptions of the plan aimed at getting the area at the earliest under systematic protection & make it yield most valuable crop for which it is capable. The entire area was divided in to 4 blocks & each block was divided in to 45 compartments. The silvicultural system though not specifically mentioned was Selection cum Improvement. Teak was the principal species receiving all attention. The 50 % of the crop was stated to be consisting of Teak of which more than 12.5 % consisted of dead trees. These were to be removed in 12 years. The felling cycle was fixed at 45 years. All trees over

36” girth except fruit trees, & all unsound & hollow trees of smaller dimensions, were to be removed. The prescription of removal of Teak was to be revised after 10 years. Rigid fire protection was prescribed.

The protection from fire & light canopy opening provided precisely the stimulus required for natural regeneration & establishment of young crop. The girth limit of removal of sound teak trees was raised from 36” to 42” in 1926 & in 1930 was reduced to 30”. The plan stated that “no cleanings thinnings or other improvement felling would be necessary during the first cycle. This had been the serious defect of the plan as cleaning & thinning in the young crop would have definitely improved the crop.

3. W.E. Pereira Plan (1929) for Nawapur & Nandurbar Reserves –

The area not covered by Dodgson’s both plans was covered under this plan. The plan was sanctioned under G.R.R.D. No. 7592 of 23.2.1929. Prior to this plan teak was exploited by Govt. Agency. Certain no. of trees were selected & felled in accessible areas every year & sold at depots by auction. The Bhils & other tribes were permitted to remove live wood. This privilege of removal of dead wood by forest tribes & other also caused injury to the crop.

The first attempt of systematic working was made in 1922. The area was divided in to 9 felling Series on eighty years rotation. 9 coupes were laid out annually & sold for clear cutting. In 1923 the scheme was modified under C.C.F’s letter No. 3784, dt. 29th January 1923. The felling series were recast & coupes both for clear cutting & improvement felling were laid out & put up for sale. Marking of trees for retention in coupes selected for improvement fellings was not properly understood by the staff & resulted in removal of a substantial portion of overwood. The improvement fellings were thus suspended.

The working plan adopted the system of conversion to uniform system. Two working circles were formed as Western W.C. & Eastern W. C.

A. Western Working Circle –

The areas comprising of forests capable of growing timber of good size & quality were included in this working circle. The silvicultural system adopted was conversion to uniform system. Three periodic blocks were formed. Area of PB-I

were laid down & remaining 2 PB.s were grouped together for the duration of plan. Areas which were accessible and contained mature stands were allotted to PB. I . A rotation of 60 years was fixed on the result of stem analysis. Teak was attaining girth of 41” at the rotation age. A felling cycle of 20 years was adopted. The yield was controlled by area. The working circle was divided in to 17 Felling series. Each F.S. was subdivided in to two block in the ratio of 1:2 by area. Each of these blocks was divided in to 20 units corresponding to the number of years in the felling cycle. These were to be two distinct series of operations.

- i) Clear cutting combined with regeneration (ii) Improvement fellings. In area of clear cutting all trees except Moha & Mango were to be clearfelled. Groups of young saplings of Teak, Tiwas, & other valuable sps. Upto 18” gbh were to be reserved. In clearfelled areas Plantations of Teak were to be carried out in suitable areas. In areas not suitable for Teak other species as Tiwas, Biya, Sadada, Babul, Khair, Dhawada, Shisam etc. Were to be raised. A cleaning in 3rd & 5th year was prescribed. Thinning was prescribed after 20 years.

B. Eastern Working Circle -

The areas containing forests which were yielding only fuel but were considered capable of producing timber of small dimensions were included in this working circle. The silvicultural system adopted was conversion to uniform. Rotation was fixed at 40 years. Yield was controlled by area. Five felling series were formed. Each felling series was divided in to 40 coupes. Every year on coupe was to be demarcated & sold for clear cutting. Teak was prescribed to be raised in areas suitable for the same elsewhere other species such as Dhawada & Khair were to be raised. Thinnings were not prescribed.

Working in accordance with the prescriptions of the plan was suspended from the year 1934 except in the Eastern working circle with the object of finding modification to be tried in order to eliminate some practical difficulties in the prescription. The difficulty was experienced because of rigid objective of attaining uniformity in short time. Rotation of 60 years was adopted & transformation was to be attained in single rotation of 60 years. The plan detaied the afreas to be clearfelled year by year for the first 20 years of the rotation. The most mature &

overmature areas in each F.S. were taken first. Groups of saplings were to be reserved from felling but this proved impracticable & the clear fellings sacrificed immature growth. In the result some young even aged crops were raised partly from natural regeneration and coppice & partly by plantation. In the early years of the plan the local staff was unexperienced in the plantation works & unprepared to supplement natural regeneration effectively. The unforeseen difficulty was damage due frost which led to dying back of leading shoot & loss of increment. These causes also decreased the anticipated success of new crop. The remaining 2/3 area was subjected to improvement felling. Removal of dead, dying & unsound trees & all trees of more than 42" except sound trees of teak above this girth were to be felled. These areas to be worked in 20 years though these had to eventually to provide coupe No. 21 to 60 for conversion to regularity under final felling in anything from 20 to 40 years after the improvement fellings had been carried out. As it was not certain that what place the area under work is going to get in rotation & in the absence of volume check the intensity of felling carried out varied with individual inclination of marking officers. The heavier markings resulted in deterioration of the conditions of soil for natural regeneration. The result of enumeration carried out in hill block during 1962 revealed that the proportion of teak in the stands had gone down to 20.71 % from 37.55 % in 1923.

4. E. A. Garland's Plan (1938)

E. A. Garland wrote " West Khandesh (South Tapi) working plan " for the erstwhile West Khandesh Division. The plan was drawn up for 40 years & provided for its revision after 15 years. The plan was written in three parts instead of the usual two parts. A separate part III was devoted to pasture forests comprising the Eastern half of the division. Four working circles were formed under this plan.

1. Teak timber working circle.
2. Teak pole & fuel working circle.
3. Protection working circle
4. Pasture working circle

1. **Teak Timber Working Circle** - This working circle comprised of Narayanpur block (now Gujrat State) Deomogra block & Northern part of Hill & Umarpata block. The method of treatment was selection system with 20 years felling cycle. Provision was made for supplementing stock of teak by plantation. Due to

different treatments to different blocks in the past the annual coupes contained different types of crops especially in Hill & Umarpata blocks.

- a) This type contained clearfelled crops & hence the marking was of nature of thinning.
- b) This type contained improvement felled crops & the marking was to be in the nature of heavy thinnings in the immature crop & silvicultural marking in old crop.
- c) This type contained total irregular crop not worked under previous plans. In this type & Deomogra blocks marking was of selection type. 10 % of mature crop was to be retained. A felling cycle of 20 years was adopted. A thinning in plantation areas in the 5th year 7 thinning of coppice shoots in the worked areas was also prescribed.

Results :- In the initial period of plan these forests had to bear the burden of meeting the demands of exigencies of war, & in addition to normal felling large scale selective felling had to be undertaken irregularly a result had been depletion of stock in higher classes.

- a) In this type 70 % of stems were prescribed to be thinned in the younger age classes of Teak and generally 50% of the stems were thinned but even this proved to be heavy for these poor areas.
- b) In this type thinning in younger age classes has helped but removal of teak stems in order to maintain 50% ratio between the trees reserved and trees marked for felling has resulted in the depletion of fairly sound stock.
- c) In this type, the prescription did not prove to be adequately beneficial as unsound trees were retained which should have been replaced by young coppice growth or plantation.

In Deomogra block where previous working had been of selection type the exploitations though showed improvement in the growing stock in some cases resulted in removal of sounder stems in higher girth classes which if retained would have put on useful & valuable increment. The existing crop was predominantly middle aged & immature with adequate regeneration of coppice & seed origin. Percentage of teak also increased considerably. In places where

exploitation was excessive due to war exigencies, the crop showed an appearance of two storeyed forests found in coppice with standard system.

1. Teak Pole & Fuel Working Circle -

This working circle included parts of Hill block & Umarpata block not included in Teak timber working circle. Crop was generally of poor quality. Teak was main species. Coppice with reservation of standards & advance growth of valuable species system was followed with ultimate object to create irregular forest. All promising trees of valuable species were to be retained. As large part of crop consisted of unsound stock heavy fellings were executed. A felling cycle of 40 years was adopted. Cleaning in 5th Year & thinning in 20th year were prescribed. No definite prescriptions were laid down for artificial regeneration on account of cost. Agri-silvi system was recommended in suitable areas. Closure of 8 years was prescribed.

Result: - Though C.W.R. system was prescribed in actual practice improvement felling as prescribed in Pereira's plan continued & hence the crop thought of irregular nature has not shown the general improvement that was expected. The coppice growth of valuable species was suppressed by species of lesser value. The percentage of teak decreased. The attempts of artificial regeneration were in patches scattered all over & hence they suffered suppression by overhead trees & fire hazards. The cutting back operations were not prescribed immediately after main fellings & this was important draw back of the plan.

2. Protection Working Circle :-

All the steep & precipitous areas of Hill & Umarpata blocks were included in this working circle. The tree growth was generally sparse with large open areas. Teak which was considered as unsuitable species for catchment area as its leaves tends to concentrated drip & consequently cause erosion of surface soil was permitted to be exploited when practicable.

Result :- The encontrolled fires destroyed all young regeneration. No exploitation was done 7 the valuable teak trees suffered illicit cutting further degradation of the area.

3. Pasture Working Circle :

The area dealt with under this working circle forms Eastern part of the Dhule division consisting most part of Sakri, Pimpalner and Dhule ranges of the division. The problems of management of these areas are age old and Mr. E.A. Garland in his plan for West Khandesh (present West Dhule Dn.) devoted a complete part (part III) on management of these area. Garland, while discussing the management of these area writes that “these area could best be managed as wooden pastures, the factor of the locality can not possibly permit the growth of the tree crop which can be called as forest in the real sense of the word. He emphasised planting Anjan and other useful species in these areas. He had also proposed planting the suitable areas under agri-silvi system and proposed clearfelling for such plots the area under such regeneration were to be closed for grazing for 8 years and thinned during 5th and 20th year.

In order to achieve rotational grazing over 40 year cycle in these areas 40 annual coupes each called a pasture were indicated. Five coupes were grouped together to form a ranch. The grouping of coupes of pastures in the ranches was so arranged that one coupe could remain closed for 8 year and the remaining 4 pasture could remain open to grazing during these 8 years. Such ranches were denoted separately. Nineteen felling series were formed and in each felling series there were eight ranches ABCDEFGH and forty pastures. Grazing incidence was fixed at 2 acres per cattle unit. The rotational grazing was so arranged that during the rainy season i.e. 15th June to 31st October for each village, there was one area or pasture which was to remain open for grazing only for the first 1 ½ months (15th June – 31st July) and thereafter closed for rest and recuperation until 1st November. The third Pasture was to be opened on 1st August and grazed until 14th Sept. And 4th pasture was to be open on 15 sept. And was opened to grazing until 31st oct. From the first November to 14th June of the following year all the 4 pastures were to remain open. The fifth pasture in the ranch was to remain closed to grazing for 8 years. The four pastures open to grazing were to be rotated in respect of the period of closure on the four year rotation to give them equal chances of improvement.

It was prescribed to appoint special forest guards to enforce the rotational grazing, each forest guard to look after 4 ranches i.e. 16 pastures. The cattle

admitted to ranches were to be given passes and metal tags to put around their necks to facilitate detection on illicit grazing.

Result :- Though the scheme was beneficial for improvement of the grazing lands it could not be brought in to effect due to its complicated nature. Beyond applying closure to the pasture which was to be regenerated no other prescriptions could be enforced. The first and foremost factor governing the successful implementation of the scheme was the public co-operation which lacked, on account of indifferent attitude of the public to new system which brought some restriction. Socio political change taking place in that period also could have played a major role in failure of the implementation. The National Movement in that period was anti Government & even the good activities of the then Govt. were opposed. Apart from this lack of adequate staff for demarcation of pastures and also for their supervision was another reason. Work of soil conservation also could not be implemented.

4. Shri K. N. Khisty's Plan (1965-1985)

61. Later, Shri. K. N. Khisty's plan (1965-85) – working plan for Dhule Division came into operation for the period 1965 to 1985. This plan was drawn up for 20 years & revision after 10 years was proposed if required. Following Working Circles were formed.

1. Protection Working Circle : - The protection working circle included areas of Nawapur, Chinchapada, Pimpalner, Sakri and Nandurbar ranges, Situated along the slopes upon the ridges of Sahyadri hills forming the catchment of water courses in the region. It aims at preservation and improvement of vegetal cover to conserve soil and moisture of the area. Though the areas consisted of mature and over mature crop, no felling was prescribed to avoid further opening and degradation of the area. However, it was felt that removal of dead teak timber may not cause any damage to the area and accordingly removal of dead teak timber was prescribed to plant seedling where ever the soil permits. The total area allotted to this working circle was 9905.5 Ha. Divided into 20 coupes. Due to difficult terrain, no prescription was followed. Grazing, fires, illicit cutting of the

trees has opened the area, leading to the loss of soil cover and at many places mother rock is exposed.

2. Deomogra Working Circle:- The working circle consists of 1-40 comppts of Deomogra block which is situated in the North West corner of Nandurbar range. The forest area of the working circle is 10276.596 Ha. Silvicultural system prescribed for this working circle was selection cum improvement. The exploitable size for teak was prescribed at 150 cm. Girth at B.H. and for misc. Spp. 125cm. Accordingly, the coupes in this working circle were worked till the year 1974-75. From the 1975-76, the whole area of this working circle was allotted to the F.D.C.M. and there after no further operations were carried out by the division in this area.

3. Special Teak Working Circle:- The areas of this working circle were spread over Nawapur and Chinchpada ranges which were fit for conversion into regular forests of teak and other valuable species. Total area of W.C. was 5644.960 Ha. The silvicultural system prescribes was clear felling and planting with Teak and Khair. 4 Periodic blocks of 20 years each with rotation of 80 years was prescribed. From the year 1980-81 onward, no coupes in this working circle could be worked due to sparse tree growth. And, in all 31 coupes from both F.S. were deleted from working due to poor stocking. In addition, 5 coupes could not be worked as they lie in the disputed area along the inter state border with Gujrat State.

After clear felling the P.B.I., areas they were artificially regenerated by Teak in suitable areas & Khair in other areas. However the condition of the plantations is not satisfactory because of Shallow soils. The pole crop of any of the plantation is stunted, crooked, malformed because of fires, grazing, and hacking. The height of the teak plants in the plantation areas is poor. In the remaining PB-areas, improvement felling were carried out for the betterment of the stock. Natural regeneration of superior injaili species is almost absent. The site quality is fast degrading because of fires, grazing illicit cutting. Natural regeneration of Kudi, Sadada, Tiwas & Bondara was observed in few patches.

4. Hill Working Circle :- The areas included in this working circle were spread over the hill block areas excluding the areas allotted to special Teak working circle. The areas in this working circle are spread over Nawapur, Chinchpada and Nandurbar ranges. The total area of this working circle was 17083.063. The objective of management, in this working circle was to safeguard against soil erosion, to preserve and improve the forests, so as to increase the yield of timber and fuelwood, to meet the local demands. Accordingly the silvicultural system, the selection cum improvement was prescribed for forests of this working circle. However from the year 1979-80 onwards till the expiry of the plan, 1984-85 i.e. in the last 5 years of the plan period, no area was worked as prescribed. 62 coupes were deleted from working due to sparse tree growth, out of 200 coupes, of all felling series. Number of stem per hectare have come down from 577 of 1923, to 103 of 1992, indicating that nearly 4/5th of the stock was depleted over the years.

Fire and grazing, illicit cutting and encroachment in the area have led to degradation of the area rendering large parts of the area either understocked or open.

5. Coppice With Reserve Working Circle :- The minor forests spread on the Eastern aspect of the hill region in Nandurbar, Sakri and Pimpalner ranges are included in this working circle. The total area of this W.C. was 22481.521 Ha. The objective of management were to improve hygienic condition, composition and density of the crop so as to get optimum outturn of small timber and fuelwood. Accordingly the area of this working circle was divided into 9 felling series. However, out of 225 coupes that were due for working, only 45 coupes could be worked and rest 180 coupes were deleted from working due to sparse tree growth.

However, in the last five years large scale afforestations were carried out and vegetal cover was brought up, in part of the area. Coppices of valuable species are still present in Sakri and Pimpalner ranges. However the coppice with reserve area of Nandurbar range is totally devoid of any vegetation.

6. Pasture Working Circle : The areas are spread over Sakri, Pimpalner, and Dhule ranges. Areas of poor quality, which are unfit for tree growth were managed under pasture working circle. The total area included under this W.C. was 54649.869 Ha. They are with little soil and fertility. These areas were to be managed under rotational grazing system with closure and opening of the areas in a certain period. Improvement of the area by introduction of grasses and fodder tree species was also proposed.

The pasture working circle was divided in to 19 felling series with 186 compartments. Each F.S. was divided in to 10 ranches each ranch further divided in to four pastures. Thus there where 40 pastures or coupes in each F.S. In ranch one coupe was to be closed permanently for 10 years and improvement work to be undertaken in it. The remaining 3 pastures were to be subjected to rotational grazing. Out of these three pastures one was to be assigned to the sheep grazing & other two for grazing of horned cattle. Out of these two one was to be closed for rainy season and both opened for grazing in fair season. These 3 pastures were to be rotated in such a way that each one get rainy season closure once in three years. The pasture under closure was to be improve by raising better vafieties of fodder grasses and tree spp. Of economic importance and fodder value such as Anjan, Siras, Neem, Sissoo, and Eucalyptus.

The impracticability of the prescriptions, the heavy grazing pressure resulted in the failure of the implementation of the prescriptions. The grazing settlement of Shri. L. K. Jambavadekar 1971 which followed this paln further deteriorated the pasture areas as the carrying capcity of the areas was not properly estimated.

7. Kuran Working Circle : The Kuran W.C. with 12 Kurans spreading over Sakri & Dhule ranges included an area of 11494.619 Ha. These were to be maintained as fodder reserves permanently close for grazing The work of improvement of the kurans with better varities of grass and also fodder yielding tree species was prescribed.

Grazing was no allowed. However, the Kurans turned to Kusali reserves, except Laling Kuran, because of fires and illegal grazing by cattle,

through out the year. Plantations that were taken up in the kurans fared mixed results. In the recent years aerial broadcasting of hamata and babul seed was taken up in Lalling kuran. It showed good result at places.

FODDER BANK SCHEME:

The scheme of fodder bank at Dhule was taken up in the year 1958-59 with view to keep the stock of dry baled hay, ready, to make it available in the scarcity areas, at short notice. The scheme was to improve the quality and quantity of grass by taking up land improvement works and introducing better quality grasses. The work of cutting grass, baling it and storing the same in the godowns was done departmentaly with the help of the staff specially appointed for the purpose. The dry baled grass was to be sold to the consumers on no profit no loss basis. The Lalling kuran was taken for improvement under this scheme.

8. Khair (Overlapping) Working Circle : The areas spreads over Nandurbar, Nawapur, and Chinchpada ranges, in particular the areas of Deomogra Working Circle, hill working circle the PB- II area of special Teak working circle. The total area of this W. C. Was 29029.465 Ha. The area was divided into three felling series and coupes. It aims to regulate the exploitation of khair trees.

Accordingly selection system was prescribed. Exploitable girth was prescribed as one meter at breast height.

During the plan period it was said tha large scale illicit cutting of Khair trees has taken place, to meet the requirement of Katha industry, located in the Gujrat State, leading to the total elimination of premature and mature girth classes of Khair trees. Since Deomogra block was handed over to FDCM in the year 1975-76 , no Khair extraction has been carried out since then.

9.Kodai (Overlapping) Working Circle : It was spread over the entire area of Nawapur, Chinchpada, Sakri, Pimpalner and Nandurbar ranges. The total area of the W.C. was 51522.874 Ha. It aimed at extraction of gum on scientific lines. Owing to faulty extraction technique adopted by the local villagers, kadai trees have dwindled in number, very rapidly. No natural regeneration of kodai trees

could be obtained because of fires, grazing and edible nature of kodai seed. Very little efforts were made to plant these trees in the afforestation programme.

SECTION-3 : SPECIAL WORKS OF IMPROVEMENT

Since 1967-1968 large scale afforestation works were taken up under various scheme in Dhule division. A total of 46,734 ha. Were afforested under various schemes by Dhule division as well as Watershed Management and Planning Division. The area afforested, year wise is given below, in a tabular for. Most of these plantations were successful till the end of 5th year. After that they have become vulnerable to illicit cutting for fuel and fodder. However, at many places still good plantations can be seen.

5.7 WORKING PLANS OF R.L.CHOUDHARI AND S.H.PATIL

5.7.1: The Working Plan by Shri R. L. Chaudhary for the period from 1970-71 to 1989-90, pertaining to then Dhule Forest Division, comprised now of Sirpur, Sangvi and Boradi Dhule Forest Division, expired in the year 1990. The working plan by Shri S. H. Patil for the period 1997-98 to 2006-07, of the then Dhule Forest Division comprising now of Dhule, Shindkheda, Sakri, Pimpalner, and Koindaibari ranges of present Dhule Forest Division, expired in year 2007. The present Dhule Forest Division was created on 01-01-2008 with Shirpur, Sangvi, Boradi, Dhule, Shindkheda, Sakri pimpalner and Kondaibari, ranges. The site of the division is probably same as it was the time of the district formation.

5.7.2: The major portion of Dhule Forest Division comprising, of Sakri, Shirpur, Sangvi, Boradi Dhule was covarad under the workind plan North Dhule forest Divising by R.L. Chudhari from 1970-71 to 1989-90 which expired in year 1990 Who covered by S.H.Patil Working plan from 1997-98 to 2006-07 .

5.7.3 R.L. CHAUDHARI'S WORKING PLAN (1970-71 TO 1989-90) –

This plan was prepared for the forest areas of erstwhile North Dhule Forest Division. Based on composition and type of forests, the following circles were constituted.

(1) **Protection Working Circle** – The hilly compartments containing more than 25-degree slope were brought under this working circle. The total area allotted to

this working circle was 24688.40 ha. These areas had poor, under stocked forests with shallow and murrummy soil. No fellings were prescribed in this area. However, extraction of dead and fallen trees and soil conservation works were proposed. Afforestation works with mixed plantation of hardy species like khair, bamboo, neem, hirka etc. were also proposed.

(2) Selection-Cum-Improvement Working Circle-The hilly compartments which were not included in the Protection Working Circle, were brought under this working circle. The area under this working circle was 71351.19 ha. The crop consisted mainly of teak (20-30%), except in few patches, where the site quantity was IV a and teak was sparse. The common associates of teak are dhawada, salai, khair, tiwas, bondara etc. The silvicultural system proposed for these areas was Selection-Cum-Improvement felling, with the aim to increase the proportion of teak and other valuable species, and to build up a growing stock of higher girth classes. The exploitable girth for teak was 105cm, at breast height and for other species, it was kept at 120 cm girth at breast height and for tiwas and khair, the exploitable girth at breast height was fixed at 90 cm. A felling cycle of 20 years was adopted. The yield was regulated by areas. Taloda range was divided into 12 felling series. All dead, dying, unsound, malformed and over matured trees were to be marked for felling. After demarcation of annual coupes, a treatment map was to be prepared to demarcate the unworkable areas, plantable areas and workable areas. No fellings were prescribed in unworkable areas. In the workable areas, only one in every two teak trees of exploitable girth and above was to be marked for felling. All harvestable trees of other species were to be marked for felling. Care was to be taken during marking to avoid permanent gaps in the canopy. C/D grade thinning was to be carried out in congested immature crop, in favour of valuable species. In suitable areas, plantation of teak and other valuable species were to be raised in patches of one hectare or more. In all, 39 F.S. were falling in this newly constituted division and no coupes were worked.

(3) Conservation Working Circle- All better quality forests were brought under this working circle. These forests were mostly in plains with good density and with site quality III. The crop was generally young to middle aged, with scattered mature trees. In a few pockets, the growing stock was damaged due to illicit

felling. Hence, in order to utilize the good soil potential already available, and to convert a largely miscellaneous crop up to teak forest and to restock the areas heavily damaged by illicit felling, "Conversion to Uniform" silvicultural system was proposed. However the advance growth of teak (below 60 cm in girth at breast height) occurring in a minimum patch of 0.5 ha in extent, were to be preserved as a part of future crop. After clear felling, the area was to be planted with teak with standard planting technique. In poor and badly drained soils, ain and khair were proposed for planting. The rotation age was fixed at 100 years. The area of this working circle was divided into 5 periodic blocks each of 20 years. Periodic blocks I and II were fully allotted and periodic blocks III, IV and V were grouped to form "PB unallotted". In PB-II and in unallotted PBS, improvement fellings were to be carried out. This working circle was falling in 8 ranges of the present Nandurbar Forest Division.

(4) Coppice with Reserve Working Circle-The greater portions of Shahada range were brought under this working circle. These were having poor, shallow soils with site quality IV-a and IV-b. Rotation of 30 years was fixed and the yield was regulated by area. Exploitable girth at breast height for teak, shisam, bija, tiwas, ain, haldu, siwan and khair was 30 cm and for other species it was prescribed as 60 cm. Edible fruit trees and karayee (*Strobilanthes callosus*) trees were to be retained.

(5) Afforestation Working Circle-The anjan forests in Shirpur range which had sparse and retarded growth were included in this working circle. An area of 14372.55 ha was included in this working circle and an intensive afforestation works were prescribed. A rotation of 30 years was fixed.

(6) Kuran Working Circle-Three kurans namely Sonabardi, Dahiwad and Mhais were included in this working circle. Plantation of fodder grasses in suitable fenced areas of 4 ha each was annually prescribed.

(7) Toranmal Park Working Circle- An area of 1466.42 ha on Toranmal plateau was included in this working circle. The object was to beautify this plateau area by planting ornamental species and to persevere its existing flora.

(8) Bamboo (overlapping) Working Circle- Extraction of bamboo on a 3 year rotation was proposed, coupled with bamboo under-planting in suitable patches.

(9) Karayee (overlapping) Working Circle- To regulate Kadai gum tapping in the area, Kadai (overlapping) Working Circle was proposed. Each tree was to be tapped for 3 years and was to be given a rest for the next three years, Second tapping cycle was to begin in 7th year and was to be continued for another 3 years. Blaze method was proposed to tap the gum. Only one felling series now falls in Taloda Range consisting of 2 coupes. Each coupe was to be worked for 3 years and was to be given a rest for the next 3 years.

5.7.3.1 RESULTS OF PAST WORKING- R.L.CHOUDHARI'S WORKING PLAN.

(1) Protection Working Circle-None of the prescriptions of the working plan could be followed effectively, owing to steep slopes and inaccessible conditions. Most of the forest areas were either under stocked or denuded. Owing to heavy biotic pressure, particularly from the villagers residing on the hills, these areas were further converted into degraded areas.

(2) Selection cum improvement Working Circle- The coupe working was carried out till 1976 and thereafter no coupe was worked, as the tree growth was sparse in those areas. A few teak plantations were raised, the growth of which is fairly satisfactory, however many plantations suffered from hacking. It is also observed that no thinning operations were carried out in many of these old plantations. In other natural forest areas, the growing stock suffered heavily from the biotic interference. Teak trees were hacked illicitly, whereas other miscellaneous trees were left untouched. Coppices have come up, from the hacked stocks of teak stump. The resultant growing stock is miscellaneous high forest with a good amount of teak coppice that has attained 30-35 cm girth at breast height. Teak trees remained the major constituent of the growing stock, having 25-30% of the total composition. Along the plains, the forest area was subjected to heavy encroachments.

(3) Conversion to Uniform Working Circle-The coupes were worked initially but were discontinued later due to inaccessibility and sparse growth. In the accessible area, the forests were degraded badly owing to biotic interference. The total area planted was 7436.52 ha.

- (4) **Coppice with Reserves Working Circle-** The coupes in some of the felling series were worked initially but later the works were discontinued due to sparse tree growth. Heavy biotic pressure and encroachment of forest lands for cultivation led to non working of the coupes. Total felling series in this working circle was 54.
- (5) **Afforestation Working Circle-** Afforestation works were also not carried out as per the programme and the reason cited for deviation was “sparse tree growth”, which appears quite unreasonable. The biotic pressure in the areas had further degraded the forests. However the total area planted in this working circle was 14372.55 ha and the result of survival is not uniform.
- (6) **Kuran Working Circle-** The Kurans were not managed as prescribed in the working plan and the yield from them were not significant. Some improvement works were taken up as per prescription.
- (7) **Toranmal Park Working Circle-** Some development works has been carried out here, but the coupes were not worked intensively and hence the results are not apparent. The reason cited by the Division for this deviation, was again the “sparse tree growth”. A medicinal plant nursery has been developed. The area of this working circle was 1894.10 ha.
- (8) **Bamboo (overlapping) Working Circle-** The works of bamboo coupes were not done regularly and hence the clumps have become congested. The haphazard illicit removal of bamboo Culm by the local people has further deteriorated the condition of clumps. Sporadic flowering of bamboo clumps has also resulted in decrease of number of clumps per hectare. The bamboo plantations were taken up under various schemes in various ranges in a haphazard manner and the sites were selected on adhoc bases.
- (9) **Karayee (overlapping) Working Circle-**The intention of creating this working circle was to provide adequate tapping of gum by introducing scientific method of tapping and to provide adequate silvicultural rest to the trees, so as to heal the blazes sufficiently. However, from the year 1977-78 to 1978-79, tapping of gum was executed through contractor system and

thereafter the gum collection was done through Tribal Development Corporation, Maharashtra State. Tapping of gum was not regulated, as the coupe areas were large and scattered. The main intention of the working plan was defeated, as no rest could be provided to kadai trees, due to continuous tapping, leading to the death of many kadai trees. Excess tapping by means of big blazes made on the trunks of kadai trees, and due to non-adoption of scientific methods also led to the death of these trees. The lack of regeneration of kadai trees further worsened the situation.

5.7.4 S. H. Patil's Working Plan (1997-98 to 2006-07)

This plan was prepared for the forest areas of erstwhile West Dhule Forest Division. Based on the composition and type of forests the following working circles were constituted:

(1) Protection Working Circle- All protection forests were included in this working circle. The area spreaded along the precipitous slopes of the ridges and on the spurs of Sayhadri range and extends over to the ranges of Kondaibari. And Pimpalner. The area was required to be protected from felling, grazing and fires. Improvement works such as gap-filling, dibbling and broad casting of seeds was to be taken up along with soil conservation works for the betterment of the area.

(2) Section Cum Improvement Working Circle- This Working Circle included the best forest areas Kondaibari. And Pimpalner ranges, having matured / over matured trees. The object of that working circle was the removal of matured and over matured trees from the forest and to make space for natural regeneration to grow and to make overall improvement in the stock.

(3) Improvement Working Circle- All the areas of Hill block and all the areas of Umarpata block were included in this working circle. It spreads over the Kondaibari. And Pimpalner ranges. These areas were capable of producing good quality timber. It aimed at improvement of a single coppice shoot of valuable species, along with gap-felling and for improvement felling of valuable species in the standing crop.

(4) **Afforestation Working Circle-** The barren and degraded forest areas, nearer to habitations were clubbed together, to constitute this circle. It aims to meet the fuel wood demand of the areas, by raising fuel wood plantations, with a short rotation. Simultaneously, it aimed to bring back the vegetal cover in the area. These areas were degraded and denuded for want of fodder and fuel wood. These areas were spread over the entire erstwhile West Dhule Division. The plantations raised, were to be felled at the end of 20th year and fuel wood was proposed to be supplied to the villagers, at subsidized rates.

(5) **Kuran Working Circle-** This working circle included areas of all existing kurans of Shri. K. N. Khisty's plan. The total area under this working circle was 5762.286 ha. These areas were to be managed as traditional grass reserves and were required to be planted with improved varieties of grasses. The grass was to be disposed off preferably by permit system. The area treated during this Plan period was 580.81 ha.

(6) **Silvipasture Working Circle-**These areas were with very little soil depth, and were unable to support tree crop, but were potentially good for raising grasses and for shallow grown trees. The extent of the area was about 12201.469 ha, which formed almost 10% area of this Division. The silvipasture areas have improved with soil conservation works, and by planting better variety of grasses and shallow grown trees. The grass was allowed to be removed after its establishment.

(7) **Bamboo (overlapping) Working Circle-** In order to improve the stocking, density and to conserve soil and moisture of the area, bamboo under planting in Hill block area was proposed. It's spreaded over Nawapur and Chinchpada ranges. It was also proposed to extract silviculturally available bamboos on a 3 year felling cycle basis, and also to under take bamboo plantations in the annual coupes that were due for working.

(8) **Wild Life (overlapping) Working Circle-**This working circle includes the entire area of the Division and it aim at improvement of natural habitat of wild life. It prescribed for inventory of wild life, a strict protection

of its habitat, from illicit cutting, grazing and fires and furthers a creation of awareness among the public, about wild life conservation, as an important task to be taken up during the plan period. Nothing substantial was done.

(9) Non-Timber Forest Produce (overlapping) Working Plan- These minor forests produce are of late correctly called Non-timber Forest Produce, as these are not really minor. There are many produces like, tendu leaves, gum, moha flowers and fruits etc which are in great demand and needs proper harvesting techniques through research.

5.7.5 RESULTS OF PAST WORKING- S.H.PATIL WORKING PLAN.

(1) Protection Working Circle - Owing to steep slopes, none of the prescriptions of working plan could be followed. The problem was further aggravated due to biotic pressure. The area is almost barren with sparse growth of Bomboo at some places. Protection works were neglected, Forest area are under large Scale encroachment.

(2) Selection cum Improvement Working Circle - None of the prescriptions of working plan was followed due to lack of trees of girth classes, prescribed under this working circle. The area prescribed under this working circle is under heavy encroachment too.

(3) Improvement Working Circle - No systemetic coupe working was carried out, as tree growth is very sparse. Teak plantation is raised in the past, show fairly satisfactory growth but biotic pressure have teaken toll The common feature is that Teak trees have been badly hacked, where as miscellaneous trees were left an untouched by and large. Coppices have come up from hacked Teak stock Forest area is subjected to heavy encroachments in this Working circle.

(4) Afforestation Working Circle - Afforestation Works and Soil and moisture conservation works were done at various places under different schemes. The details are given in Table No. 31 in chapter I The plantation caried under this Working Circle are badlly hacked and protection was also withdrawn after five years. Heavy encrochment is noticed in this working circle too.

(5) Kuran Working Circle - No systematic management of kurans was carried out as per prescriptions of working plans for unknown areas. Some improvement works in adhoc way have not resulted in to any significant improvement.

(6) Silvipasture Working Circle - No systematic works were done as per Working plan's prescription some works, which had been done on adhoc basis has not given as deseired results. The area of this working circle is under heavy encroachment.

(7) Bamboo (overlapping) Working Circle - No proper and systematic cutting of Bomboo was done as per silvicultural prepration for unknown reasons. The un-authorized and haphazard cutting by local pople has further aggravated the problem. Bomboo plantation, although done in haphazard manner and site selected was on adhoc basis, have come up to desered level.

(8) Wild Life (overlapping) Working Circle - Neither there was any scope nor any improvement work for the habitat of wild life was done in the division.

(9) Non-Timber Forest Produce (overlapping) Working Plan-(N.T.F.P.) - The many Non Timber Forest Produce product lik Gum Mahua flowars, fruits, Honey, Lack and Tendu leaves are good demand. Revenue generated and works done; do not show that these works were carried out systematically, as per working plan Prepration. The work done is not up to satisfacetary level.

By and large, the implemation of working plan is extremely poor and enchrochment on a very massive scale is prevalent in the Dhule Forest Division.

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CHAPTER-VI
FIVE YEAR PLANS

6.0 In the current five year plan, the following plantation schemes in the division have been implemented.

Sr. No.	Name of the Scheme	Area dealt with	Sanctioned amount (Rs.)	Actual Expenditure (Rs.)
1.	Development of Western Ghat	50.000	1887000	1887000
2.	State CAMPA	1335.115	31889000	31889000
3.	Development of NTFP	224.750	8579000	8579000
4.	Plantation of Industrial Species	263.000	2581000	2581000
5.	Afforestation of degraded area	5400.970	101278000	101278000

(Source D C F Dhule latter No.

CHAPTER-VII
STAFF AND LABOUR SUPPLY

SECTION-1: STAFF

The following statement in table-29 below gives the total strength of the executive and ministerial staff in Dhule Forest Division as on 01-13-2013.

Table-29

Sanctioned and filled posts of Executive and Ministerial staff of Dhule Forest Division

Sr. No.	Designation of the post	No. OF Posts				
		Permanent Posts	Temporarily	EGS	Total	Vacant
1	2	3	4	5	6	7
1	Dy.C.F.	1	-	-	1	-
2	A.C.F.	3	-	1	4	-
3	Ranger surveyor	-	-	-	-	-
4	R.F.O.	8	1	2	11	
5	Forester	32	5	8	45	1
6	Forest Guard	128	16	14	158	8
7	Forest surveyor	2	-	-	2	-
8	Head Clerk	1	-	-	1	-
9	Accountant	10	-	-	10	1
10	Clerk	16	-	-	16	-
11	Steno typist	1	-	-	1	-
12	Jeep Driver	3	-	-	3	-
13	Armed Constable	1	-	-	1	-
14	Naik	1			1	
15	Mali	3			3	
16	Peon	4			4	
17	Bungalow Watchman	2			2	
18	Truck cleaner	1			1	
19	Forest laborers	-	204		204	
20	Part-time Bungalow Watchman					
	Total	217	226	25	468	10

SECTION-2: LABOUR SUPPLY.

There is acute shortage of labour especially during the planting season. The main reason of the non-availability of labour is that of more and more labours are attracted towards agricultural operations because of the comparatively lighter works, higher wages and other amenities. The labours in ranges adjacent to Gujarat are also alienating forestry work due to better income prospects.

SECTION-3: MREGS.

Dhule forest Division has proposed large scale forestry works to be executed under M.R.E.G.S. The year-wise detail is given in Table-30 below-

Table-30
Works executed under MREGS

Year	Area dealt	Cost of estimate (in Rupees)	Cost incurred (in Rupees)
2006-2007	--	--	--
2007-2008	--	--	--
2008-2009	C.C.T. 150 Hect.	4306685	3939120
	Forest Tank 12	9051892	6783938
	Total	13358577	10723058
2009-2010	C.C.T. 195 Hect.	5754575	5591046
	Forest Tank 19	15667334	11482424
	Total	21421909	17073470
2010-2011	C.C.T. 210 Hect.	13571334	11868253
	Forest Tank 04	4253250	3684125
	Total	17824584	15552378
2011-2012	C.C.T. 35 Hect.	1040977	803225
Total:	Forest Tank 07	7279963	6221324
	Gully plugging 06	2994737	1832266
	Total	11315667	8856815

Table-31

Plantation works in Dhule Forest Division from 2001-2002 to 2012-13 under different schemes

Sr. No.	Name of the Scheme	Plantation ha	Species	
			Teak	Mixed
1	Afforestation for soil & moisture Conservation	263.00	--	263.00
2	General Utility of - Bamboo.	1406.00	--	--
3	Development of fodder resources.	168.77	--	--
4	33 K V	23.70	--	23.70
5	Re-afforestation of Degraded Forests.(Trible)	1309.78	---	1309.78
6	Optic Fiber Project	14.50	--	14.50
7	Wind power Project	570.94	--	570.94
8	Production Forestry – FP4.			
9	Reafforestation of Degraded Forests (Non trible)	1021.13	--	1021.13
10	Western Ghat	1171.00	--	1171.00
11	Fodder Development – FW1			
12	Joint Forest Management.	963.00	--	963.00
13	Artificial Regeneration.	3848.00		3848.00
14	Employment Guarantee Scheme.	745.00	--	745.00
15	Compensatory Afforestation.	936.095	--	936.095
16	Natural Regeneration.	340.00	--	340.00
17	Nationl Haighway	35.88	--	35.88
18	Massive Afforestation programme	193.00	--	193.00
19	Plantation of Minor forest products.	394.05	--	394.05
20	Plantation of Medicine plants	118.00	--	118.00
21	National Afforetation program (FDA) A R	1325.00	--	1352.00
22	National Afforetation program (FDA) N R	450.00	--	450
23	Tourisim	25.00	--	25.00
24	Plantation under State Compa	826.53	--	826.53
25	Teak plantation	--	50.00	--
26	Plantation under trible Developmant	60.00	--	60.00
	Total	16208.375	50.00	16208.375

The year-wise plantations data in Dhule Forest Division from 1989-90 onwards are given in table-32 below:-

Table-32

The Year-wise plantations done in Dhule Division

Year	Area planted as per coupe	Area planted out side the coupe	Total
2000-01	1106.300	--	1106.300
2001-02	1516.00	--	1516.00
2002-03	703.28	--	703.28
2003-04	1362.58	--	1362.58
2004-05	605.00	--	605.00
2005-06	1351.53	--	1351.53
2006-07	1612.28	--	1612.28
2007-08	907.82	-	907.82
2008-09	2135.37	--	2135.37
2009-10	814.88	--	814.88
2010-11	1791.125	--	1791.125
2011-12	1530.52	--	1530.52
2012-13	771.65	--	771.65
Total	16208.375	--	16208.375

The present survival condition of plantations in the division is not satisfactory.

The reasons attributed to the failure are:

- 1) Wrong sites selection.
- 2) Failure to protect plantations from fire and grazing.
- 3) Biotic pressure.

There are various evaluation reports, which substantiate above finding.

SECTION-4: THE OUT TURN FROM THE FORESTS.

The details of actual yield and royalty received from Tendu leaves are given in the following table-33:

Table-33

Revenue received from sale of Tendu leaves

Year	Yield (in std. Bags)	Royalty received in Rs. In lakhs.
1994	3600	728907
1995	2700	1145000
1996	2700	802438
1997	1800	500000
1998	1800	511888
1999	2400	698584
2000	2400	796277
2001	2400	875776
2002	2400	529342
2003	2400	520919
2004	2400	441075
2005	1800	175000
2006	1800	933004
2007	3298	1880794
2008	4240	157724
2009	3300	1878786
2010	3300	1586786
2011	3300	986786
2012	3300	3413572

SECTION-5: PAST REVENUE AND EXPENDITURE.

The statement showing the figure of revenue and expenditure for years between 1989-90 to 2010-2011 is given in table -34 below:

Table-34

Revenue and Expenditure since 1994-95 onwards

Year	Revenue Rs. in lakhs.	Expenditure Rs. In lakhs.
1	2	3
1994-95	5548088.00	42688640.00
1995-96	10638044.00	45125100.00
1996-97	6766602.00	49113140.00
1997-98	4302186.00	51173385.00
1998-99	5300995.00	64523230.00
1999-00	4029086.00	75281739.00
2000-01	80813460.00	79524198.00
2001-02	5904301.00	74917602.00
2002-03	4925584.00	72573843.00
2003-04	3964272.00	91363317.00
2004-05	5288170.00	82163331.00
2005-06	3990367.00	7082572.00
2006-07	4987977.00	27407205.00
2007-08	3686754.00	62080148.00
2008-09	1354336.00	675028.00
2009-10	1990000.00	127088000.00
2010-11	1940000.00	196794000.00
2011-12	1861000.00	253111000.00
2012-13	4558000.00	222926000.00

(Source: DCF, Dhule latter No.Sales/1903 dt 15-2-2014)

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CHAPTER-VIII

STATISTICS OF GROWTH AND YIELD

8.0 SECTION 1: GROWTH OF TEAK

The forests of this tract belong to Southern Tropical Dry Deciduous as per Champion and Seth classification, with some variation as recorded in the Chapter of Forests. The forests at places are of poor quality, due to edaphic factors, and oftenly due to climatic conditions. Teak registers a slow growth. No stem analysis has been carried out, as felling has not been prescribed in this plan. Selection Working Circle which was earlier included in the Plan has been excluded from this plan due to paucity of available trees above selection girth. This Working Circle has been replaced by Improvement Working Circle. Coppice with reserve working circle has also been dropped.

8. SECTION 2 : VOLUME TABLE OF TEAK.

Tree enumeration details of various Working Circle;

8.1 Enumeration: In order to ascertain the composition of the growing stock during revision of Plans, by Shri S. K. Pathak 2002-2003 and then by Shri N. Vasudevan in 2003-2004. A partial enumeration to the extent of 1% of total area covered was carried out in Protection Working Circle, Selection Working Circle and in Coppice with reserve working circles. The entire area of the present Dhule Forest Division could not be covered, as it was restructured later, by deriving ranges Shirpur, Sangvi and Boradi from the ranges omitted from this Division are of erstwhile North Dhule Division.

Table-35

List of enumeration

Sr.No	Name of Working Circle	Population Area	Sample Area
1	AWC	55500.864	126.63
2	CWC	73352.155	159.03
3	IWC	10114.781	20.610
4	IWC & PWC	139.732	3.051
5	KWC	6309.541	16.083
6	PWC	3002.565	7.011
7	SWC	1302.566	3.033
8	SWC & PWC	364.622	09.000
9	SPWC	11094.147	26.091
Total		162680.973	364.086

(Source: Chief Statistician Nagpur letter No.D-15/1087,dt. 21.1.2014)

8.1.2 Enumeration for the current plan was a joint effort by Survey of Forest Resources (SOFR) unit of Nashik, the territorial Division and the Working Plan Division. “Systematic Line Plot Sampling with Random Start” was resorted to with the sampling size of a square plot of 20x 20 meters or 0.04 ha. Roughly, at an interval of 603.5 meters. The sampling intensity was 0.1%. This was done in five ranges only, i.e. Shindhkheda. Dhule, Sakri. Pimpalner, and Kondaibari in the rest of three ranges enumeration works are not done as explained above. The Statistical design and overall technical guidance was given by Chief Forest Statistician, M.S., at Nagpur. The period of enumeration was from September 2003 to November 2003. Analysis of the data was done by Chief Forest Statistician Maharashtra State. The information for each Working Circle is compiled as follows:

1. Statement-I - Estimated Growing Stock- No. of Sound Trees
2. Statement-II - Estimated Growing Stock-No. Of Sound Trees per Hectare
3. Statement-III - Percentage Distribution of Total stock to the Species Overall Girth Classes
4. Statement-IV - Percentage of Stock of Species in Girth Classes to the Total Stock in that Particular Girth Classes.
5. Statement-V - Estimated Growing Stock –Volume in Cubic Meter per Hectare.

8.2 Some noteworthy results of comparison of past and current enumeration are described in statement below in table-36 and 37 below.

Table No. 36

**Working circlewise estimated,number of sound tree per hectore are as follows.
No.of sound trees per ha**

Sr.No.	Name of Working Circle	Total	General utility species	Special utility Species	Minor forest produce species	Other species
1	Afforestation W.C.	80.208	4.242	14.771	13.270	47.925
	% of stock to total stock	100	5.29	18.42	16.55	59.74
2	C.W.R.W.C.	46.920	7.966	6.513	21.208	11.233
	% of stock to total stock	100	16.98	13.88	45.20	23.94

CHAPTER-VIII: STATISTICS OF GROWTH AND YIELD

Sr.No.	Name of Working Circle	Total	General utility species	Special utility Species	Minor forest produce species	Other species
3	Improvement W.C.	115.214	60.702	16.308	19.513	18.691
	% of stock to total stock	100	52.69	14.15	16.94	16.22
4	Improvement & Protection W.C	134.76	99.430	6.268	15.100	13.960
	% of stock to total stock	100	73.78	4.650	11.21	10.36
5	Kuran W.C.	78.43	0.238	17.111	20.084	40.996
	% of stock to total stock	100	0.30	21.82	25.61	52.27
6	Protection w.c.	117.86	57.806	11.531	11.251	37.273
	% of stock to total stock	100	49.05	9.78	9.55	31.62
7	Section W.C.	264.241	162.46	30.026	19.211	52.544
	% of stock to total stock	100	61.48	11.36	7.27	19.89
8	SCI & Proct. WC	318.87	259.989	26.663	0	32.218
	% of stock to total stock	100	81.53	8.36	0	10.10
9	Selection & Prot W.C	53.475	0	9.104	7.656	36.715
	% of stock to total stock	100	0	17.03	14.32	68.66
	Total weighted average	62.259	10.892	9.930	16.442	24.996
	% of stock to total stock	100	17.49	15.95	26.41	40.15

(Source: Chief Statistician Nagpur letter No.D-15/1087,dt. 21.1.2014)

8.2.2 Coppice with Reserve Working Circle: - In this Working Circle, 5.29% of trees are in the girth class below 16.55cm. Very few trees are in upper class, which shows that very fewer reserves were kept while working under this Working Circle. The trees of middle girth class were less removed. This Working Circle stands omitted in this Working Plan.

8.2.3 Selection Working Circle: - In this Working Circle, 61.48 percentage of trees are in the girth class below 11.36cm. The trees of girth class above 7.27cm are just 19.89 and in preultimate class. There are annual 11.36 trees per hectare, indicating that the area is unsuitable for selection working circle. This Working Circle stands omitted in this Working Plan.

8.2.4 Protection Working Circle: - In working Circle, nearly 9.78 % of trees are in girth class below, 49.05cm. The total tree per hectare is approximately 31.62 per hectare.

8.2.5 Various regression equation of growth as per FSI report:-

Forest Survey of India, Dehradun has carried out a detail study of growth pattern of different species, for various zones of the country. The volume equation relevant to this region is reproduced in Table 38 below:-

Table 37

Relevant Volume equation

Sr. No.	Species Name	Volume Equation
1	<i>Acacia catechu</i>	$V = -0.02471 + 0.16897D + 1.12083D^2 + 2.9328D^3$
2	<i>Anogeissus latifolia</i>	$\sqrt{V} = -0.20236 + 3.13059D$
3	<i>Boswellia serrata</i>	$\sqrt{V} = -0.1503 + 2.79425D$
4	<i>Cassia fistula</i>	$\sqrt{V} = -0.153973 + 2.724109D$
5	<i>Diospyros melanoxylon</i>	$V = 0.15581 - 2.2075D + 9.17559D^2$
6	<i>Lannea coromandelica</i>	$V/D^2 = 0.14004/D^2 - 2.35990/D + 11.90726$

8.3 SECTION 3 : PRICE & VOLUME INCREMENT

8.3.1 For the last so many years, no regular harvesting of timber and firewood has been carried out. However the yield is from extraction of material from the disforested areas, removal of windfallen and seized material.

8.3.3 The revenue realized from the sale of these sale of Tendu leaves during last 12 years is given in table- 41 below:

Table- 41

Revenue realized by Tendu leaves collection in following table.

Sr. No.	Year	Standard Bag	Royalty received
1	2000-01	2400	796277
2	2001-02	2400	875776
3	2002-03	2400	529342
4	2003-04	2400	520919
5	2004-05	2400	441075
6	2005-06	--	--
7	2006-07	1800	175000
8	2007-08	2400	931000
9	2008-09	7000	1978850
10	2009-10	1144.38	1878786
11	2010-11	1228	2152572
12	2011-12	493	986786

(Source D C F Dhule letter No sale 1903 dt 15-2-2014)

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CHAPTER-IX

WILDLIFE PRESERVATION

9.0 SECTION 1 : DESCRIPTION OF HABITAT

The tract dealt herewith was fairly rich in number and varieties of wildlife once upon a time. But it stands in perilous state today. 8295 ha. area of Range Shirpur which was declared by the Government Notification No. WLP-1085/CR 75/F-5(VI), dated 25-02-1986 and the said area has now been handed over to Dy. Conservator of Forest, Wildlife Division, Nasik.

9.0.1 The following species of fauna is found here.

- (A) Carnivorous :- (i) Panther (Panthera pardus) (ii) Hyaena (Hyaena hyaena)
(iii) Wolf (Canis lupus) (iv) Jackal (Canis aureus)
(v) Fox (Vulpes bengalensis)(vi) Cat (Felis bengalensis)
(vii) Jungle cat (Felis chaus)
- (B) Herbivorous :-
(i) Barking deer (Muntiacus muntjak).
- (C) Fruitivorous :-
(i) Flying squirrel (Pteromya fimbriatus) (ii) Three striped palm squirrel (Funambulus palmarum).
- (D) Omnivorous :-
(i) Porcupine (Hystrix indica) (ii) Hare (Lepus nigricollis)
- (E) Wild Birds:- (i) Painted sand grouse (Pterocles indicus) (ii) Common sand grouse (Pterocoles exustus) (iii) Peafowl (Pavo cristatus) (iv) Grey jungle fowl (Gallus sonneratii) (v) Painted partridge (Francolinus pictus)(vi) Gray partridges (Francolinus pondicerianus) (vii) Jungle bush quail (Perdica asiatica) (viii) Black breasted or rain quail (Coturnix coromandelica) (ix) Common bustard quail (Turnix suscitator) (x) Indian or yellow legged button quail (Turnix sorsakeri) (xi) Red spur fowl (Balloperdix spadicea) (xii) Sarus crane (Grus antigone) etc.

9.1 SECTION 2 : THE LEGAL HISTORY OF THE WILDLIFE

9.1.1 In Year 1878, Indian Forest Act was passed and it was made applicable to this area. The Section-2(b) (iii) included the wildlife in its definition of the forest produce. Under Section 25(i) of the said Act, any person in contravention of any rules, which the local Government may from time to time prescribe, kills or catches elephants, hunts, shoots, fishes, poisons, water or set traps or snakes shall be punishable for a term which may extend to six months or with fine not exceeding five hundred rupees or with both in addition to such compensation for damage done to the forests as the convicting court may direct to be paid.

9.1.2 Prior to re-organization of states, the wildlife conservation in this part was through the implementation of the provisions of Indian Forest Act, 1927, and the shooting rules framed under Section 26(i) and 76 (d), read with Wild Birds. By 1927, the shooting blocks system was started under this system, the Conservator of Forests in consultation with the Deputy Conservator of Forests use to declare certain blocks of reserve forests with abundant game as open for shooting. The Deputy Conservator of Forests used to issue permits for shooting.

9.1.3 The Bombay Wild Animals and Wild Birds Protection Act, 1951, for the protection of wildlife, was enacted. Though this act did not propose a significant change in the management of game in reserved and protected forests, it was important as it operated in areas outside reserve and protected forests also. Under the provisions of this Act, arms licence-holders for sports were to register themselves with the Wildlife Preservation Officer. This Act prescribed a closed season for hunting and classified game into a categories viz. small game, big game, special big game and pet animals. It also sought to control transaction in trophies and other wildlife products. The statutory Wildlife Advisory Board was constituted under this Act, to advise the Government on various important matters pertaining to wildlife.

9.1.4 The Indian Board of Wildlife was constituted in 1952 with the main object of devising ways and means for conservation of wildlife, through coordinated legislative and practical measures and sponsoring the setting up of National Parks and Wildlife Sanctuaries. A comprehensive and unified National and State Park Act, 1971 was passed which provided for appointment of an Advisory Committee to advise in its

constitution and declaration of National Parks and Sanctuaries and formulation of administrative policy. The Parliament then enacted Wildlife (Protection) Act, 1972, which came into force in the State of Maharashtra with effect from 1st June, 1973. From the commencement of this Act, the law in force in the State stood repealed. The subsequent rules made under the Act are as follows.

- (i) The Wildlife (Stock declaration) Rules, 1973 (became effective in Maharashtra with effect from 01-06-1973).
- (ii) The Wildlife (Transactions and Taxidermy) Rules, 1973 (became effective in Maharashtra with effect from 01-06-1973).
- (iii) Wildlife (Protection) Rules, 1975. (Became effective from 06-03-1975).
- (iv) The Wildlife (Protection) Licencing (Additional Matters for Consideration) Rules, 1983 (became effective with effect from 13-04-1983).

9.1.5 The Wildlife (Protection) Act, 1972 is a piece of comprehensive legislation, which provides for effective protection and preservation of wildlife, restriction on hunting and regulation of trade in wildlife animal articles made out of wild animals.

9.1.6 Hunting of wild animals is strictly prohibited under this act unless it is specially permitted. Wild animals have been categorized in five schedules and animals included in schedule-I and part-II of schedule-II receive the privilege of strict protection. Animals specified in these schedules are permitted to be hunted with special permission, if (1) It has become dangerous to human life or property; (2) It has become so disabled or diseased as beyond recovery.

9.1.7 Animals specified in Schedule-II (Part-I), III and IV are prohibited from hunting except if it has become dangerous to human life or property or had become diseased or disabled beyond recovery. Only vermins, included in Schedule-V had been excluded from strict protection.

9.1.8 Hunting of young and female of any animal other than vermin and that of any deer with antlers in velvet is strictly prohibited unless specially permitted (Section-15). The Act specifically requires declaration to be furnished by the individuals as well as trophies etc. in their control, custody or possession.

- 9.1.9** The Government of India vide letter dated 18-09-1975 envisaged that the control over tanks and rivers in National Parks and Sanctuaries should be vested with management authorities and not with fisheries or Irrigation Department.
- 9.1.10** The Government of India vide letter No. E-11011/3/75 FRY (WLF) had clarified that the certificate of legal procurement to be issued by the Chief Wildlife Warden is not necessary where an animal is not included in any schedule of the Wildlife (Protection) Act, 1972. Its export will be regulated by Ministry of Commerce.
- 9.1.11** Subsequently the delegation of power and duties of Chief Wildlife Warden to Police Sub-Inspector for the purpose of Section 4(i) and Section 55 of the Wildlife (Protection) Act, 1972, was granted by Government Resolution No. WLP-1973/197578-FI dated 5th April, 1976.
- 9.1.12** The schedules are revised by the Government on and off as it was required under Section 61 of Wildlife (Protection) Act, 1972. The Government of Maharashtra, under Section 64 of Wildlife Protection Act, 1972, framed the rule vide letter No. WLP-1679/95507/F-5. These rules further amended Wildlife (Protection), Maharashtra Rule 1975.
- 9.1.13** The Wildlife Protection Act was again amended to be called as Wildlife (Protection) Amendment Act, 1986 and it came into force from 25th Nov., 1986.
- 9.1.14** Under Section 44 of Wildlife (Protection) Act, 1972, the Government of India vide letter No.WLP/1682/100208/CR-43/(i)/F-5 permitted the trapping of cobra and Russells vipers by a licensed dealer, for the purpose of extracting venom. Under the power conferred under sub-section (i) and sub-section (2) of the Section 64, the Government of India vide letter No.WLP-1682/10020 (iii)/F-5 framed new rules called Wildlife (Frog Leg Industry) Rule 1987, and it came into force from 25th Nov., 1987. The Government of India vide letter No. F-No.1-2/91/WL-I, dated 21 October, 1991 further amended the Wildlife (Protection) Act, 1972. The following are the important amendments.
- (a) The plants have also been included in the purview of this Act.
 - (b) The zoo and circus have been defined, and are included under this Act.
 - (c) The “game reserves” have been dropped.

- (d) Section 9 of Wildlife (Protection) Act, 1972 has been amended and there is a total prohibition of hunting of animals specified in schedule I, II, III & IV except as provided under Section 11 and 12.

9.1.15 The salient feature of Wild Life Act 1972, as amended, is below:-

The salient features of the Act, which envisages to provide protection to the wild animal of Schedule I, II, III & IV are as below:-

- Section- : The section provides for the appointment of Director.
- Section-4: The section deals with the appointment of Chief Wildlife Warden, Wildlife Warden and Honorary Wildlife Warden.
- Section-9: The section provides for a ban on hunting of any wild animal, mentioned in Schedule-I, II, III & IV.
- Section-11: The section gives the power to Chief Wildlife Warden to order destruction of any animals (other than schedule-I), if it has become dangerous to human existence. Killing in self defence is not offence.
- Section-12: The Chief Wildlife Warden is empowered to grant permission to hunt for specific purposes like (i) education (ii) scientific management (iii) scientific research (iii) collection of specimen etc.
- Section-17A: The section provides for protection to specific plant.
- Section-18: The section empowers the State Government to declare the sanctuary.
- Section-35: The section provides for declaration of National Parks.
- Section-36A: It empowers the State Government to declare conservation reserve. This is an additional provision.
- Section-36 C: The section provides for declaration of community reserve.
- Section-38 A: It states about the constitution of Central Zoo Authority.
- Section-51: It provides a penalty of imprisonment upto three years and fine upto Rs. Twentyfive Thousand rupees or both for breach of any conditions of any license or permit granted under this Act.

It further provides a minimum punishment of three years which may extend upto seven years and a fine which shall not be less than ten thousand, if the offence is related to animals of Schedule-I or Part-II of the Schedule-II or meat of these animals or offence is related to hunting in sanctuary or National Park, or it is related to shifting of boundaries of sanctuary or National Park.

Act further provides a penalty for second or subsequent offence, which may be minimum for three years and may extent to seven years and fine not less than Rs.25,000/-. The Act further provides for offence is in relation to core area of a tiger reserve or a hunting in a Tiger Reserve or altering the boundaries of the Tiger Reserve, such offence shall be punishable on first conviction with imprisonment of a term, which may not be less than three years, but may extend to seven years, and a fine not less than Rs. Fifty Thousand and may extend to Rs.2.00 lakh and in even of subsequent conviction, an imprisonment of not less than seven years and fine which shall not be less than five lakhs, and may extend to fifty lakhs.

It further states that an abettor shall also get a similar punishment.

Section further provides that court may direct that arm license issued under Arms Act, 1959 of any person convicted of any offence under this Act, shall be cancelled and that person will not be eligible to hold license for period of five years from the date of conviction.

Section-52 :- It makes the abetment as an offence

9.3 SECTION-3: RIGHTS AND CONCESSIONS

9.3.1 No rights or privileges have been granted to any person over wildlife as there is no such legal provision in the Act.

9.3.2 Section 9 of Wildlife Act 1991 put a restriction on hunting of all wild animals specified in schedule I, II, III & IV except as provided under section 11 and section 12. The section 11 deals with the elimination of wild animals dangerous to human life and section 13 empowers Chief Wildlife Warden to permit license for shooting for the purpose of collecting specimen needed for-

- (a) Educational
- (b) Scientific Research
- (c) Zoological Gardens and Museum.

9.5 SECTION-4 : INJURIES TO WILDLIFE

Fire and poachers are mainly responsible for the destruction of wildlife in this region.

9.5.1 Fires:- Forest fires are of frequent occurrence, particularly, in remote areas which are the ideal abode for wildlife. These fires, besides destroying the natural habitat of the forest fauna drive them to take shelter near the human habitation and making them easy targets for poachers. Khandesh region is known for water scarcity particularly in summer. These fires aggravate the already existing water scarcity and compel them to migrate to the easy localities for food and water exposing these animals to above mentioned risks.

9.5.2 Poaching:- Poaching is an important reason for the depletion of wildlife in the area. With forest almost getting depleted, these are an easy target of poaching. The natural habitat has depleted to a large extent.

9.5.3 Water Supply:- It is a great limiting factor on the survival of the wildlife.

9.5.4 Grazing: - The grazing by the domestic cattle has enhanced the competition for fodder and water.

9.6 SECTION-5: MEASURES WILDLIFE ADOPTED FOR PROTECTING:-

9.6.1 The newly amended Wildlife Act, 1991 will go a long way in protecting the wildlife. The amended section 9 of the said Act puts a total ban on hunting of wild animals specified in schedule I, II, III & IV.

9.6.2 The procedure for declaration of sanctuary has been simplified. No further enquiry is required after declaring a sanctuary of the area in question if it is a reserved forest.

9.6.3 The section 29 states that “No person shall destroy, exploit or remove any wildlife from a sanctuary or destroy or damage the habitat of any wildlife animal or deprive any wild animal of its habitat within such sanctuary except under and in accordance with a permit granted by the Chief Wildlife Warden and no such permit shall be granted unless the State Government being satisfied that such destruction, exploitation or removal of wildlife from the sanctuary is necessary for the improvement and better management of wildlife therein, authorizes the issue of such permit.”

- 9.6.4** Provisions have been made to immunize the cattle, grazing in the sanctuary, against the communicable diseases.
- 9.6.5** The Act stipulates that no new arms license under this Act will be issued within 10 km. radius of the sanctuary, without the prior approval of Chief Wildlife Warden.
- 9.6.6** In 1972, with a view to check illicit shooting of wild game, the State Government sanctioned the grant of rewards to the informed or informer in respect of unlicensed shooting, provided that the information is found to be valid and leads to the conviction of the offender. In addition, the State Government has decided to grant reward, equal to 50 percent of the compensation actually recovered from the offender for illicit shooting, to the Gram Panchayat or its office bearer or individuals who have rendered cooperation in detecting of such illicit hunting in the State.
- 9.6.7** Trade in wildlife or mere possession of captive animals, animal articles trophies or salted skins derived from animals specified in schedule I and Part II of schedule II is strictly prohibited without permission in writing from the competent authority.
- 9.6.8** The transport of any specified animals, animal article, trophy or uncured trophy from one place to another is strictly prohibited without permission in writing from the competent authority.
- 9.6.9** The quantum of punishment has been enhanced substantially. The terms of punishment has been advanced to three years and fine upto Rs.25,000/-. The Act provides for a minimum limit of the punishment of fine or both.
- 9.6.10** In order to avoid a man animal conflict, the Government of Maharashtra has taken measures to compensate for the loss incurred by the individual. These measures are listed below:-

9.6.11 G.R.No. WLP-9094/115 /F-1 dated 23-08-2004

Preamble:- After the strict implementation of Indian Wildlife Act, 1972, there has been a proliferation in the population of wild animals and especially of herbivores. Carnivores did not proliferate to commensurate with the increase of herbivores population, with the result there has been a large scale destruction of agricultural crop

by these wild animals causing a widespread resentment. The Government of Maharashtra vide its resolution listed above, had taken a decision to grant a compensation upto Rs.2000/ha, subjected to maximum of Rs.5000/- per family, subject to following restriction.

- (a) The compensation shall be confined to the destruction of the crop done by wild bear, deer, elephant and the following procedure should be followed for preparing the case :-
- (i) The agriculturist should lodge the complaint within three days with beat guar, round officer or with a Range Forest Officer.
 - (ii) The loss shall be confirmed by the Committee constituted of forester, sarpanchs and gramsevak/talathi within days of the reporting. The Committee after visiting site shall assess loss.
 - (iii) Dy. Conservator of Forest concern shall pass the order within 90 days.
 - (iv) Dy. Conservator of Forest shall hand over the sanctioned amount within one month of the passing of the order.
- (b) The following categories of people shall not be entitled to compensation.
- (i) The persons who have done encroachment on forest land.
 - (ii) The persons who have been booked for any offence related to wildlife under Wildlife Act, 1972.
 - (iii) The agriculturists who have more cattle and these cattle go for grazing on the forest land.
 - (iv) The agriculturist who have been provided license to keep guns for protection of crop.
 - (v) Poaching incidence to be reported within one month of the incidence in the village.

**9.6.12 G.R. No.WLP-1008/Cor. No.270/F-1, Revenue and Forest Department,
dated 2nd July, 2010-**

The Government of Maharashtra vide above resolution made a partial modification in their original order dated 23rd Aug., 2004. By this order, the quantum of compensation was enhanced and scope of compensation in addition to crop destruction, was also enhanced to fruit trees, to human being and to cattles. Similarly the list of animals causing destruction was also enlarged to include Nilgai

and monkeys. The loss was to be calculated as a whole and not per hectare. It provided for a minimum compensation as Rs.500 and maximum upto Rs.15,000/-. Similarly for sugarcane, it was to be calculated at a rate of Rs. 400/- tonne. Loss to fruit garden by elephant and bison was to also be assessed as below:-

- (i) Coconut - Rs. 2000/tree
- (ii) Beatle nut - Rs. 1200/tree
- (iii) Grafted Mango - Rs. 1600/tree
- (iv) Banana - Rs. 48/tree
- (v) Other Fruit Trees - Rs. 200/tree

Loss to sugarcane field was to be calculated on the basis of eight years of statistical data of that taluka.

The Government Resolution also included to compensate the loss to human lives or injuries to the, but restricted the loss caused to animals, tiger, panther, bear, bison, wild board, landga, hyena, jackal, elephant, crocodile and wild dogs. The following compensation was envisaged.

Sr. No.	Nature of Injury	Compensation
(i)	Loss to human life or injury causing causing Permanent disability	Rs.200,000/-
(ii)	Serious injury	Rs. 50,000/-
(iii)	Casual injury	Rs.7500/- per person in private dispensary(treatment as far as possible should be done in Govt. hospital

The G.R. also defined certain restriction while implementing the G.R. site reporting with 48 hour, the killing was not due to violation of any provision of Wildlife Act, 1972 etc. The Government Resolution also encompassed the loss to domestic animals like cow, buffalow, sheep, goat and other animals enlisted in Section-2 (18-A) of Wildlife Act, 1972. The Government order provided as below:-

Sr.No.	Type of Animals	Compensation to be paid
(i)	On the death of cow, buffalo and bull	75% of the market value or Rs.10000/-whichever is less.
(ii)	Sheep, goat and other animals	75% of the market value or Rs.3000/- whichever is less.
(iii)	Permanent disability to cow, buffalow or bull	50% of the market value or Rs.2000/- whichever is less

The compensation was to be paid subjected to certain condition enlisted in G.R. like reporting within 48 hours no. removal of carcass from the site of killing, no wild animal is killed within a day of killing within a radius of 10 kilomeer.

The Government Resolution also envisaged upon the loss to coconut trees due to vultures, where they nest or rest on it. Whereby the crop is destroyed due to excreta, the G.R. provided

- (i) To calculate loss of coconut at a rate of Rs. 7/- per piece.
- (ii) The loss to be limited to Rs. 400/tree

This G.R. is quoted for sake of record; as no such incidences are likely to happen in present Dhule Forest Division.

9.6.13 G.R. No. WLP-2012/Cor. No.337/F1, dated 30th March, 2013,

The Government of Maharashtra vide its resolution No. WLP-2012/Cor. No.337/F1, dated 30th March, 2013, further revised the compensation to human being as follow:-

Sr. No.	Type of Injury	Quantum of compensation
(i)	On death	Rs,500,000/- only.
(ii)	On permanent disability	Rs.400,000/- only.
(iii)	On serious injury	Rs. 100,000/- only

9.6.14 G.R. No.WLP-2012/Cor. No.337/F-1, dated 28th May, 2013

The relevant certificate from Civil Hospital is required vide Government of Maharashtra's resolution No.WLP-2012/Cor. No.337/F-1, dated 28th May, 2013. The Government of Maharashtra vide its above mentioned resolution, further simplified the procedure for giving compensation to the family members in case of death caused due to the attack of tiger, leopard, bear, bison, wildboard, landga, hyena and wild dogs. Under the new guidelines the compensation to the following people, will not require a legal heir certificate. In case of death of an old man his living wife and uneducated offspring will get the equal share and likewise similarly in case of a old woman, adolescent of age between 0-18. The resolution also provides for paying one lakh rupees as interim relief, out of five lakh compensation due: In events of death, Range Forest Officer shall obtain the legal heir certificate from Revenue Officer and shall obtain a bond paper duly signed from his legal heirs. In case of interior areas, naib tahsildar shall obtain the relevant bond papers, duly signed from the legal heirs. In even of human death, the incidence should immediately be reported to Sub-Divisional Officer/Naib Tahsildar by the Range Forest Officer within two days, failing which a disciplinary action shall be initiated.

9.6.15 Besides the above mentioned legal provisions for protection of wildlife, public opinion for preservation of wildlife is being created through the wildlife week which is celebrated every year since 1951.

PART-II
FUTURE MANAGEMENT DISCUSSED AND PRESCRIBED
CHAPTER-I
BASIS OF PROPOSALS

SECTION 1: NATIONAL FOREST POLICY.

As per the resolution No.3 .1 / 86-FP dated 7th December 1988 of the Ministry of Environment and Forests, the National Forest Policy, 1988 has come into force, prescribing a new strategy for forest conservation. The basic objectives governing the new policy are given below:

SECTION-2: BASIC OBJECTIVE OF THE NATIONAL FOREST POLICY-1988.

1. Maintenance of environmental stability through conservation and, where ever necessary, restoration of the ecological balance that has been adversely disturbed by serious depletion of the forest of the country.
2. Conserving the natural heritage of the country by conserving the remaining natural forests with the vast variety of flora and fauna, which represents the remarkable biological diversity and genetic resources of the country?
3. Checking soil erosion and denudation in the catchment areas of rivers, lakes, reservoirs in the interest of soil and water conservation, for mitigating floods and drought and for the retardation of siltation of reservoirs.
4. Checking the extension of sand-dunes in the desert areas of Rajasthan and along the coastal tracks.
5. Increasing substantially the forest/tree cover in the country through massive afforestation and social forestry programme, especially on all denuded, degraded and unproductive lands.
6. Meeting the requirements of fuelwood, fodder, minor forest produce and small timber of the rural and tribal population.
7. Increasing the productivity of forests to meet essential national needs.
8. Encouraging efficient utilization of forest produce and maximizing substitution of wood.

9. Creating a massive people's movement with the involvement of women, for achieving these objectives and to minimize pressure on existing forests. The derivation of direct economic benefit must be subordinated to environmental stability and maintenance of ecological balance.

SECTION 3: GENERAL OBJECTS OF MANAGEMENT.

The salient features and the strategy as regards management of State Forests are as under--

1. The national goal should be to have a minimum of one third of the total and area under forest or tree cover.
2. Severe restrictions on schemes and projects which interfere with forests that clothe steep slopes, catchment of rivers, lakes and reservoirs.
3. No working of forests without the Government having approved the Management plan.
4. No programme should entail clear-felling of adequately stocked natural forests. Exotic plant species should not be introduced unless long-term scientific trials are taken.
5. The rights and concessions, including grazing, should always remain related to carrying capacity and should be achieved by increased investment and silvicultural research. Stall feeding of cattle should be encouraged.
6. The rights and concessions from forests should primarily be for the bonafide use of the communities living within and around forest areas, specially the tribals.
7. The right and concessions enjoyed by tribals and people living around forests should be fully protected. Their domestic requirement of fuelwood, fodder, and minor forest produce and construction timber should be the first charge on forest produce.
8. On the front of domestic energy, fuelwood needs to be substituted as far as practicable with alternate sources like bio-gas, L.P.G. and solar energy. "Fuel efficient Chulhas" as a measure of conservation of fuelwood needs to be popularised in rural areas.

9. Diversion of forest lands for non-forest purpose should be subjected to careful scrutiny. Projects, which involve such diversion, should provide funds for compensatory afforestation.
10. Forest management plans to take special care of the needs of wildlife conservation.
11. The tendency of doing encroachments should be checked and there should be no regularization of existing encroachment.
12. Forest based industries should raise the raw material needed by themselves in arrangement with the private cultivators.
13. People should be made forest conscious through extension activities.
14. Survey of forest resources to be completed on scientific line for updating information.

Result of Sample Tree Enumeration of Dhule Forest Division

Forest Area: - According to Management & Legal Status, the following are the total Forest area of Dhule Forest Division is as under.

Table No-1

**Classification of Forest area according to Management & Legal status
(Area in Sq. km.)**

Sr.	Controlling Agency	Reserved forest	Protected forest	Un-classed forest	Total
1.	Area in charge of Forest Deptt.	1877.652	8.500	31.416	1917.568
2.	Area in charge of F.D.C.M.	----	----	----	----
3.	Private Forest brought under possession of Forest Deptt.	----	----	----	----
4.	Area in charge of Rev.Deptt.	63.58	---	----	63.58
	Total	1941.63	8.500	31.416	1981.148
	% to total forest area				

The newly formed Dhule Forest Division consist of eight ranges namely 1) Borade 2) Dhule 3) Kondaibarai 4) Pimpelner 5) Sakri 6) Sangvi 7) Shindkheda 8) Shirpur. As already mentioned, Working Plans were written by Shri S.H.Patil, and Working by Shri R.L.Choudhary Dy. Conservator of Forests Working Plan Division.

The forests are situated between 21°-04'-03" north latitude and 74°-49'-04" east longitude. The boundaries of the division are as follows:

- North - The boundaries of Nandurbar district of Maharashtra & Badavani district of Madhya Pradesh.
- South - Revenue lands of Nashik district & Jalgoan district.
- West - Revenue lands of Nashik district & Gujrat state.
- East - Revenue lands of Jalgoan district.

The area covered under this plan includes Boradi, Sangavi, & Shirpur ranges of the then North Dhule Forest Division & Dhule, Sakri, Shindkheda, Pimpalner & Kondaibari ranges of the then West Dhule Division. The total forest area of above 8 Ranges of Dhule Forest Division is as given in table no.2 and area covered under enumeration (Working Circle-wise) is given in Table 3 below:-

Table No.2

Sr. No.	Area of Dhule Division	Total area in (Ha.)
1.	Total Eight Ranges	191756.850

Table No.3

5.0 Working Circle wise Area proposed for tree enumeration

Sr. No.	Name of working circle	Population area in ha
1.	Afforestation Working Circle	555000.864
2.	Coppice with Reserve Working Circle	73352.155
3.	Improvement Working Circle	10114.781
4.	Improvement & Protection Working Circle	1639.732
5.	Kuran Working Circle	6309.541
6.	Protection Working Circle	3002.565
7.	Selection Working Circle	1302.566
8.	Selection & Protection Working Circle	364.622
9.	SPWC	11094.147
	Total	162680.973

6.0 Sampling plan of Tree Enumeration

Actually the tree enumeration work was done by Dy. Conservator of Forests, Dhule Division in 2011-12. The entire forest division's area was considered for sampling enumeration plan. The trees are enumerated in girth classes started from 15-30 cms to Above 150 cms. The girth is measured at breast height (g.b.h.)

The statistical sampling method namely “Systematic Line Plot Sampling with Random Start” was used for tree enumeration. The plot size 30 meters × 30 meters, was found to be suitable with the standard error. The complete enumeration of trees, seeding, coppices, Grass & Medicinal species were carried out in these plots. Similarly qualitative measurements were also carried out.

Scrutiny of data and preparation of results i.e. (1) Stock per hectare was calculated and the result are being reported in the form of following statements.

Statement-I: Estimated growing stock-No. of Sound trees.

Statement-II: Estimated growing stock-No. of Sound trees per ha.

Statement-III: Percentage distribution of total stock of species over all girth classes.

Statement-IV: Percentage of stock of species in a girth class to the total stock growing in that particular girth class.

Statement-V: Estimated growing stock–volume in cubic mtr. /ha some noteworthy result on current enumeration is described in following table.

Table No.4 (a)

Statement showing estimated No. of trees per ha. For Past & Current tree Enumeration (2011-12)

Sr. No.	Name of Working Circle	Past enumeration	Sr. No.	Name of Working Circle	Current enumeration No. of trees per ha.
	Newly formed Division& This is 1 st Enumeration		1	Afforestation W.C.	80.208
			2	Coppice with Reserve W.C.	46.920
			3	Improvement W.C.	115.214
			4	Improvement & Protection W.C.	134.758
			5	Kuran W.C.	78.429
			6	Protection W.C.	117.861
			7	Selection Cum Improvement W.C.	264.241
			8	Selection Cum Improvement & Protection W.C	318.870
			9	Selection & Protection W.C.	53.475
Weighted Average			Weighted Average		68.736

It is observed that the total estimated number of trees per hectare in current enumeration (2011-12) is 68.736.

Table 4 (b)
Estimated percentage of trees in 15 U 30 & 30 U 45 girth class, & remaining girth class

Working Circle	Girth class – wise estimated percentage of number of trees (%)			
	15 U 30	30 U 45	Remaining Girth Classes	Total estimated No. of trees
Afforestation W.C.	72.839	16.936	10.225	100
Coppice with Reserve W.C.	44.849	36.436	19.564	100
Improvement W.C.	25.272	28.766	45.962	100
Improvement & Protection W.C.	14.164	79.704	6.132	100
Kuran W.C.	82.88	9.318	7.802	100
Protection W.C.	32.694	22.314	44.992	100
Selection Cum Improvement W.C.	13.41	25.683	60.907	100
Selection Cum Improvement & Protection Working Circle	2.787	17.073	80.14	100
Selection & Protection W.C.	90.203	70712	2.085	100
Weighted Average	56.868	26.342	16.790	100

7.0 As per enumeration Working circlewise estimated, number of sound tree per hectore are as follows.

Table No.5
No.of sound trees per ha

Sr.No.	Name of Working Circle	Total	General utility species	Special utility Species	Minor forest produce species	Other species
1	Afforestation W.C.	80.208	4.242	14.771	13.270	47.925
	% of stock to total stock	100	5.29	18.42	16.55	59.74
2	C.W.R.W.C.	46.920	7.966	6.513	21.208	11.233
	% of stock to total stock	100	16.98	13.88	45.20	23.94
3	Improvement W.C.	115.214	60.702	16.308	19.513	18.691
	% of stock to total stock	100	52.69	14.15	16.94	16.22
4	Improvement & Protection W.C	134.76	99.430	6.268	15.100	13.960
	% of stock to total stock	100	73.78	4.650	11.21	10.36

Sr.No.	Name of Working Circle	Total	General utility species	Special utility Species	Minor forest produce species	Other species
5	Kuran W.C.	78.43	0.238	17.111	20.084	40.996
	% of stock to total stock	100	0.30	21.82	25.61	52.27
6	Protection w.c.	117.86	57.806	11.531	11.251	37.273
	% of stock to total stock	100	49.05	9.78	9.55	31.62
7	Section W.C.	264.241	162.46	30.026	19.211	52.544
	% of stock to total stock	100	61.48	11.36	7.27	19.89
8	SCI & Proct. WC	318.87	259.989	26.663	0	32.218
	% of stock to total stock	100	81.53	8.36	0	10.10
9	Selection & Prot W.C	53.475	0	9.104	7.656	36.715
	% of stock to total stock	100	0	17.03	14.32	68.66
	Total weighted average	62.259	10.892	9.930	16.442	24.996
	% of stock to total stock	100	17.49	15.95	26.41	40.15

Highlights from the result of tree enumeration as given in time No.5 are summarized below.

8.0 GENERATION OBSERVATION IN ENUMERATION

1. Afforestation Working Circle:-

It is observed that Ain, Bondara, Teak, Bija, Shisam, Tiwas And Kakad of General utility was found in this area which is 5.29 % to the total growing stock. The species of special utility viz, anjan, dhawda, khair, hiwar, kudi, salai, sawar and shiwan are 18.42% to the growing stock. The species of minor forest produce viz, bor, bel, aola, moha, palas, karwad, neem, tendu, behada, chinch, shiras, apta, kawath, ritha, and jambhul are 16.55 % to the total growing stock and rest of the species are 59.74% to the total growing stock.

2. Coppice with Reserve Working Circle:-

It is observed that Ain, Bondara, Kakad, Teak and Tiwas of general utility was found in this area which is 16.98% to the growing stock. The species of special viz viz, bor, bel, aola, moha, palas, karwad, neem, tendu, behada, chinch, shiras, apta, Sitafal and tendu are 45.20% to the growing stock and rest of the species are 23.94% to the total growing stock.

3. Improvement Working Circle.-

It is observed that Ain, Bija, Bondara, Kakad, Shisam, Teak And Tiwas of General utility was found in this area which is 52.29% to the growing stock. The species of special utility viz, Arjun, Dhawada, Haldu, Hiwar, Kalamba, Khair, Salai, Sawar, Semal and Shiwan are 14.15% to the total growing stock. The species of minor forest produce viz, Aola, Apta, Behada, Bor, Karwad, Moha, Neem, Nilgiri, Palas, Siaras and tendu are 16.94% to the total growing stock and rest of the species are 16.22% to the total growing stock.

4. Improvement & Protection Working Circle:-

It is observed that the species Ain, Bondara, Teak & Tiwas of General utility was found in this area which is 73.78% to the growing stock. The species of species utility viz, Dhawada, khair, SHiwan are 4.65% to the total growing stock. The species of minor forest produce viz, Behada, Moha, Neem & palas are 11.21% the total growing stock and rest of the species are 10.36% to the total growing stock.

5. Kuran Working Circle:-

It is observed that specie of General utility viz, Teak was found in this area which is 0.30% to the total growing stock and Species of Special utility viz, Anjan, Dhawada, Hiwar, and Khair are found in this area which is 21.82% to the total growing stock. The species of minor forest produce viz, Bor, Chich Neem & palas are found which is 25.61% the total growing stock and rest of the species are 52.27% to the total growing stock.

6. Protection Working Circle:-

It is observed that species of General Utility viz. Ain, bondara, Shisam, Teak & Tiwas was found in this area which are 49.05% to the total growing stock and Species of Special utility viz, Dhawada, Khair, Salai, and Shivan, are Found in this area which is 9.78% to the total growing stock. The species of minor forest produce viz, Awala, Behada, Bor, Moha, Neem and palas was found which are 9.55% to the total growing stock and rest of the species are 31.62% to the total growing stock.

7. Selection cum Improvement Working Circle:-

It is observed that species of General utility, viz. Ain, Bondara, Shisam, Teak & Tiwas was found in this area which is 61.48% to the growing stock. Species of species utility viz. Dhawada, Khair, Salai are found this area which is 11.36% to the total growing stock. The species of minor forest produce viz. Apta, Boba, Moha, Palas, and Tendu was found which is 7.27% to the total growing stock and rest of the species are 19.89% to the total growing stock.

8. Selection cum Improvement & Protection Working Circle:-

It is observed that species of General utility viz. Ain, Bondara, Shisam and Teak are found which is 81.54% to the total growing stock. The species of special utility are found viz. Dhawada & Khair which are 8.36% to the total growing stock. No species of minor forest produce are found in this working circle. Rest of the species are 10.10% to the total growing stock.

9. Selection and Protection Working Circle:-

It is observed that no species of General utility are found in this working Circle. The species viz. Anjan, Hiwar and Khair was found as oa species of Special utility which is 17.03% to the total growing stock in this working circle. The species of minor forest produce viz. Awala, Apra, Bel, Bor, Neem and Palas are found which is 14.32% to the total growing stock in this working circle and rest of the species are 68.66% to the total growing stock.

Table No.6
Availability of Teak in previos Enumeration (Enumeration period)
As per previous Working plan.

Sr.No.	Name Working Circle	Total growing	Teak/Ha	% of stock of tree to the total stock
1	No previous Enumeration			
	Weighted Average			

Table No.6
Availability of Teak (Enumeration period of 2011-12 Current.
Enumeration

Sr.No.	Name Working Circle	Total growing	Teak/Ha	% of stock of tree to the total stock
1	Afforestation W.C.	80.208	1.919	2.393
2	CWR W.C.	46.920	7.558	16.108
3	Improvement W.C	115.214	26.744	25.816
4	Improvement & Protection W.C.	134.758	49.003	36.364
5	Kuran Working Circle	78.429	0.238	0.303
6	Protection W.C.	117.861	24.050	20.405
7	Selection W.C.	264.241	75.074	28.411
8	Selection Cum IMP.& Protection W.C.	318.780	88.887	27.883
9	Selection.& Protection W.C.	53.475	0	0
Total (Weighted0		68.736	7.659	11.143

Estimated growing stock of Medicinal plant, Naturel regeneration and grass per Ha.

Table No.7

A) Medicinal plant per ha (sample plot size 5 Mtr X 5 Mtr)

Sr.No	Working Circle	Population area Ha.	No. of sample plots	Sampal area Ha	No Medicinal Plant in sample area	No of Medicinal Plants per Ha (col 6/Col 5)
1	A.W.C.	55500.864	1407	3.51	3755	1070
2	C.W.C	73352.155	1767	4.418	372	84
3	I.W.C.	10114.781.781	229	0.573	59	103
4	I.W.C.& P.W.C.	1639.732	39	0.098	0	0
5	K.W.C.	6309.541	187	0.468	506	1081
6	P.W.C.	3002.565	79	0.20	344	1720
7	S.W.C.	1302.566	37	0.092	34	369
8	S.W.C.&P.W.C.	364.622	10	0.025	7	280
9	S.P.W.C.	11094.147	299	0.75	237	316
		162680.973	4054	10.134	5314	524

B) Natural Regeneration plant per ha (sample plot size 5 Mtr X 5 Mtr)

Sr.No	Working Circle	Population area Ha.	No. of sample plots	Sampal area Ha	No N.R Plant in sample area	No of Medicinal Plants per Ha (col 6/Col 5)
1	A.W.C.	55500.864	1407	3.51	7560	2153
2	C.W.C	73352.155	1767	4.418	3830	867
3	I.W.C.	10114.781.781	229	0.573	272	475
4	I.W.C.& P.W.C.	1639.732	39	0.098	0	0
5	K.W.C.	6309.541	187	0.468	349	746
6	P.W.C.	3002.565	79	0.20	184	920
7	S.W.C.	1302.566	37	0.092	123	1337
8	S.W.C.&P.W.C.	364.622	10	0.025	25	1000
9	S.P.W.C.	11094.147	299	0.75	715	953
		162680.973	4054	10.134	13058	1288

C) Grass Specise per ha (sample plot size 1 Mtr X 1 Mtr

Sr.No	Working Circle	Population area Ha.	No. of sample plots	Sampal area Ha	No N.R Plant in sample area	No of Medicinal Plants per Ha (col 6/Col 5)
1	A.W.C.	55500.864	1407	0.141	16943	120163
2	C.W.C	73352.155	1767	0.177	15628	88299
3	I.W.C.	10114.781.781	229	0.023	6380	277391
4	I.W.C.& P.W.C.	1639.732	39	0.004	350	87500
5	K.W.C.	6309.541	187	0.019	1020	53684
6	P.W.C.	3002.565	79	0.008	2992	374000
7	S.W.C.	1302.566	37	0.004	2510	24134
8	S.W.C.&P.W.C.	364.622	10	0.001	575	575000
9	S.P.W.C.	11094.147	299	0.030	3396	113200
		162680.973	4054	0.407	49794	122343

SECTION 4: ANALYSES AND EVALATION OF CROP.

Statistical Analysis:-

The Statistical personnel of the office of the Chief Forest Statistician Maharashtra State, Nagpur, have carried out the statical analysis of the data. The calculated estimated lead to certain error and percentage of Standard error is around 5% for Afforestation Coppice with Reserve, Improvement and Kuran Working circle in the statistical analencis. The standard error bound to be high which itself that standared error will not be a reliable measure for accurate stastical analysis for IWC & PWC, Protection, Selection Cum Improvement,SCI & PWC,and SP and S.P. Working Circle The percentage standered error is calculated for each working ciercele is given in the following table No.08.

Table No.8

C) Old Working Circlewise per Specise per ha (sample plot size 1 Mtr X 1 Mtr

Sr.No	Working Circle	Population area Ha.	Sample area in ha	Intensity of sampling %	% Standard Error
1	A.W.C.	55500.864	126.63	0.227	2.77
2	C.W.C	73352.155	159.03	0.217	3.8
3	I.W.C.	10114.781.781	20.610	0.204	5.17
4	I.W.C.& P.W.C.	1639.732	3.51	0.214	6.26
5	K.W.C.	6309.541	16.83	0.267	4.19
6	P.W.C.	3002.565	7.11	0.237	12.98
7	S.W.C.	1302.566	3.33	0.256	6.6
8	S.W.C.&P.W.C.	364.622	09	0.247	6.98
9	S.P.W.C.	11094.147	26.91	0.243	7.87
		162680.973	364.86		

SECTION-5: FUNCTIONAL CLASSIFICATION OF FORESTS.

The State Government, vide Revenue and Forest Dept. Resolution No. MFP-1365/132211-Y dated 6.12.1968 has recognized the following classes of forests on functional basis:

- a] Protection Forests.
- b] Tree Forests.
- c] Minor Forests.
- d] Pasture lands.
- e] Miscellaneous Forests.

1. PROTECTION FORESTS

These forests are confined to the precipitous slopes along the ridges of the spurs of sahyadris. The Object of this forest is to prevent soil erosion. As such no felling are prescribed. However gap filling with seedlings of Bamboo, Jatropha, kudi And dibbling of Anjan,Neem, Holoptelea seeds will be taken up where enough soil to bear the tree growth is available, grasses will be raised to bind the soil erosion, and to improve the water regime of the locality.

2. TREE FORESTS

These forests are situated in remote tracts, capable of yielding timber, restricted to fewer patches in the hil block. AS the natural regeneration is totally absent, and as the recruitment to the higher girth classes being inadequate, it was felt to preserve these forests, while removing silviculturally available trees, simultaneously improvement works such as gap filling and tending in the immature crop will be carried out si as to manage thse area as irregular forests.

3. MINOR FORESTS

These are the forests capable of yielding small timber and fuelwood,covers part of hill block and Umarpata black. Most of the are are either undrstocked or open. So the main object is to recloth the area with vegetal cover and to prevent soil erosion. The teak coppices will be given adequate treatments. While afforesting the area Teak will be planted along with other species. The method of treatment will be artificial regeneration couped with the improvement of coppice growth. which are the indispensable needs of the adjoining agricultural population. This category of forests is spread all over the Dhule Division.

4. PASTURE LANDS

The Eastern part of the entire tract comes under this category. These are all open areas with sparse tree growth of stunted and malfformed nature. Since the soil depth being little most of these areas are not fit for tree growth. Hence they are managed as pasture lands. However the grazing pressure is such that many of the areas have become barren, even without a single blade of grass. In the past, these area were managed under rotational grazing system, however which could not be implemented because of excessive pressure. So it was felt to improve the pasture by introduction of good grass varieties. The area will be closed and improved. These areas will be managed as silvipastures.

SECTION 6: GRAZING POLICY

1. The entire forests are liable to damage from grazing except the interior areas, which are away from the villages. In fact, there is hardly any grass left in this block and they only serve as exercise grounds for the cattle. These areas are very undulating and the soil is very poor and are, therefore, even unfit for cultivation. The 'A' class forests adjoining the *Berar* plains are very hilly, and the upper slopes are steep. The grazing is, therefore, confined to the lower hills and the calculated incidence does not give the true picture of the grazing pressure here, while a large inaccessible area of the units remains un-grazed. A realistic calculation of grazing incidence is required.
2. The grazing incidence figures are misleading as the erstwhile forest village cattle are grazed in the immediate vicinity of the villages. The true grazing incidence in the areas adjoining the villages is therefore, heavier than estimated.
3. The animals, mostly buffaloes from local villages, and some cattle from Kutch plains are grazed from cattle camps, locally known as *kathewadis* in the interior of forests in the hot season. During this hot weather grazing after the depletion of grasses, grazers start lopping green foliage, especially of *ain* (*Terminalia tomentosa*), *bhosa* (*Bauhinia racemosa*), *kusum* (*Schleichera oleosa*), *karkha* (*Bridelia retusa*), *Dhaman* (*Grewia tiliaefolia*), *kahu* (*Terminalia Arjuna*), *salai* (*Boswellia serrata*), *Ghatbor* (*Zyzyplus xylocarpa*) and *bamboo* (*Dendrocalamus stictus*). The lopping and hacking of trees has led to degeneration of the forests. The seedlings are grazed and saplings of these fodder tree species have been hacked to provide fodder to the cattle. Continuous and heavy grazing not only prevents regeneration of tree species but also the young regeneration obtained during the period of closure, is lost soon after the area is opened

for grazing. In areas with clayey soil, the trampling by cattle results in hardening of soil and reduction in the soil aeration. In sandy soils, heavy grazing results in accelerated erosion and denudation. The grazing on undulating lands loosens the soil, which results in the soil erosion. The problem of migrated cattle is severe Dhule division which needs utmost attention to control the grazing.

4. It is not uncommon to see goats grazing in timber forests. The goat grazing is prohibited because of their close level grazing in which the seedling or grass rhizome is uprooted.
5. The grazing shall be regulated as per guidelines of Grazing Policy 1968 of Maharashtra State issued vide Resolution No. MFP-1365/132211-Y dated December 6, 1968 and Grazing Rules issued vide no. MFP-1371/237035-Z dated November 3, 1973.
6. Heavy cattle pressure adversely affects the forest regeneration and soil condition. The statutory provisions regulated grazing is difficult to apply in the entirety. The present political economy of domestic animals in the area throws up strong challenge, and implementation of the grazing regulations in its current form.
7. The situation may be substantially improved by establishing effective communication with the local people, awareness generation and efficient animal husbandry program. The forest officers should take up these preventive measures in co-ordination with the Animal Husbandry Officers.
8. Maximum admissible grazing incidence according to the current policy has been shown for various working circles in **Table 10.3**. A systematic survey of fodder availability is recommended during the plan period in each round.
9. The carrying capacity and period of closure should be calculated for the forest area adjoining each village. The grazing passes, free or otherwise to individual families are proposed to be distributed on the calculated carrying capacity basis. Village bodies should also be actively be engaged in the implementation of grazing regulations.
10. The surplus cattle should be kept under regular watch, and villagers should be encouraged to adopt stall-feeding or other means to address mismatch between cattle-heads and fodder availability.

Table 10.3.

Admissible grazing incidence in various working circles

Working Circle	Functional classification	Maximum grazing incidence (ha per cattle unit)	Period
Special areas(overlapping)			
Protection areas (A1 & A2) & Special habitat areas	Protection forest	Nil	Permanent
Annual coupes	Protection forest	Nil	Till six years
Plantations	Protection forest	Nil	Till fifth year
Other area (under Working Circles)			
Anjan working circle	Tree forest	1.2	
Babul working circle	Tree forest	1.2	
Fodder working circle	Pasture lands	0.4	
Improvement	Tree forest	1.2	
Afforestation	Open forest	0.8	After plantations
Protection	Protection forest	4.0	Permanent

Note: Area required for wildlife population should be calculated accordingly, and deducted from the available area for the domestic cattle. If relevant data is not available 20% area should be marked for the wildlife.

11. Fodder development on the community lands and translocation of surplus cattle may be encouraged.
12. Animal husbandry and Dairy Development Agencies should be motivated and influenced to take up breed improvement program. Fodder in the plantation areas should be made available free of cost on cut-and-carry basis.
13. The DCF shall carry out cattle census of each village during the winter season at the beginning of the plan period to find out the local cattle once for all and maintain record and passes shall be issued limited to those cattle subject to the availability of carrying capacity.
14. The passes shall show the compartment numbers meant for the grazing by writing clearly.
15. Hacking and felling of young plants and big trees be dealt seriously and offenders shall be prosecuted.

16. The misuse of transit passes of cattle for grazing be strictly checked and if found their passes be cancelled and be dealt according to law.
17. The Grazing Settlement Report for Nandurbar areas need revision since the reorganization of the divisions and wildlife areas led to the distribution/splitting of the then grazing units. Hence new Grazing Settlement Report shall be prepared as early as possible to avoid conflicts among the villages for grazing purpose.

SECTION-7: JOINT FOREST MANAGEMENT:

JFM

1. National Forest Policy 1988 envisages the importance of involvement of local people in the protection of forests. It also emphasizes the importance of traditional rights of forest dwellers. Priority for the use of forest produce is given to forest dwellers and the use of forests for industrial purpose is discouraged.
2. As a follow up action on this new forest policy, and the encouraging experiences from West Bengal in J.F.M., the Government of India issued a set of J.F.M., guidelines in 1990 encouraging forest departments to involve local people in the management of the forests. Over the past 9 years, most of the states have issued their own guidelines. Maharashtra Government has also issued the guidelines and passed Government Resolution no SLF-1091/CASE NO 119/91/F-11 to the effect on 16th March 1992, the JFM activity was adopted for degraded forest area of the state and new guidelines have been issued vide GR No. MSC/2000/C.No. 143/F-2, dated 25.4.03.
3. Villagers themselves are required to voluntarily participate in the programme. Forest protection committee (FPC) is to be formed in each village. The members of the committee will help in protection and development of forests and they will receive in turn a share in the usufructs and output from the forest areas assigned to such committee. The JFM area will be managed according to the micro-plans prepared jointly by the Deputy Conservator of Forests and members of the FPC. These micro-plans shall contain the details of forest and village development. This has to be sustainable, should cater to aspirations of local communities and at the same time the silvicultural requirements of the forests are to be met properly.
4. Later, the government of India advised the state governments to take up the Joint Forest Management in well stocked forest areas on experimental basis and

accordingly guidelines dated 25.4.03 cited above have authorized the forest department in the state in this respect. Summary of guidelines is as follows

- 1) Govt.Resolution R & F.D.No.FDN-2011/PC-100/F-2, dated 5.10.2011.
- 2) Govt.Resolution R & F.D.No.FDM-2011/PC-104/F-2, dated 25.10.2011.
- 3) Govt.Resolution R & F.D.No.FDM-2011/PC-100//F-2, dated 22.12.2011.
- 4) Govt.Resolution R & F.D.No.FDM-2012/PC-4/F-2, dated 10.7.2012.
- 5) Govt.Resolution R & F.D.No.FDM-2012/PC-4/F-2, dated 8.8.2012.
- 6) Govt.Resolution R & F.D.No.FDM-2012/PC-4/F-2, dated 8.1.2013
- 7) Govt.Resolution R & F.D.No.FDM-2012/PC-103/F-2, dated 31/1/2013.

SECTION-8: RESERVE AND PROTECTED FORESTS.

There had been quite a few changes in the forest area of this division, since the last plan:

- 1] A total of 1876.133 ha. Of R.F. area has been disforested for various purposes since 1970.
- 2] Aner Dam sanctuary with an area of 8294.35 ha. Declared vide notification No. WLP/1086 / 27207 / CR / 39 / 86 / [1] / F-5, dt.10th October1986) has been handed over to the Wild Life Wing (Under D.C./F.,W.L.,Nashiki) on 1.7.96.
- 3] Non forest area measuring 948.91Ha. Has been taken over under compensatory afforestation scheme and has been declared as P.F. The forest area in sq. Km presently under the charge of Dhule Forest Division is as follows:

Sr. No	District	Tahsil	Range	Reserved Forest	Protected Forest	Unclassed Forest	Total Forest area
1.	Dhule	Shirpur	Shirpur	230.241	00	0.049	230.29
			Sangwi	246.910	00	00	246.91
			Boradi	245.420	00	00	245.42
		Shindkheda	Shindkheda	139.847	2.089	29.803	171.739
		Dhule	Dhule	297.550	1.614	1.563	300.727
		Sakri	Sakari	238.970	2.573	00	241.543
			Pimpalner	280.341	1.745	00	282.086
			Kondaibari	198.371	0.478	00	198.849
Total for Division				1877.65	8.499	31.415	1917.564

SECTION-9: METHOD OF TREATMENT.

1. The forests having been classified on functional basis under the different categories necessitate suitable treatment for each class. The methods of treatment will therefore differ in respect of each category of forests. It may also be necessary to adopt different methods of treatment for the different areas of forest falling in the same functional category with the main object of achieving their development to the maximum possible extent. It is with this aim that the methods of treatment are proposed.

2. **PROTECTION FORESTS:** These forests are confined to the precipitous slopes along the ridges of Satpudas and Autram ghat. The object of management in these forests is to improve vegetation, soil conservation and sub-soil water regime. No felling is prescribed. Gap planting with seedlings and seed sowing with intensive soil and moisture conservation works will be carried out.

3. **TREE FORESTS:** These are the forests, capable of yielding timber, restricted to fewer patches in pimpalner range. Improvement works such as gap planting, tending operations of the existing root stock and soil and moisture conservation works will be carried out.

4. **MINOR FORESTS:** These forests capable of yielding small timber and fuelwood cover all the six ranges. Most of the areas are either under-stocked or open. So the main object is to re-clothe the area with vegetal cover and to prevent soil erosion. The method of treatment will involve assisting the natural regeneration by providing adequate protection from fire and grazing combined with soil and moisture conservation works.

SECTION 10:- FORMATION OF WORKING CIRCLE WITH AREA:

In accordance with the general objects of management, the following Working Circles are proposed to be constituted.

- 1) Protection Working Circle (Fire, Illicit felling, Illegal mining, Poaching, Survey & Demarcation etc.).
- 2) Improvement Working Circle.
- 3) Afforestation Working Circle.
- 4) Fodder Working Circle.
- 5) Encroachment Management (Overlapping) Working Circle.

- 6) Bamboo (Over lapping)
- 7) Joint Forest Management (Overlapping Working Circle).
- 8) Wild life (Overlapping) Working Circle.
- 9) Eco Tourism (Overlapping Working Circle).

1. PROTECTION WORKING CIRCLE (FIRE, ILLICIT FELLING, ILLEGAL MINING, POACHING, SURVEY & DEMARCATION ETC.) :

All the protection forests compartments of previous working circle are included in this working circle. The area also includes which are new vulnerable to Fire, Illicit felling, Illegal mining. The area spreads along the precipitous slopes of Sahyadri and extends over the Ranges of Dhule, Shindkheda, Shirpur, Boradi, Sakri and Pimpalner, Kondaibari & Sangvi. Total area under this Working Circle is 65454.389 ha. The area will be protected intensively from fire, illicit felling, and grazing. Improvement works such as dibbling and broadcasting of seeds on precipitous slopes and gap planting on gentle slopes (25°) will be taken up in this working circle along with soil and moisture conservation works for the betterment of the area. In the present working plans, the special emphasis is laid for survey and demarcation and erection and maintenance of boundry pillars to stop felling & encroachment in the forest area. The forests suffer heavy biotic pressure, especially illicit felling, fire, uncontrolled grazing, resulting in trampled regeneration and compact soils, devoid of humus. Excessive grazing and uncontrolled fires are the main adverse factors causing degradation of forests in the division. The situation requires some bold measures to minimize these adverse influences. Boundary demarcation will be carried out in time-bound manner for ensuring territorial integrity of forest. The Revenue and Forest Departments shall ensure maintaining forest boundaries, updating land records and reconciling revenue records in accordance to forest notifications. Management of forests close to village will give priority to meeting demands of local people for small timber, firewood, pasture, non-wood forest produce, etc. Local people will be actively involved in forest management, forest protection, plantations and development of natural resources in the village

- 2. IMPROVEMENT WORKING CIRCLE:** All the Area of Hill block and the area of Umarpata block are included in the working circle. It spreads over the Pimpalner ,Kondaibari Range. The total area of this Working Circle is 62779.931 ha. These area s are capable of producing good timber, it aims at improvement of the coppices of valuable species, along with gap-filling and improvement felling for valuable species in the

standing crop. Improvement works such as artificial regeneration in understocked/blank areas with 50% teak and rest with bio fuel trees like karanj, neem, mahua, jatropa on CCT etc or lac insect host trees like kusum, bor, khair, pimpal, palas, etc or gum exudating trees like kadai, salai, khair, dhawada, mowai etc(all these species are naturally found in Nandubar forests) along with tending operations of the existing root stock and soil and moisture conservation works will be carried out in this working circle.

- 3. AFFORESTATION WORKING CIRCLE:** The barren and degraded forests are to be clubbed together, to constitute this circle spreads in ranges covering 57217.162 ha.. It aims to the fuelwood demand of the areas, by raising fuelwood plantations, with short rotation period. Simultaneously, it aims to bring back the vegetal cover in the area. These areas were degraded and denuded for want of fodder and fuelwood. These areas are spread over the entire Dhule division. The plantations raised will be felled at the end of 20 years and fuelwood will be supplied to the villagers at subsidized rates.. Intensive planting and soil and moisture conservation works are prescribed in this working circle. The objective of this working circle is to develop tree cover on blank areas.
- 4. FODDER WORKING CIRCLE:** Some compartments of Kuran working circle areas of K.N.Khistry's plan. The total area under this working circle is 7117.307 ha. These areas will be managed as traditional grass reserves. The areas will be planted with improved varieties of grasses. The grass will be disposed off preferably by permit. system are covered with good vegetation during previous working plan period these compartments have been shifted into Improvement working circle and areas where the soil depth is limited and devoid of vegetation have been included into this working circle. An area of 5762.286 ha of spread over all the ranges of the division is prescribed this treatment.
- 5. ENCROACHMENT MANAGEMENT (OVERLAPPING) WORKING CIRCLE:**
The encroachments over forest area are rampant in the Division. This Working Circle is overlapping comprising whole of Division. This Circle is introduced to tackle the problem of encroachment, which has assumed more significance after enactment of Forest Right Act, 2006. Claims have been made by encroachers on 47540.706 ha. area. In order to settle these areas, correction of records and to prevent further encroachment, this Working Circle is created.
- 6. BAMBOO (OVERLAPPING) WORKING CIRCLE:** In order to improve the stocking, density and to conserve soil and moisture of the area, bamboo replanting in the hill block area is proposed. It spreads over Kondaibari and Boradi range. It also proposes to

extract silviculturally available bamboos on a 3 year felling circle and also to undertake bamboo plantations in the annual coupes. This is an overlapping working circle spreading over the areas mainly under Protection & Improvement Working circle. The emphasis in this working circle to improve the stocking and density of Bamboo and to harvest Bamboo scientifically, so as to get maximum yield and also to generate employment and to meet local demand of Bamboo to the maximum possible extent.

7. WILD LIFE (OVERLAPPING) WORKING CIRCLE: This Working Circle includes entire area of the division & it aims at improvement of habitat of wild life. It prescribes inventory of wild life strict protection of habitat from illicit cutting, grazing & fires. Creation of awareness in the public about wild life conservation is an important task to be taken up.

8. ECO –TOURISM (OVERLAPPING) WORKING CIRCLE:

Eco-tourism is the new buzzword in the realm of tourism throughout in the world. Eco-tourism generates more employment for local population and provides enormous opportunities for entrepreneurship. Once hassles are removed and tourism sector becomes dynamic, the entrepreneurs will sprout to capitalize the opportunity to create wealth and new job and Nageshwar, Alaldari, Pimpalkheda and Lalling are some of the sites in Dhule Forest Division, where eco-tourism can flourish and can educate people about importance of environment. The newly created Working Circle is in Dhule, Shirpur, and Kondaibari Ranges and comprises of 8275.568 ha.

SECTION 11: BLOCKS AND COMPARTMENTS

The Tract dealt with consists of 02 blocks namely hill block & Umarpata block. The hill block & Umarpata block. do not have distinguishable boundaries separated from the rest of the area. Hill Block consists of the area spreading on the ridges of Sahyadris and the narrow strip of plain areas at the foot of these ridges. Umarpata Block's area is spread over the Umarpata, plateau distributed in Pimpalner range. Most of the compartment boundaries are clearly defined by permanent features such as ridges, nallas, rivers, roads, However, where the boundaries are artificial clear demarcation was not observed on the compartments. All the compartments were stock mapped on 1:5000 Scale map. Total 696 compartment with an area of 191756.850 ha. has been allotted to this Working Circle. The list of compartments allotted to this working circle is given in the Appendix No. III In Part II The area have been divided into 4 planting series. The sequence of planting in

each planting series is given in the Appendix No. II in Part II. The Protected Forest areas of 1.374 ha. Included in the Working Circle are scattered over villages.

SECTION-12: PERIOD OF THE PLAN.

The Plan is proposed for 10 years, from the year 2016-17 to 2025-26.

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CHAPTER-II

WORKING PLAN FOR THE PROTECTION WORKING CIRCLE

SECTION-1: GENERAL CONSTITUTION:

This working circle includes 65454.389 ha. Forest areas, spread along the slopes high upon the ridges of the ridges of the Sahyadris and from watersheds of river Panjara, Burai, Tapi and Amarawati. The area are spread over in all Ranges of this Division. The main objective of this Working Circle is to maintain and improve existing soil cover and to conserve and enhance existing tree growth.

SECTION-2: GENERAL CHARACTERS OF VEGETATION:

The steep and prescriptions slopes of Sahyadris consists of Teak (*Tectona grandis*) Salai, (*Boswellia serrata*), Modal(*Lennea Corimandelica*), Kakad(*Garuga pinnata*) etc. In other areas only shrubby growth interspersed with kusli and Shedy grasses are present. The shrubby growth includes Tarota(*Cassia tora*) Tarwad (*Cassia auriculata*) Karvi(*Strobilanthes callosus*) Henkal (*Gymnosporia montana*) Yellatur (*Dichrostachyas cinerea*) etc. At places, exposed rock sheet rocks, vertical cliff and grassy branks are found. 95% of the crop is less than 45 cms. in girth. Natural generation is almost absent due to biotic interferences and fire.

SECTION-3: SPECIAL OBJECTS OF MANAGEMENT:

The Special objects of the management of the forest in this working circle are.

- 1) To preserve and improve the existing vegetal cover so as to conserve soil and moisture.
- 2) To carry out extensive soil and water conservation measures such as nalla bunding, gully plugging etc.
- 3) To improve understocked areas by planting seed sowing in bushes.

SECTION-4: COMPARTMENTS AND WORKING SERIES :

The compartments allotted to this working circle are given in the **appendix NO.XV**. The total numbers of compartment included in this working circle are 628 with an area of 65454.389 ha. They have been divided into 4 working series. The broad details range wise allocation of this Working Circle is as follows:-

Sr.No..	Range	Total area	PWC
1.	Dhule	30778.797	7029.802
2.	Boradi	24561.115	18235.465
3.	Sanvgi	24691.220	8672.195
4.	Shirpur	20766.620	12722.850
5.	Sakri	24333.543	8618.140
6.	Shindkheda	19726.882	4791.214
7.	Pimpalner	26612.645	1760.506
8.	Kondaiabari	21167.971	3624.217
	Total:	192568.793	65454.389

SECTION-5 : ANALYSIS AND VALUATION OF THE CROP :

The Protection forests of the Boradi, Sakri range are having a density 0.4 to 0.5 while the rest of the area is devoid of any tree growth and consists of sparse scrubby growth. Since most of the area on steep slopes, enumeration work could not be carried out. The tree growth where occurring is mostly malformed because of fires and grazing.No natural regeneration of any tree species is observed. In some of the areas, the soil cover is almost lost and the mother rock is exposed.

SECTION-6: ROTATION :

The rotation of 20 years is fixed to tackle the whole area.

SECTION-7 : METHOD OF TREATMENT:

As these areas are on steep and precipitous slopes of Sahyadris, having more than 25° slope, hence, no felling will be carried out. The existing vegetation in the area shall be preserved.

The area of the coupe due for working will be demarcated by the RFO & treatment map will be prepared one year in advance. The treatment map will be prepared on the map of 1:50000 Scale & it will show following categories.

- A. The areas without exposed rocks.
- B. The areas with exposed rocks.

The above mentioned area will be clearly indentified on the ground as will as on treatment map.

SECTION-8: OPERATIONS TO BE CARRIED OUT:-

On the ground all the A & B areas will be demarcated by digging channels 45 cmx20 cm deep along the contour if these channels are to be dug across the contour they should be discontinuous, to avoid formation of galleys.

IN THE WHOLE COUPE:-

- i) Nala dunding & gully plugging will be done all over the area as per requirement. The nala bunds will be stabilized by local green vegetation like Euphorbia, Vitex cuttings etc.
- ii) The whole area will be closed for grazing for 7 years.
- ii) The area will be strictly protected from fires.
- iv) Special efforts shall be made to prevent further encroachment.

IN THE DIFFERENT AREAS:-

A. In the areas with less than 25° slope

- (I). In these areas C.C.T. will be taken & plantation with standard reafforestation technique with species selected by Conservator of Forests will be taken up. The Species like bamboo, Moha shall be preferred
- (II) On such areas stakes of salai etc. be planted at suitable places through watchman. The seed of Sisoo, Neem, Ailanthus, be sown in suitable area in the first week of time. No weeding be carried out as it will cause erosion.

B. In the area more than (> 25°) slope.

In these areas Euphorbias are generally present. These Euphorbias & other bushes be protected strictly & seed of neem etc. be sown in these bushes.

SECTION-9 : SUBSIDIARY SILVICULTURAL OPERATIONS:

Cutting Back Operations:- Cutting Back Operations will be carried out in the area.

- (a) All badly damaged trees not likely to recover will be cut.
- (b) All climbers which are not of ecological and economical values will be cut.

Cleaning: Cleaning operations are given below:

- (a) All climbers, which are not of ecological and economical values, will be cut.
- (b) Coppice shoots, if required, will be reduced tone per stool.
- (c) Inferior growth which may interfere with the teak or miscellaneous species of choice will be removed.
- (d) Damaged and malformed poles will be cut back.

SECTION-10 : OTHER REGULATIONS:

Fire Protection: Main-working coupes will be fire traced and rigidly fire protected for a period of **Five years** from the year of working. In the month of October /November after the demarcation is over, all the undergrowth will be uprooted. The cut material will be spread over the area to be planted in such a way that the cut material remains sufficiently away from the stems of the trees and burning do not harm the trees. The dry and cut bushes of unwanted species shall be burnt before the end of February to avoid fire hazards to the forests.

The NR needs to be protected from the hazards of fire so that the regeneration becomes future growing stock. Hence the main thrust should be on protection of regeneration.

To ensure effective protection from fire, the workable schemes of fire protection should be carried out in which the due share to people's participation shall be given. For meaningful participation, modalities shall be worked out to impart benefit to the people so that they come forward. The village forest protection committees will be formed and fire protection will be done through the village protection committee.

As such, the area being prone to fire hazard and NR of species being the first and the biggest casualty, this economic source of regeneration should be rigidly protected from fire. It causes damage to productive crop also. The comprehensive Fire Fighting Scheme should be chalked out so that effective Fire Fighting force is

created for, for the period 15th February to 15th June on 24 hour duty on suitable area basis.

The techniques of fire protection should be as per the paragraphs given in Miscellaneous Regulations.

Grazing Control:- No grazing shall be allowed in protection forests. In case of emergent situation, the rotational grazing may be allowed. The grazing will be regulated as per Govt. Policy of the Govt. of Maharashtra dt. 6th December 1968 according to which grazing incidence in protected forests should not **exceed one cattle unit for 10 acres.**

Soil and Moisture Conservation Works:

On the steep slopes, neither CCT nor DCT works be carried out to prevent soil erosion. Slopes being extremely steep, during rains the time of concentration are very low and rain water runoff attains high velocities within no time. In these areas, the following soil and moisture conservation works are prescribed. Forest areas with steep slopes (>25°) cement check dams at regular intervals on the nalas, with gabion structures on the upstream side of the check dam as a support to reduce velocity of water flowing in the nala and also to prevent early siltation of the check dam. Forest areas where slopes are >25°, cement check dams at regular intervals on the nalas, with loose boulder structures on the upstream of the check dam should be constructed as a support to reduce velocity of water flowing in the nala and also to prevent early siltation of the check dam. To check the soil erosion and enhance the moisture regime, vegetal cover of the tract is to be increased through bush sowing and dibbling of seed. On gentler slopes (<15°) CCT works should be done and fresh seed of *Jatropha curcus* should be sown at 0.5m. intervals. *Jatropha* seed being oil yielding seed, its germination viability is very low. Seed of previous season does not germinate. Hence it is mandatory to purchase or collect seed from *Jatropha* fruits of that very season. DCF should ensure that the seed is fresh by conducting germination tests before they are sown on CCTs. Works shall be completed before the onset of Monsoon. Quantum of work will depend upon the site requirement.

CONTROL FORMS: The division office will prepare the control of the coupes worked every year from the start of the working plan religiously and submit the same

to working plan office in the control form as given in volume II by April month end. The division will also submit location of maps of the area treated along with latitude and longitudes (northings and eastings) to working plan office. The treated area map is registered in GIS system and the monitoring of vegetational changes should be done using remote sensing images year after year by working plan office. The False colour composites for the entire division area required for image processing are procured by division office from National Remote Sensing Center (NRSA) and given to working plan office regularly. The images should be of September to October period. The working office will verify 10 percent of the field work done by division office to check whether the prescriptions are properly implemented or not.

DEVIATION PROPOSALS: Due to lack of funds or due to any other reasons the division fails to treat the coupe as per working plan proposals, the division should submit deviation proposal at the end of every year of coupe treatment for further necessary action. Minor deviations can be sanctioned at the level of the CCF working plan or the PCCF as the case may be, but the PCCF, before sanctioning the major deviations of the following nature, will necessarily take prior approval of the Regional CCF of the Ministry of Environment and Forests:

- 1) Change in Silvicultural System.
- 2) Clear Felling of Natural Forest.
- 3) Formation of new Felling Series; and
- 4) Large scale felling due to natural calamities, which cannot be adjusted against future yield.

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CHAPTER-III

WORKING PLAN FOR IMPROVEMENT WORKING CIRCLE

SECTION-1: GENERAL CONSTITUTION :

The areas with substantial vegetation and which require improvement through Silvicultural operations and artificial regeneration have been included in this working circle. The main aim is to improve the status of the crop and land. Therefore obtaining produce of any kind is neither expected nor regulated. This Working Circle also includes the areas belonging to the upper precipitous and very steep slopes. As far as possible, continuous blocks of such florets have been included. The area is well spread over hill block and Umarpata plateau. The area spreads mainly over the whole of Dhule Forest Division.

SECTION-2 : GENERAL CHARACTERS OF THE VEGETATION:

The Forests belongs to tropical dry deciduous type. The major species of the growing stock are Teak, Dhawada, Sadada, Kalamb, Bija, Salai,etc. The Forests are mostly well stocked except for some understocked patches. The growing stock comprises mainly of middle aged crop. The Umarpata black is having miscellaneous forest with teak coppices. Most of these areas are nuderstocked.

SECTION-3 : BLOCKS AND COMPARTMENTS:

Total 265 of compartment with an area of 62779.931 ha. have been included in this Working Circle. These areas belonged to C.W.R., Hill W.C. & Special Teak. W.C. in the earlier plan list of compartments allotted to this working circle is given in the **Appendix No.XV**. The sequence of felling in each F.S.is given in **Appendix No.XIX**.

The Range wise distribution of area under this Working Circle is as below.

S.No.	Range	Total Area of Range in Ha.	Areas under I.W.C. in Ha.
1.	Dhule	30778.797	9827.201
2.	Boradi	24561.115	4580.843
3.	Sanghvi	24691.220	9240.571
4.	Shirpur	20766.620	4789.668
5.	Sakri	24333.543	7154.869
6..	Sindkheda	19726.882	13199.812
7.	Pimpalner	26612.645	9308.181
8.	Kondaibari	21167.971	4678.786
	Total	192568.793	62779.931

SECTION-4 : SPECIAL OBJECTS OF MANAGEMENT :

The Special objects of the management are.

1. To improve the condition of the growing stock by tending existing rootstock.
2. There is a need to improve blank areas into well stocked areas through artificial regeneration.
3. To safeguard the areas against soil erosion and thereby preserve and improve the site quality.
4. The upper reaches and steep slopes will be protected so that grasses can come up in these areas.
5. To increase the proportion of valuable species in the growing stock.
6. The upper reaches and steep slopes will be protected so that grasses can come up in these areas.

SECTION – 5: ANALYSES AND VALUATION OF THE CROP:

The entire area of the working circle was stock mapped. The site qualities of the area are mostly III & at some places IV Teak forms the major species of the growing stock. The area was enumerated and the results are analyzed by the statistician as given in para 3. The growing stock predominantly species are only found in mature classes. Natural regeneration is absent.

SECTION – 6: SILVICULTURAL SYSTEM:

The Proposed method for managing these areas is Improvement felling with gap plantings. All advance growth will be nurtured along with gap filling by artificial regeneration. The felling, if any, will be purely on silvicultural considerations aiming at improvement of the growing stock, with the consent of Chief Conservator of Forests.

Rotation: - Since no major Fellings are prescribed no rotation of any species has been fixed.

Felling cycle:- Filling cycle of 20 years is fixed & accordingly 20 annual coupes in each felling series have been laid down.

Calculation of Yield: - The yield will be in the form of thinning and improvement fellings.

SECTION – 7 METHOD OF TREATMENT:

7.1: Demarcation of coupe: - The annual coupes will be demarcated one year in advance of the year of working. The boundaries of the coupes will be demarcated by cutting & clearing 3 meter wide line & by erecting pillars in the middle of the line at suitable interval except where the boundary runs along a big nala, a fire line or a road. Coupe number & felling series number will be written on the pillars on the side away from coup area. Trees in the periphery of the coupe, if available, will be given 2 coal tar band & one red band in between. The coal tar band being at b.h. the other coal tar band will be 15 cms. above it.

7.2: Preparation of treatment Map- After demarcation the whole coupe area will be inspected by RFO who will prepare a stock map by using Standard conventional signs. This will be verified by A.C.F. The trace of coupe map will show the contours along with important features like nala, streams, old plantations.

7.3: Protection areas:-

- A) Areas having steep slope more than 25°.
- B) Areas eroded & liable to erosion.
- C) 20m. width along either side of nalas.
- D) Old plantation areas.
- E) Understocked (having 0.4 density) patches of more than 5 ha.
- F) Remaining areas.

7.4 MARKING RULE:- Following marking rules are laid down for general guidance.

1. All climbers will be cut & parasites will be removed , if required, with the permission of DCF..
2. All live stools of illicit felling cut high above the ground level will be marked for felling or cut back.
3. All dead trees will be marked for felling.

SECTION–8; PROPOSED TREATMENT:

A & B. Protection areas :- Only dead trees will be marked for felling, if they are not required to be retained for site protection, subject to inspection and permission of Deputy Conservator of Forests.

C Type Area (20m. width along either side of nalas) :- Climbers will be cut and parasites shall be removed, if required..

D. Old plantation: - Old plantation will be thinned out in order to achieve spacement of 1/3 of average height of the retained trees. The trees of valuable species will be retained. Reboisement shall be carried out.

E. Understocked areas: - (Areas , having patches (having 0.4 density) of more than 5 ha.)

- i. All dead trees will be marked for felling.
- ii. Plantations of Teak, Shisam, Khair, shiwan, Moha, Beheda, Awala,Sisoo, Bamboo etc.. will be carried out using standerd afforestation techniques. The plantation areas will be closed for 7 years.

F. Remaining areas:-

- i. All dead will be marked felling. All malformed teak growth will be cut back.
- ii. In congested group of poles, inferior trees interfering & likely to interfere with the young saplings & poles of teak & other valuable species (like Teak, shisam,bija,khair,sadada,Haldu,kalamb & Shiwan) will be thinned.

SECTION-9 : METHOD OF PLANTING:

The planting model approved by the competent authority will be implemented. C.C.F.(Territorial) will provide guidance from time to time.

SECTION – 10: SUBSIDIARY SILVICULTURE OPERATION:-

A. Cutting back operation – This operation will be carried out immediately after felling is over (in the same year) & will include following operations.

- i) All badly damaged or broken trees will be felled. Normally, such cases will not occur, if the care is taken while felling.
- ii) All malformed advance growth & inferior growth likely to interefere with coppice shoots will be cut.
- iii) All stools will be cleared off felling debris up to distance of ½ meter all around.
- iv) In areas liable to erosion or in eroded areas gullies will be plugged with nearby debris.
- v) The fast growing inferior species and bamboo interfering or likely to interfere with reproduction of teak and other valuable species will be cut.

B. Cleaning :- Cleaning operation will be carried out in the 3rd year from the year of felling & following operations will be carried out.

- i) All climbers will be cut.
- ii) The coppice shoots will be reduced to one two per stool to be retained should be most vigorous, will grown & well spaced.

C. Thinning :- One thinning in the 11th year will be carried out. The coupe boundaries will be renewed a year in advance. Following operation will be carried out.

- i. All climbers will be cut.
- ii. All dead trees will be removed.
- iii. In patches of young poles crop spacing will be done in such a way that the crop after thinning will have spacing of 1/3 of the height of the crop. The sequence of operations is given in the **Appendix No.XX**.

SECTION-11: OTHER REGULATIONS:

PROTECTION FROM FIRE: Main-felling coupes will be fire traced and rigidly fire protected for a period of Five years from the year of felling. In the month of October / November after the demarcation is over, all the undergrowth of lantana will be prooted. The cut material will be spread over the area to be planted in such a way that the cut material remains sufficiently away from the stems of the trees and burning does not harm the trees. The dry and cut bushes of unwanted species will be burnt before the end of February to avoid fire hazards to the forests.

The natural regeneration needs to be protected from the hazards of fire so that the regeneration becomes future growing stock. Hence the main thrust should be on protection of regeneration.

To ensure effective protection from fire, the workable schemes of fire protection should be carried out in which the due share to people's participation shall be given. For meaningful participation, modalities shall be worked out to impart benefit to the people so that they come forward. The village forest protection committees will be formed and fire protection will be done through the village protection committee.

The techniques of the protection should be as per the paragraphs given in Miscellaneous Regulations

As such the area being prone to fire hazard and NR of species being the first and the biggest casualty, this economic source of regeneration should be rigidly protected from fire. It causes damage to productive crop also. The comprehensive Fire

Fighting Scheme should be chalked out so that effective Fire Fighting force is created for, for the period 15th February to 15th June on 24 hour duty on suitable area basis.

IRRIGATED PLANTATIONS:- wherever there is a water body (dams) in the forest or on the fringe of forest, irrigated plantation should be taken. Depending on the situation i.e., terrain and site quality, flood irrigation or drip irrigation plantation should be proposed. The site inspection should be done by RFO and ACF and submit a feasibility report to DCF about the extent of area and the type of irrigation to be given. After personal inspection, the DCF should seek funds for irrigation plantation from CCF (Territorial).

GRAZING CONTROL:- The areas of main working shall remain closed to grazing for a period of 5 years. The grazing will be regulated as per Govt. policy of the Govt. of Maharashtra dated 6th Dec.1968. Further, in the area of adjoining but with sufficient lag for working of coupe, seeds of palatable grasses be sown and villagers be motivated to harvest the fodder. The method of rotational grazing be followed. As per functional classification, this working circle can mainly be classified as minor forests and the maximum grazing incidence prescribed for it is 1.2 ha. per cattle unit. This will facilitate opening of area on rotational basis. The closed areas should be specifically mentioned in the grazing licenses and villagers be communicated of such closures by suitable means such as drum beating, notices on prominent places, village Panchayat officers etc. and by binding grass pullies or stacks along the boundaries of closed coupes.

SOIL AND MOISTURE CONSERVATION WORKS:- Gully plugging and nala bunding works will be taken up. Cement plugs or earthen bandhara be taken up on a large scale to preserve moisture for a longer period simultaneously the catchments areas of the cement plugs/earthen bandhara be treated with loose boulder structures so as to prevent siltation in the dams. On gentler slopes (>15°) CCT works should be done and fresh seed of *Jatropha curcus* or suitable site specific local species should be sown at 0.5m intervals. *Jatropha* seed being oil yielding seed, its germination viability is very low. Seed of previous season does not germinate. Hence it is mandatory to purchase or collect seed from *Jatropha* fruits of that very season. DCF should ensure that the seed is fresh by conducting germination tests before they are sown on CCTs.

Works shall be completed before the onset of Monsoon. Quantum of work will depend upon the site requirement.

PEOPLE'S PARTICIPATION:- The people's participation is the need of the hour, to protect the forest from fire, grazing, illicit cutting etc. Unless the villagers living nearby are made aware of the material benefit from the forest, they would not feel associated with the well being of the forest and may not visualize the distinct valuable utility of forests for their material benefit they get or likely to get. Therefore it should be expedited through viable measures like.

1. Motivation efforts for making them aware about natural benefits of the forests for providing them pure drinking water, bringing rain conserving top soil for boosting their agricultural production and providing fodder for their milch cattle.
2. By ensuring regular employment to the FPC members on preference basis as they associate themselves in protection, development and regeneration of forests.
3. Grazing and fodder as well as fuel wood should be related with their efforts for protection and management of forests.
4. Incentives to FPC/Village (Sant Tukaram best JFM village Scheme of the Government should get wide publicity in JFM villages) committees in terms of cash awards/free grants on annual basis would be formalized. These measures would help actively involve people in the forest management and should benefit them in the longer run. The people should be made aware of their responsibilities so that long lasting relations get strengthened and well being and sustenance of forests along with people is ensured.

CONTROL FORMS:- The division office will prepare the control forms of the coupes worked every year from the start of the working plan religiously and submit the same to working plan office in the control form as given in volume II by April month end. The division will also submit location maps of the area treated along with latitude and longitudes (northings & eastings) to working plan office. The treated area maps are registered in GIS system asnd the monitoring of vegetational changes should be done using remote sensing images year after year by working plan office. The False colour composites for the entire division are required for in page processing are

procured by division office from National Remote Sensing Center (NRSA) and given to working plan office regularly. The images should be of September to October period. The working plan office will verify 10 percent of the field work done by division office to check whether the prescriptions are properly implemented or not.

DEVIATION PROPOSALS:- Due to lack of funds or due to any other reasons, the division fails to treat the coupe as per working plan proposals. The division should submit deviation proposal at the end of every year of coupe treatment for further necessary action. Minor deviations can be sanctioned at the level of CCF working plan or the PCCF as the case may be, but the PCCF, before sanctioning the major deviations of the following nature, will necessarily take prior approval of the Regional CCF of the Ministry of Environment and Forests.

1. Change in Silvicultural System.
2. Clear Felling of Natural Forest.
3. Formation of new Felling Series, and
4. Large scale felling due to natural calamities, which can not be adjusted against future yield.

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CHAPTER-IV

WORKING PLAN FOR AFFORESTATION WORKING CIRCLE

SECTION 1: GENERAL CONSTITUTION :

The trees spread over all ranges of the Division & including areas mainly of erstwhile Coppice with Reserve W.C & Teak W.C. of early plan. Total 57217.166 hectares areas, spreading over 275 compartments, in all ranges of Dhule Forest Division are included in this Working Circle.

SECTION – 2 GENERAL CHARACTERS OF THE VEGETATION:

1: The forests correspond to the dry deciduous mixed forests, 5E of revised classification of forest types of Champion and Seth. Most of the area allotted to this working circle is degraded and open with sparsely scattered trees. Due to intense biotic pressure, the vegetation in these areas is reduced to shrubby growth. Some of these areas are subjected to heavy soil erosion. The state of natural regeneration is very poor, due to biotic interference and fire. There is reasonable soil dept in these forest areas to support vegetation.

SECTION – 3 BLOCKS AND COMPARTMENTS:

Total 275 of compartment with an area of 57217.166 ha. has been allotted to this Working Circle. The list of compartments allotted to this working circle is given in the **Appendix No. XV**. The sequence of planting in each planting site is given in the **Appendix No.XXI**. Similarly the areas of unclassified forests are also indentified by gut number & have been divided in to 4 planting series 54 in **Appendix XXI**.

SECTION – 4 SPECIAL OBJECTS OF MANAGEMENT:

The Special objects of the management of the forest in this working circle are.

- 1) To Provide vegetal cover to area.
- 2) To check soil erosion, through soil and moisture conservation measures
- 3) To increase the percentage of vegetation growth.
- 4) To involve local people.
- 5) To maintain and preserve biodiversity of the area by encouraging the plantation of indigenous species.

SECTION – 5 ANALYSIS AND VALUATION OF THE CROP:

These areas are degraded mainly because of overgrazing and fires and are no longer capable of reproducing naturally. Many of these areas have been tackled in the past and some of the areas have good plantation.

SECTION – 6 SILVICULTURAL SYSTEM:

The areas will be tackled with artificial regeneration by planting seedling of suitable species in continuous contour trenches (CCTs) in low rain fall area while pit planting will be resorted to in high rainfall areas.

SECTION – 7 THE CHOICE OF SPECIES:

The choice of species will be decided by Conservator of Forests, Dhule circle. However local species like Neem (*Azadirachta indica*), Babhul (*Acacia nilotica*), Anjan (*Hardwickia binata*), Shiras (*Albizia lebbek*) khair (*Acacia catechu*), Saunded (*Prosopis cineraria*) Sissoo (*Daebergia sissoo*) etc. may be included. 10 percent of the plants of fruits species of MFP like Awala (*Emblica indica*), Moha (*Madhuca longifoli*) Apta (*Bauhinia racemosa*), Bor (*Zizi plus mauritiana*) Bamboo (*Dendrocalamus strictus*) may also be included as per the suitability of the areas.

SECTION – 8 FORMATION OF COUPES AND AFFORESTATION PERIOD:

Afforestation period of 20 years have been fixed. Each planting series have 20 coupes. Sequence of afforestation is given in **Appendix No. XXI**

SECTION – 9 METHOD OF TREATMENT:

Demarcation of coupe: - coupes will be demarcated one year in advance of the year of Afforestation by R.F.O. The boundary will be covered with T.C.M. or live hedge fence depending upon the protection required & co-operation of the local people..

Preparation of treatment map-

The treatment map for whole coupe will be prepared on 1:5000 Scales. The treatment map will show following areas of 5 ha & more

A. Protection areas:-

- i). Areas with slop more than 45° degree.
- ii) Nalas & erodible areas.

B. Rocky areas unsuitable for raising any plantations including grasses.

C. Patches of forest with more than 0.4 density & old successful grasses.

D. Under stocked & open areas.

All the above mentioned areas will be clearly identified on the ground as well as on the treatment map.

Treatment of different areas:-

The different areas will be demarcated by digging Channels of 45cmx20cm deep. These channel will be continuous along the contours & broken when not along the contours.

Treatment of A (i) areas:-

These areas will be sown with seed of neem (*Azadirachta indica*), Siras(*Albizia lebbek*), sisso (*Ailanthus excelsa*), Babhul (*Acacia nilotica*), in the first week of June (before onset of monsoon) by Forest guards & Watchman in suitable places. No weeding will be carried out in this area.

Treatment of A (ii) areas :-

These areas will be covered extensively by nala bunding & gully plugging the cutting of locally available material like Euphorbias cutting may be used to stabilize the nala bunds.

Treatment of B areas :-

These areas are unworkable areas. The existing Euphorbias & other bushes in these areas will be protected properly seed of neem etc. will be sown in these bushes before onset of monsoon through Forest guards & Watchman.

Treatment of C areas:-

More than 50% of the areas under afforestation working circle are already tacked & as such all annual coupes are likely to have patches of old plantations. The treatment given to these areas will be as follows:-

- i) All These areas will be covered with soil & moisture conservation works as per requirement.
- ii) The crowded saplings/poles will be thinned by light silvicultural thinning. The preference will be given in the following order Neem, Sisoo, Bauhinia, Babhul, Albizzia, Subabhul, Gliricidia.
- iii. Open patches will be taken up for enrichment planting.
- iv. In case if the areas is to be taken for reafforestation because of failure of earlier plantations the area should be inspected by DCF & finding should be reported to

Chief Conservator of Forests (T), giving the probable reasons of failure & justification of reforestation. Chief Conservator of Forests should scrutinize the proposal and take the decision by following existing procedure.

Treatment of D areas :-

The areas will be classified into plantable & non palntable areas. The afforestation works will be carried out per the standard technique/model.

SECTION – 10: IMPLEMENTING AGENCY:

The annual coupes will be worked by Joint Management Forest Committees. If JMFC are not available than works shall be done on departmental basis. In the working of annual coupes, works like demarcation, preparation of treatment map, preparation of estimates will be carried out by the forest staff under technical supervision of concerned A.C.F.

An important aspect that is often conveniently ignored is the fact that all the forestry operations that are to be carried out are time bound. One of the basic causes of failure of plantations is that planting operations are carried out as and when time or funds permit. Here it is emphasized that allocation of funds be obtained well in time and working of the coupe is properly executed. All forestry operations will preferably be carried out through J.F.M. committee members, wherever formed. A short term training programme will be arranged for forest staff and J.F.M. committee members by involving Forest Training School.

SECTION 11: OTHER REGULATIONS:

Fire Protection: Main-working coupes will be fire traced and rigidly fire protected for a period of **Five years** from the year of working. In the month of October / November after the demarcation is over all the undergrowth will be uprooted. The cut material will be spread over the area to be planted in such a way that the cut material remains sufficiently away from the stems of the trees and burning does not harm the trees. The dry and cut bushes of unwanted species shall be burnt before the end of February to avoid fire hazards to the forests.

The Natural Regeneration needs to be protected from the hazards of fire so that the regeneration becomes future growing stock. Hence the main thrust should be on protection of regeneration.

To ensure effective protection from fire the workable schemes of fire protection should be carried out in which the due share to people's participation shall be given. For meaningful participation modalities shall be worked out to impart benefit to the people so that they come forward. The village forest protection committees will be formed & fire protection will be done through the village protection committee.

As such the area being prone to fire hazard and NR of species being the first and the biggest causality, this economic source of regeneration should be rigidly protected from fire. It causes damage to productive crop also. The comprehensive Fire Fighting Scheme should be chalked out so that effective Fire Fighting force is created for, for the period 15th February to 15th June on 24 hour duty on suitable area basis.

The techniques of fire protection should be as per the paragraphs given in Miscellaneous Regulations.

Grazing Control: - The areas of main working shall remain closed to grazing for a period of 5 years. The grazing will be regulated as per Govt. policy of the Govt. of Maharashtra dt.6th Dec.1968 Further, in the area of adjoining but with sufficient lag for working of coupe, seeds of palatable grasses be sown and villagers be motivated to harvest the fodder. The method of rotational grazing be followed. As per functional classification this working circle can mainly be classified as minor forests and pasture lands and the maximum grazing incidence prescribed for it is 1.2 ha per cattle unit. This will facilitate opening of area on rotational basis. The closed areas should be specifically mentioned in the grazing licenses and villagers be communicated of such closures by suitable means such as drum-beating, notices on prominent places, village Panchayat officers etc. and by binding grass pullies or stacks along the boundaries of closed coupes

Where ever there is a water body (dams) in the forest or on the fringe of forest, in the coupe to be treated for that year, irrigated plantation should taken. Depending on the situation i.e. terrain and site quality, flood irrigation or drip irrigation plantation should be proposed. The site inspection should be done by RFO and ACF and submit a feasibility report to DCF, about the extent of area and the type of irrigation to be given. After personal inspection the DCF should seek funds for irrigation plantations from CCF(Territorial).

Soil and Moisture Conservation: - Gully plugging and *nala* bunding works will be taken up. Cement plugs or earthen *bandhara* should be taken up on a large scale to preserve moisture for a longer period, simultaneously the catchment areas of the cement plugs/ earthen *bandhara* should be treated with loose boulder structures, so as to prevent siltation in the dams. On gentler slopes (<25⁰) CCT works should be done and fresh seed of *Jatropha curcus* and site specific suitable local species should be sown at 0.5m intervals. Charoli being an important NTFP of Jalgaon division, the seed should be collected in the season and sown on CCT's. *Jatropha* seed being oil yielding seed, its germination viability is very low. Seed of previous season does not germinate. Hence it is mandatory to purchase or collect seed from *Jatropha* fruits of that very season. DCF should ensure that the seed is fresh by conducting germination tests before they are sown on CCT's. Seed showing works shall be completed before the onset of Monsoon. Quantum of seed will depend upon the site requirement.

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By ensuring regular employment to the FPC members on preference basis as they associate themselves in protection, development and regeneration of forests.

Grazing and fodder as well as fuel wood should be related with their efforts for protection and management of forests.

Incentives to FPC/Village committees in terms of cash awards/ free grants on annual basis would be formalized. These measures would help actively involve people in the forest management and should benefit them in the longer run. The people should be made aware of their responsibilities so that long lasting relations get strengthened and well being and sustenance of forests along with people is ensured.

CONTROL FORMS: The division office will prepare the control forms of the coupes worked every year from the start of the working plan religiously and submit the same to working plan office in the control form as given in volume II by April month end. The division will also submit location maps of the area treated along with latitude and longitudes (northings & eastings) to working plan office. The treated area maps are registered in GIS system and the monitoring of vegetational changes should be done using remote sensing images year after year by working plan office. The False colour composites for the entire division area required for image processing are procured by division office from National Remote Sensing Center (NRSA) and given to working plan office regularly. The images should be of September to October period. The working plan office will verify 10 percent of the field work done by division office to check whether the prescriptions are properly implemented or not.

DEVIATION PROPOSALS: Due to lack of funds or due to any other reasons the division fails to treat the coupe as per working plan proposals, the division should submit deviation proposal at the end of every year of coupe treatment for further necessary action. Minor deviations can be sanctioned at the level of the CCF working plan or the PCCF as the case may be: but the PCCF, before sanctioning the major deviations of the following nature, will necessarily take prior approval of the Regional CCF of the Ministry of Environment and Forests:

- 1) Change in Silvicultural System.
- 2) Clear Felling of Natural Forest.
- 3) Formation of new Felling Series: and
- 4) Large scale felling due to natural calamities, which cannot be adjusted against future yield.

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CHAPTER-V
WORKING PLAN FOR
FODDER WORKING CIRCLE.

SECTION-1 :-GENERAL CONSITUTION.

The area spreads over Dhule and Sakri Ranges. It also includes 5 Kurans of Kuran Working Circle of shri K N Khisty's plan. Total area of this working circle is 7117.307 hectares.

SECTION-2 : GENERAL CHARACTERS OF THE VEGETETION

According to champion's classification these forests are of southern Tropical Thorn forest type 6 AC-I. All these areas are open to understocked, site quality IV b and natural regeneration of important species is absent. Soil erosion has taken place and soil depth is poor even on the fiat areas. At some Places on the slopes soil is completely washed away explosion the underlying rock. The tree growthis stunt and malformed 'The species commonly occurring are anjam (Hardwicki binata), Khair (Acacia catechu),Hiwar (acacia Leucophloea), Babul (Acacia nilotika),Dhawada (anogeissus leucophloea),Salai (Boswellia serrata),Kakad (garuga pinnata) ,Modal (Lannea coromandelica). In the recent afforestation work Neem and Subabul were planted and they fared well. At few places pure patches of Anjan forest are observed which are considered to be edaphic climaxes as per Champion's classification. They are Haedwickia type 5A/E4. The density ranges between 0.2 to 0.3. Site quality is IV B. The associates of Anjan are Kakad (Garuga pinnata) and Modal (Lannea coromandelica).

SECTION-3 : BLOCK , COMPARTMENTS AND WORKING SERIES.

Total 36 compartments are allotted to this working circle. The range wise list of kurans & compartments included in it is as under.

RANGE	NAME	TOTAL NO.OF COMPARTMENTS.	AREA
DHULE	Chaugaon	7	2057.272
	Laling	10	2182.008
SAKRI	Mhasale	19	2878.027
	TOTAL:	36	7117.307

SECTION-4 : SPECIAL OBJECT OF MANAGERMENTS.

- 1) To conserve soil & moisture in the area.
- 2) To increase the grass production of the area to meet the local demand.
- 3) To cater for other areas in case of scarcity of acute shortages out of district.
- 4) To improve the quality of fodder, grasses and vegetal cover of the area.

SECTION-5 : ANALYSIS AND VALUATION OF THE CROP.

The tree growth is sparse, stunted and malformed .The height growth is very poor soil depth is less .The areas are not capable of supplying timber and firewood because of poor soil. The plantation done in the kuran areas shows mixed result.

SECTION-6 :- METHOD OF TREATMENT.

The kurans are to be managed as grass reserves which will be totally closed for grazing. Grasses will be allowed on cut and carry system preferably through permit system. The kurans will have to be watched closely against over exploitation where sometimes the grass is removed even by scraping. In the kurans with heavy local demand like that of Laling permits will be issued only for head loads.

The protection will be done through co-operation of local people, as per guidelines of JMFCs, as is being done in Laling kuran. The areas where this is not being done, the local people will have to be motivated.

The kurans are to be improved by introducing high yielding and palatable grasses. Studies have shown that the grasses once introduced does not spread naturally and the grass land again returns to their original stage and hence to arrest this the improvement activity has to be repeated periodically .The production of grass increases up to 4th year but after that a Plateau is reached and Productivity gradually decrease and hence all the kurans have to be covered in 10 years cycle .Number of improvement series and sequence of coupes in each series given in Appendix No.XXII

Demarcation of coupe –

The whole area of the coupe will be demarcated clearly on the ground and marked on the map of 1: 15000 scales. Following types of areas will be marked on the ground & map.

- i. Protection area with greater than 45° slope,
- ii. Rocky areas without soil.
- iii. Patches of old plantation.

Other areas.

Treatment for different types of areas:- The different areas will be demarcated on the ground by digging 45 × 20 cms. deep channel.

Type A areas. :- These areas will be covered with soil & moisture conservation works like gully plugging & nala bunding. Seed sowing with the seeds of Neem, Babul, Subabul, Gilricidia, Siras, Anjan, will be done by Forest guards & Watchman in suitable places.

Type B areas: - These areas are unworkable areas the existing Euphorbias & other bushes in these areas will be protected properly & seed of Neem etc.will

Type C areas :-Old successful plantations will be thinned with light sivicultural thinning giving preference to promising species like Neem, Anjan, Sissoo , Siras , Babul, Subabul, Gliricidia etc.

Other Area: - These areas will be taken up for improvement with better variety of grasses & legumes.

Choice of species:-

The species to be planted will be decided by Chief Conservator of Forests Dhule Circle however following species may by include in the list.

- | | |
|-------------------------|-----------------------|
| 1. Dongari grass 2-4-11 | Chrysopogon fulvas. |
| 2. Paunya 100-5 (Sheda) | Sehima nervosum. |
| 3. Anjan grass. | Cenchrus ciliaris. |
| 4. Marvel 8 | Dicanthium annulatum. |
| 5. Stylo (legume) | Stylosanthus species. |

Trees / species:-

- | | |
|--------------|------------------------|
| 1. Anjan | Hardwickia binata. |
| 2. Babul | Acacia nilotica. |
| 3. Subabul – | Leucaena leucocephala. |
| 4. Siras - | Albizzia lebbeck. |
| 5. Kansar – | Albizzia amara. |
| 6. Saundad | Prosopis Cineraria. |

Method Of Execution Of Works –

Pre-monsoon works: - The coupe area will be coverd all around by live hedge fence or TCM depending upon the co-operation of local people & grazing pressure.Zonation will be done on the basis of soil depth.

Zone I	under 10 Cms.
Zone II	10 to 30 Cms
Zone III	over 30 Cms.

The whole area will be covered by soil conservation works like nala bunding & gully plugging.

Zone – I: - V shaped furrows of size 30 cms. Width 15-20 cms. Depth & 2 mtrs. Length will be dug along the contour manually or by plough. The distance between two V.S.F. is 6-8 m.

Zone II: - Grass beds (6m length × 1.25m. wide × 15cms.ht.) will be prepared at the rate of 37 per ha. Pits of the size 45cm × 45cms.for planting fodder tree species 104 per ha. Will be dug & a small water absorption trench (WAT) will be dug on upper side of the pit.

Zone III: - Grass seed plots for production quality seed will be prepared in this zone which will cover an area of about 2% of the total area of the kuran.

The yearly operations in the area shall be as below:-

First year operation: - In the first week of June seedlings of *Sehima nervosum*, *Dicanthium annulatum*, will be carried out at spacing 30cm × 30cm. In grass seed beds & grass seed plots. Along with grasses *Stylosanthes hamata* will be sown in “Grass dibbled in one row. Seedling of *Hardwickia binata*, *Leucaena leucicephala*, *Albizzia lebbek* etc.will is planted in the pits on the onset of monsoon. Two weeding & hoeings will be carried out around tree seedlings. To reduce fire hazard, fire tracing in the area will be done in the month of January. A watchman will be provided for 40 Ha. of kuran to ensure effective protection. The shrub / bush cutting will be carried out soon after the rains.

Second year operations: - With the onset of monsoon rooted slips of grass species will be planted in blank patches where seed did not germinate. Two weeding & hoeing will be carried out around tree seedlings. Grass seed beds will be weeded once. In the month of January fire tracing will be carried out.

Third Year operations: - In the third year one weeding and hoeing around tree seedlings will be carried out and fire tracing will be done in January.

Fourth & Fifth year operation: - Removal of unwanted shrubs & fire tracing will be carried out.

The works of improvement will be repeated in the same sequence after 10 years. The soil conservation works will also repeated.

The availability of good seed is very important constraint in improvement of kurans and hence it is proposed to establish 2 nurseries one each of Dhule and Sakri with the assistance of MPAU, RAHURI, for the production of grass seed and tussocks.

SECTION-7:- DISPOSALS OF GRASSES:-

This disposal will be done through JMFCs. There is local demand for the grass especially in the pinch period of summer month due to traditional milk business in Dhule Dist, when the local people even scrap the grasses in the kurans to fulfil the need thus disturbing the root system of the grasses. The scarcity recurs in the state after every 3-4 years when heavy cost is to be paid for the import of grass from elsewhere. Thus as and when contingency demands bailing of grass may be done as per requirement and at the discretion of the Chief Conservator of Forests, Dhule Circle. This will cater for the summer requirement of the local people and also can be mobilized to scarce district on demand. The grass from Laling and other nearby kurans can be collected for such collection & disposal.

SECTION-8: OTHER REGULATIONS:

Fire Protection: Main-working coupes will be fire traced and rigidly fire protected for a period of **Five years** from the year of working. In the month of October / November after the demarcation is over all the undergrowth will be uprooted. The cut material will be spread over the area to be planted in such a way that the cut material remain sufficiently away from the stems of the trees and burning does not harm the trees. The dry and cut bushes of unwanted species shall be burnt before the end of February to avoid fire hazards to the forests.

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yielding seed, its germination viability is very low. Seed of previous season does not germinate. Hence it is mandatory to purchase or collect seed from *Jatropha* fruits of that very season. DCF should ensure that the seed is fresh by conducting germination tests before they are sown on CCT's. Seed showing works shall be completed before the onset of Monsoon. Quantum of seed will depend upon the site requirement.

People's Participation: The people's participation is the need of the hour, to protect the forest from fire, grazing, illicit cutting etc. Unless the villagers living nearby are made aware of the material benefit from the forest, they would not feel associated with the well being of the forest and may not visualize the distinct valuable utility of forests for their material benefit they get or likely to get. Therefore it should be expedited through viable measures like motivation efforts for making them aware about natural benefits of the forests for providing them pure drinking water, bringing rain conserving top soil for boosting their agricultural production and providing fodder for their milch cattle. By ensuring regular employment to the FPC members on preference basis as they associate themselves in protection, development and regeneration of forests. Grazing and fodder as well as fuel wood should be related with their efforts for protection and management of forests. Incentives to FPC/Village committees in terms of cash awards/ free grants on annual basis would be formalized. These measures would help actively involve people in the forest management and should benefit them in the longer run. The people should be made aware of their responsibilities so that long lasting relations get strengthened and well being and sustenance of forests along with people is ensured.

CONTROL FORMS: The division office will prepare the control forms of the coupes worked every year from the start of the working plan religiously and submit the same to working plan office in the control form as given in volume II by April month end. The division will also submit location maps of the area treated along with latitude and longitudes (northings & eastings) to working plan office. The treated area maps are registered in GIS system and the monitoring of vegetational changes should be done using remote sensing images year after year by working plan office. The False colour composites for the entire division area required for image processing are procured by division office from National Remote Sensing Center(NRSA) and given to working plan office regularly. The images should be of September to October

period. The working plan office will verify 10 percent of the field work done by division office to check whether the prescriptions are properly implemented or not.

DEVIATION PROPOSALS: Due to lack of funds or due to any other reasons the division fails to treat the coupe as per working plan proposals, the division should submit deviation proposal at the end of every year of coupe treatment for further necessary action. Minor deviations can be sanctioned at the level of the CCF working plan or the PCCF as the case may be: but the PCCF, before sanctioning the major deviations of the following nature, will necessarily take prior approval of the Regional CCF of the Ministry of Environment and Forests:

- i)** Change in Silvicultural System.
- ii)** Clear Felling of Natural Forest.
- iii)** Formation of new Felling Series: and
- iv)** Large scale felling due to natural calamities, which cannot be adjusted against future yield.

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CHAPTER-VI

WORKING PLAN FOR ENCROACHMENT MANAGEMENT (OVERLAPPING) WORKING CIRCLE

SECTION 1:- INTRODUCTION:

The encroachments over forest areas are rampant in the Division. The stock mapping of 2013 and 2014 indicate towards the gravity of the problem. The areas which were shown by current report of DCF vide letter No. A/D-8/survey/602,dt. 22/06/2015 are areas, for which proceedings are earlier completed or pending under Forest Right Act, 2006. These are not actual figure of encroachment in Division, but are the areas, for which claims have been made by the individuals under Forest Rights Act, 2006. The actual figure of encroachment is much more. The areas under encroachments are good in soil depth and can be developed with the co-operation of local villagers for their benefit. Any encroachment of Forest Right Act, it is necessary that these areas shall be finally decided under relevant provisions of this Act.

SECTION 2:- GENERAL CONSTITUTION OF THE WORKING CIRCLE:

This working Circle comprises of all the encroachment areas of the Dhule Forest Division in which either offence is booked and/or proceedings are pending/complete under Forest Right Act, 2006. These areas are generally scattered all over the compartments. The entire encroachment areas are under cultivation since last 15 to 20 years. The comparison and stock mapping shows that the encroachments are located at same places. The areas under encroachments are devoid of any tree growth. The reported area of this encroachment is **47540.706 ha.**, distributed in all ranges of the Division except in Shindkheda range. Range wise details of these encroachments are as below:-

ABSTRACT OF REPOED ENCROCHMENTS

Sr. No.	Range	Total Area of Range	Details of Encroachment					Balance Area.
			Encroachments of 1972-78	Agrislivi Plots	Areas of Eligible Encroachments of 2006 Act.	Areas in pending cases in Encroachments of 2006 Act.	Total Encroachments	
1	2	3	3	4	5	6	7	8
1	Sakri	24154.360	186.725	162.000	170.110	3575.426	4094.261	20060.099
2	Pimpalner	28208.610	0.000	0.000	1830.612	1010.152	2840.764	25367.846
3	Koundaibari	19884.960	656.910	0.000	1005.034	4222.714	5884.658	14000.302
4	Dhule	30072.700	457.970	8.000	256.819	1151.740	1874.529	28198.171
5	Shindkheda	17173.940	0.000	0.000	0.000	0.000	0.000	17173.940
6	Shirpur	23029.080	231.690	215.340	4181.640	5697.920	10326.590	12702.490
7	Sangavi	24691.210	229.510	0.000	5637.504	2968.060	8835.074	15856.136
8	Boradi	24541.990	0.000	0.000	7552.420	6132.410	13684.830	10857.160
	Total -	191756.850	1762.81	385.340	20634.14	24758.42	47540.706	144216.144

(Source: DCF Dhule's letter No. A/D-8/Survey/602, dt.22/6/2015)

SECTION-3:- SPECIAL OBJECTIVES OF THE MANAGEMENT:

The forest areas under encroachments are the best cultivable area of the compartments. The areas were put to cultivation and raising of crops like Jawari, Bajri, Macca, Cotton, Tur etc. since last 15 to 20 years. The soil depth is good and soil erosion is less due to gentle slope. These areas are either to be restored or after proceedings under Forest Right Act 2006 be evicted and rehabilitated. The special objectives of the management are as below:

- i) To survey and demarcate the area which has been approved by the competent authority as eligible for regularization, and hand over the same to eligible encroachers;
- ii) To identify and pursue the pending cases of under Forest Right Act, 2006, for handing over of area to them after survey and demarcation;
- iii) To evict the ineligible encroachments and demarcate the area permanently on ground;
- iv) To rehabilitate the area by afforestation and soil moisture conservation works;
- v) To protect the area from encroachment and all biotic pressures with the help of local villagers through Joint Forest Management Committees.

SECTION-4: ANALYSIS AND ASSESSMENT OF THE ENCROACHMENT

The reported forest areas under encroachments are 47540.706 hs. and had been used for cultivation since last 15 to 20years. These areas are having good soil depth and less erosion due to gentle slope. The majority of the encroachments exist on the foot hill and at the fringe of forest areas. The compartment-wise details of reported area under encroachment are given in Appendix-XVIII.

SECTION-5: METHOD OF TREATMENT:

(A) ENCROACHMENT REULARIZATION:

- i) To survey and demarcate the area which has been approved by the competent authority as eligible for regularization, and hand over the same to eligible encroachers;
- ii) To pursue pending cases of encroachment under Forest Right Act, 2006 and to obtain final judgments in said cases, as expeditiously as possible. If cases are decided in favour of encroachers, the encroached area shall be handed over to encroachers within one month of survey and demarcation by Ranger Surveyor

of Dhule Forest Division within one month of said order of getting finality of the order against the encroachers.

- iii) The problem of encroachments on forest land has got increased tremendously in last few years. After the schedule Tribes and other Traditional Forest Dwellers (Recognition of Forest Right) Act 2006 came into existence, village have got the impression in their minds that new encroachment would also be regularized in future. So the legal encroachments of the people as per this act should be regularized as early as possible. Thereafter, a special scheme should be prepared to evict the illegal encroachment.

RECONCILIATION OF RECORDS

- (i) Survey of the encroachments and assess the actual extent of encroachment compartment wise
- (ii) Reconciliation of Forest land records and Revenue records.
- (iii) Collect the revised 'Gutt' numbers and each old Survey numbers of forest areas from TILR Office.
- (iv) Collect 7/12 of revised Gutt numbers from Talathi and find out the discrepancy, if any, in the entries of 7/12 regarding forest areas legal status, ownership etc.
- (v) All the incorrect 7/12 should be properly mutated as per A-1 entries of forest land record.
- (vi) Dy. Conservator of Forests Dhule will complete records reconciliation process in the shortest possible time and Collector Dhule will be consulted regularly in the matter.

(B) ENCROACHMENT EVICTION PHASE:

For illegal encroachers and in the cases, decided in favour of Government, under Forest Rights Act, 2006, it is necessary to first evict the illegal encroachments. These area will be treated in following manner:-

- (i) It is necessary to first evict the illegal encroachments. The forest areas under illegal encroachments will be evicted as soon as possible. The period of the phase will be decided by the Dy. Conservator of Forests Dhule under the instructions of Chief Conservator of Forests Dhule.

EVICTION PROCEDURE

- (i) Each encroachments should be scrutinized as per the provision of Forest (Conservation) Act 1980 and other relevant orders of Maharashtra Government for the regularization of encroachments on forest areas and a list of ineligible encroachers will be prepared by the concerned Range Forest Officer.
- (ii) The details of encroachments should be properly recorded in the forest documents like POR, spot/panchnama, location map etc.
- (iii) The cases of ineligible encroachments should be submitted by the concerned Range Forest Officer to the Assistant Conservator of Forests in charge of the Range under the provision of section 53, 54, and 54(a) of Maharashtra Land Revenue Code 1966.
- (iv) The Assistant Conservator of Forests will process the case as per the provisions of section 53, 54 and 54(a) of Maharashtra Land Revenue Code 1966 and pass the necessary eviction orders.
- (v) Provisions of Indian Forest Act 1927 will also be invoked while dealing with encroachment case.
- (vi) The local villagers should be motivated to evict their encroachments willingly. In this process, the help of forest protection committees will be taken.
- (vii) The confrontation with local villagers should be avoided while evicting the encroachments.
- (viii) In an unavoidable circumstances, the help of local Police force will be taken to evict the encroachments.

AFFORESTATION PHASE:

The afforestation phase will start immediately after the eviction or as soon as possible and the period of this phase will be 5 years.

- (i) The phase will start as soon as Trench cum mound (TCM) of size 1.90m x 1.00m x 0.60m will be taken at forest boundary.
- (ii) The forest boundary will be demarcated permanently at site.
 1. The area will be ploughed by Tractor.
 2. The seeds of local species preferred by local villagers will be sown by local villagers will be sown in the area alongwith Jatropha seeds.

- (iii) Jatropha, prosopis seeds will be sown on TCM.
- (iv) The pits planting at 4m x 4m spacing of pit size 30cm x 30cm. x30cm will be done in first year.
- (v) Local fruit species will be planted in the pits.
- (vi) The soil working of planted species will be as per the standard practice of 3, 2 & 1 soil working in first, second and third year. The weeding will be done as per the requirement of the site.
- (vii) Soil & Moisture conservation works will be taken as per the requirement of the area.

The entire area will be protected from fire and grazing upto 5th year of plantation. Protection through JFM committee after 5th year will be ensured through MOU.

SECTION 6:- CHOICE OF SPECIES TCM/LIVE HEDGE

ON TCM

Prosopis (Prosopis juliflora), Agave (Agave Americana), Babul (Acacia arabica), Gliricidia (Gliricidia maculeus), Hiwar (Acacia leucophloea), Jatropha (Jatropha curcas).

ON PITS

Local fruits and medicinal species recommended by JFM Committee or local villagers.

SECTION 7: WORKING SERIES AND COUPES

The areas under encroachment will be treated after the same are got evicted. Therefore any coupe working will not be proper. The entire area under this Working Circle will be treated as soon as the encroachment is removed and the area is taken in possession by Forest Department. The entire area under encroachment will be treated during the Plan period.

SECTION-8:- IMPLEMENTING AGENCY:

The handing over of area to eligible encroachers and eviction process will be completed by department with the help and cooperation of local villagers, FPCs and JFM etc. The demarcation works will be completed by department and in the evicted

afforestation and soil moisture conservation works will be executed by JFM committee under the supervision of Forest Department.

SECTION-9: WORKING SERIES AND COUPES

The areas under encroachment will be treated after the same are got evicted. Therefore any coupe working will not be proper. The entire area under this Working Circle will be treated as soon as the encroachment is removed and the area is taken in possession by Forest Department. The entire area under encroachment will be treated during the Plan period.

SECTION-10:- MISCELLANEOUS REGULATIONS

(A) PROTECTION FROM FRESH ENCROACHMENT-

The evicted areas will remain prone to fresh encroachments. Therefore, the field staff will regularly inspect these areas and concerned beat guard will continuously patrol in these areas and mention about these areas in his '**Khariyat**' monthly report. The concerned foresters will inspect these areas once in every month and Range Forest Officer will inspect these areas once in two months. The Assistant Conservator of Forests will also visit these areas whenever they go to the areas near to these areas. Dy. Conservator of Forests Dhule will take review of these areas in his monthly meetings regularly with Assistant Conservator of Forests and Range Forest Officers. Dy. Conservator of Forests will also visit these areas as frequent as possible.

(B) CLOSURE TO GRAZING:

These areas will be protected from grazing since the areas are easily assessable to cattles and near to private agriculture land or roads. Effective protection will be ensured by field staff. Local villagers will be motivated and forest protection committee will be involved in protection works. Cattle proof trenches will be made effective to stop grazing in the area.

(C) FIRE PROTECTION:

These areas will be protected for intentional fires. During fire reasons, all possible efforts will be made by Range Forest Officer to protect these areas from fire.

(D) BOUNDARY MAINTENANCE:

1/5th the boundary maintenance will be taken up as per the schedule. However, the forest boundaries of these areas will be verified regularly and in case of any maintenance is required before due schedule, the Dy. Conservator of Forests Dhule will take permission of Chief Conservator of Forests Dhule and repair the boundary. In no case, the boundary should be left unattended and unmaintained at any point of time.

The areas will remain hypersensitive from encroachment point of view and as such, the instructions about protection works issued by Government order dated 08.05.2003. will be followed scrupulously.

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CHAPTER-VII
WORKING PLAN FOR
BAMBOO (OVERLAPPING) WORKING CIRCLE

SECTION-1:- GENERAL CONSTITUTION:-

This is an overlapping working circle spreading over the areas of SCI & Improvement working circle. The area is distributed over Pimpalner and Kondaibari Ranges only. This overlapping Working Circle comprises 11658.891 hectares area.

SECTION-2 :- GENERAL CHARACTERS OF THE VEGETATION :-

The forests belong to Southern tropical dry deciduous forest. The quality is IV. The density varies from 0.3 to 0.5. The main species of the growing stock are Teak, Shisam, Sadada, Kalamb, Bija, Sawar, etc. In addition this *Dendrocalamus strictus* is found to occur, in 45 compartments of Pimpalner and Kondaibari Ranges.

SECTION-3 :- BLOCKS AND COMPARTMENT:-

The following 45 compartment of Pimpalner and Kondaibari Ranges are allotted to this working circle -210, 211, 212, 213, 214, 215, 220, 221, 226, 227, 228, 71, 72, 73, 74, 75, 76, 77, 78, 79, 167, 168, 169, 170, 171, 387, 388, 389, 390, 391, 392, 393, 394, 395, 396, 154, 160, 161, 444, 445, 222, 223, 224, 225, 380.

SECTION-4:- SPECIAL OBJECTS OF MANAGEMENT:-

The special objects of management are.

1. To improve the stocking and density of the bamboo in the area by under planting of the bamboo.
2. To harvest mature bamboo scientifically so as to get maximum sustained yield.
3. To meet the local demand of bamboo to the maximum possible extent.

SECTION-5:- ANALYSIS AND VALUATION OF THE COMPARTMENT:-

The entire area of this working circle has been stock mapped on 1:15000 scale toposheet. The distribution of the bamboo is sparse having less than 100 clump/ha. The bamboo is of the in type having 10-12 cm. girth and a length of 6 meters. It indicates that it is a low quality bamboo. Bamboo is associated with Teak, Shisam, Sadada, Kalamb, Bija. No natural regeneration of bamboo is found in the area. The last report of bamboo flowering was made in the year 1959.

SECTION-6:- FELLING CYCLE:-

The felling cycle will be three years. Entire area is divided in to three coupes. Every year one coupes will be worked. The areas planted with bamboo will be taken for work after 7 years.

SECTION-7- METHOD OF EXECUTING THE CUTTINGS:-

The coupes will be demarked as per the standard procedure and while working bamboo coupes the following rules will be followed.

The Rules for the Working of Bamboo Areas-

1. Felling cycle of 3 years will be adopted
2. No harvesting works should be permitted between 15th june to 30 th September.
3. No clump should be considered fit for harvesting unless it contains more than 12 mature clums (one year as well as two years included)
4. No clump below the age of two years will be felled.
5. Following clump shall be removed from all clumps.
 - a) All dead, decayed and dry bamboo.
 - b) Clums whose half or more top part is broken oa damaged.
 - c) Twisted or malformed clums.
6. In a matures clump the following types of culms (green and living) will be retained:
 - a) All current seasons i.e less than one year old culms.
 - b) From the rest culms equal in number to the current seasons (i.e. less than one year old) culms or eight, whichever is more. The remaining culms will be considered available for harvesting.
7. The cutting height of culms will be between 15 cms to 45 cms above ground level i.e. above the first internodes above the ground. the cut shall be slant with a sharp instrument.
8. In case of any flowering, no culm from flowered clump shall be felled in the year of flowering.
9. Harvesting of bamboo shall be done in manner so as to ensure that the retained culms are evenly spaced and that some mature culms i.e. more than two years old are retained on periphery for the purposes of support to the new culms.

10. Following Act will be strictly prohibited
 - a) Digging of rhyzone.
 - b) Lopping of bamboo culms for bundling.
11. Climbers infesting with growth of bamboo clumps shall be cut.
12. All cutting debris shall be removed at least one meter away from the periphery of each worked clump.
13. The minimum number of culms to be retained in each clump is fixed on the basis of quality classes as follows.
 - i) quality 20 culms.
 - ii) quality 15 culms.
 - iii) quality 10 culms.

However the number will be exceeded so that the total number of mahila (1 to 2 year old) & pakia (older) culms together is not less than the total number of karlas (culms up to 1 year age) in the clump.

14. No grazing should be permitted during the rains in bamboo forest which has been worked in the previous open season.

SECTION-7.1 POST HARVESTING OPERATION IN BAMBOO OVERLAPPING WORKING CIRCLE:-

Post harvesting operation carried out in Bamboo Overlapping Circle is given below.

15. Following act will be strictly prohibited
 - a) Digging of rhizome.
 - b) Lopping of Bamboo Clumps for bundling.
16. Climbers infesting with growth of bamboo clumps shall be cut.
17. All cutting debris shall be removed at least one meter away from the periphery of each worked clump.
18. No grazing should be permitted during the rains in bamboo forest which has been worked in the previous open season.
19. Fire caused extensive damage to the new shoots of bamboos and, therefore, these are must be completely protected from fire by removing all debris from the forest in the form of cleaning.

SECTION 8- ARTIFICIAL REGENERATION:-

The demand for bamboo both for cottage industries (basket & mat making) and household requirements is increasing gradually. But the area under bamboo has shrunk as the time passed by. It is therefore desired to take up bamboo plantations, in the areas where natural bamboo is non-existent but area has potential for production of bamboo. This bamboo will be planted in suitable areas at 6m x 6m. as one of the species in all the working circles where planting or gap planting is prescribed.

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CHAPTER-VIII
THE NON TIMBER FOREST PRODUCE (OVERLAPPING)
WORKING CIRCLE

SECTION-1: GENERAL CONSTITUTION OF THE WORKING CIRCLE:

This is an overlapping working circle covering the entire forest area being dealt in this Working Plan. The minor forest produce especially Tendu Leaves is the major source of revenue. The collection of Tendu Leaves is use of one of the most important activities of this division. The collection and sale of these NTFP generate employment to the local communities.

SECTION-2: FOREST PRODUCE:

The NTFP species are rarely found as pure crop or confined to particular patches only. Other than Tendu no NTFP species found in this division it has to be artificially plant regenerate with is SCI and IWC working circle of this division. The species one like Apta, Moha, Beheda, Khair, Karanj, Nirgudi, Agave, Honey, etc.

Sr.No.	Year	Qty. of Collection (Bags)	Amount
1	2006	150	300000
2	2007	943	1886786
3	2008	493	986786
4	2009	2300	2186786
5	2010	1995	1348292
6	2011	1997.807	828000
7	2012	00	00
8	2013	00	00
9	2014	00	00
10	2015	00	00

Apart from Tendu the NTFP Available in the division are:

1	Apta Leaves
2	Moha Flowers and Fruits
3	Behada Fruits
4	Agave Leaves
5	Khair wood (for Katha)
6	Karanj Seed
7	Honey

SECTION-3: SPECIAL OBJECTS OF MANAGEMENT:

- i. To identify and conserve the forest area rich in NTFP.
- ii. To increase the quantity and quality of NTFP produce.
- iii. To build up a database on NTFP
- iv. To identify of Medicinal Plants conservation area for long term in-situ protection of rare and endangering medicinal plants.
- v. Generating employment for local tribes and other rural peoples.

SECTION-4: METHOD OF TREATMENT:

The non-timber forest produce enlisted above have good demand and some of them are harvested regularly.

Produce are sold as units annually either by way of auction or on permits.

i) Tendu Leaves (*Drospyros melanoxylon*): These leaves are used for making bidis. The ripe fruits are eaten by human and are also feast for bears. There are 2 units of Tendu in the division and production for last 5 years with revenue is Tarot given in the part-I Tendu trees are sometime cut by the local people in Tendu season for easy and fast collection of leaves. The trees though a good coppice the mother trees yielding fruits are decreasing due to illicit cutting and needs to be checked keeping vigilance especially during Tendu season.

1. Apta leaves (*Bauhinia racemosa*): These leaves are also used for making beedis and the frade seems to exists only in Gujarat State. The Apta seedings should be planted in plantation areas to increase the percentage of Apta trees.

2. Moha Flower and Fruits (*Madhuca longifolia var. Latifolia*): The Mahua or Moha tree is popular in the tribal belt for the drink made from distillation of flowers, besides the flower are also eaten raw or cooked. The fruits also yield oil which is consumed in the tribal areas. The Moha trees being very important to the tribals they generally do not cut these trees and hence this species needs to be made part of the plantation species all over the areas.

3. Behada Fruits (*Terminalia bellirica*): The fruits of this tree forms part of Triphala in ayurvedic medicine. The kernel also yields medicinal oil. The species readily comes up even in low rainfall areas and should be planted wherever feasible.

4. Agave leaves (*Agave sisilana, Agave americana*): Agave leaves have demand because of it fibres. It is a good live hedge and should be planted on TCM and Nala bunds.

5. Khair wood (Katha) (Acacia catenhu): Khair wood has a great demand in Katha in industry and there was a khair overlapping working circle in the earlier plan. However there is marked depletion of the stock of these trees and it needs to be built up by making plantation of this species in suitable areas and regular afforestation works.

6. Karanj seed (Jatropba curcus): This seed have demand for its oil. The oil can also be used as fuel and can be raise from cuttings or by dibbling seeds and can supplement our depleting petroleum resources. The plants can be raised from cuttings or by dibbling seeds and forms a very good live hedge. It should be planted to stabilize nala bunds TCMs and also other boundaries, fencings etc.

7. Honey: Honey produced by honey bees is a very important product because of its medicinal and nutrition value. The extraction of this honey should be done scientifically to get mort yield. It can be a very good cottage industry for the people living in the midst of forests. The processing and marketing can be managed by forming co-operatives.

The workers of Centre of Science for villages, Dattapur Wardha "have evolved a scientific method for extraction of honey of the rock bee (*Apis dorsata*) which contributes to 80% of annual honey production of India. The technique involves mollifying the bees by spraying water over the comb and removal of the honey chamber without disturbing the hood chamber are the kept in solar honey separator to get pure honey squeezing the whole comb.

The institute also imparts training to the local people who are involved in the collection of honey (honey hunters) by traditional method of using fire and smoke to drive away bees and squeezing whole comb to get the honey. The local tribal and other people involved in extraction of these important produce needs to be trained urgently to increase the production of honey and !also to get more earning to them.

8. Nirgudi sticks (Vitex negundo): This is a very important large shrub which can come up vegetative. It is in demand for making baskets, grain storages as well as making partition in mud houses. It should be planted in the nala bunds to stabilize them. It should also be planted on TCM and other fencings as it forms a very good live hedge fence.

CHAPTER-IX

JOINT FOREST MANAGEMENT (OVERLAPPING)

WORKING CIRCLE

SECTION-1: INTRODUCTION:

National Forest Policy 1988 envisages the importance of involvement of local people in the protection of forests. It also emphasizes the importance of traditional rights of forest dwellers. Priority for the use of forest produce is given to forest dwellers and the use of forests for industrial purpose is discouraged.

As a follow up action on this new forest policy, and the encouraging experiences from West Bengal in J.F.M., the Government of India issued a set of J.F.M., guidelines in 1990 encouraging forest departments to involve local people in the management of the forests. Over the past 9 years, most of the states have issued their own guidelines. Maharashtra Government has also issued the guidelines and passed Government Resolution no SLF-1091/CASE NO 119/91/F-11 to the effect on 16th March 1992, the JFM activity was adopted for degraded forest area of the state and new guidelines have been issued vide GR No. MSC/2000/C.No. 143/F-2, dated 25.4.03.

Villagers themselves are required to voluntarily participate in the programme. Forest protection committee (FPC) is to be formed in each village. The members of the committee will help in protection and development of forests and they will receive in turn a share in the usufructs and output from the forest areas assigned to such committee. The JFM area will be managed according to the micro-plans prepared jointly by the Deputy Conservator of Forests and members of the FPC. These micro-plans shall contain the details of forest and village development. This has to be sustainable, should cater to aspirations of local communities and at the same time the silvicultural requirements of the forests are to be met properly.

Later, the government of India advised the state governments to take up the Joint Forest Management in well stocked forest areas on experimental basis and accordingly guidelines dated 25.4.03 cited above have authorized the forest department in the state in this respect. Summary of guidelines is as follows

- i. Good forests within 2 km from a village are to be covered under the programme on experimental basis and stage by stage other villages containing good forests are to be brought under it.

- ii. JFM is to be implemented with the help of gram *panchayat* and forest produce available is to be provided on priority to meet bonafide local needs.
- iii. The village having non-forest land, which has agreed to participate in the programme, may be brought under the scheme.
- iv. Help of the institutions of local self-govt., NGO, environmental The scheme though does not intend to facilitate agriculture based professions but non-irrigated horticulture schemes in (private) wastelands may be encouraged if approved in the micro-plan expert, if any available locally, may be solicited.

The scheme though does not intend to facilitate agriculture based professions but non-irrigated horticulture schemes in (private) wastelands may be encouraged if approved in the micro-plan.

The program underlines conservation of forests and wildlife and therefore any activity/agreements etc. that is not consistent with Forest Conservation Act, 1980 should not be incorporated in the micro-plan.

SECTION 2: - GENERAL CONSTITUTION:

It shall be an overlapping working circle, extending in whole Dhule Forest Division. Joint Forest Management may be taken up in any village if the forests belong to the category as defined in the Government of Maharashtra Resolution dated 16th March 1992, 25-04-2003 and 22-12-2011. Joint Forest Management committee is constituted in Taluka at Range level. There are about 292 JFM committees in Dhule forest division. The area of JFM committees in village level is reserved for pasture development, is permitted to JFM committees; as well as activities like forest protection of ranges, improvement prevailing skills, regular patrolling in forest area of ranges, volunteers works of forest development are executed by members of JFM committees.

Sr No	Taluka	Ranges	Total No of J.F.M.	Alloted area in ha.
1	Dhule	Dhule	56	7309.009
2	Dhule	Shindhkheda	76	8452.570
3	Sakri	Pimpalner	54	10141.268
4	Sakri	Kondaibari	22	6103.00
5	Sakri	Sakri	22	6481.420
6	Shirpur	Shirpur	24	1470.00
7	Shirpur	Boradi	20	95.00
8	Shirpur	Sangvi	18	3150.00
		Total	292	43508.267

2: However with a view to afforest the degraded and denuded forests of Dhule Division and to improve some of the under stocked areas closer the villages efforts shall be made to motivate the villagers to take up JFM in these villages.

3: A micro plan of a village where the degraded forest area is falling shall be prepared. R.F.O., shall prepare a detailed micro plan of the village after conducting a PRA exercise as per G.R. Dated 16-3-1992. The details of the villages where J.F.M. has been implemented in Dhule.

SECTION-3:- SPECIAL OBJECTS OF MANAGEMENT:

The special objects of management are as follows

- a. Reforestation of degraded forests with the participation of villages.
- b. Plantation and its protection with the help of forest protection committee.
- c. To let avail usufructs derived from such afforestation to the villagers.
- d. To create awareness about importance of forest amongst the people.
- e. To increase vegetal cover.
- f. To check soil erosion.
- g. To bring about soil and moisture conservation.
- h. To utilize the land for the productive purpose according to its capability.
- i. And ultimately bring about the integrated development of the adjoining villages with help of all other development agencies.
- j. Encouraging the JFM villagers to participate in Sant Tukaram Vanagram Vikas yojana, providing prizes to both villagers and staff to motivate and promote JFM concept.

SECTION-4:- IMPLEMENTATION:

Implementation of the prescriptions under this working circle are totally dependent on the willingness of the villagers, neither the compartments are allotted nor the felling series are formed. But if some villagers do not show interest, the areas of those villages shall be tackled under the concerned working circle. Any other village may be tackled under J.F.M., from any range and any working circles if the D.C.F., deems them fit. The micro plan prepared under the overall frame work of the respective working circle of the working plan for that

village shall supersede the working plan so far as that village is concerned. This shall not be considered as a deviation from the working plan prescription.

SECTION-5:- THE PRINCIPLES:

Following principles should be adhered to during the implementation of J.F.M. in any village.

- a) Eco system Protection
- b) Participatory, Democratic structure.
- c) Open Communication.
- d) Management of Responsibility and Benefit sharing in Relation to Traditional usage.
- e) Gender Equity.
- f) Community Responsibility.
- g) Effective Conflict Resolution.
- h) Traditional Rights and use.
- i) Discrete Jurisdiction and Explicit Agreements and last but not the least.
- j) Effective Monitoring and Advocacy

SECTION-6:- METHOD OF TREATMENT:

The areas shall be treated according to the J.F.M. Plan for the village to be prepared in consultation with the villagers as per the guidelines issued by the government vide G.R. No SLP/1091/C.N. 119/F-11, Mantralaya, Bombay dated 16th March 1992. Similarly, the guide lines issued by the central government in this connection vide its letter No 6-21/89, F.P. dated 01-06-1990 shall be considered. The Forest Development Agency (FDA) project sponsored by Ministry of Environment and Forests, Government of India, is a wonderful opportunity for forest department for J.F.M implementation. This project gives lot of flexibility to plan as per local demands. The entry point activity provision helps in developing relationships with the villagers.

Micro plans to be prepared should be broadly based on the prescriptions given for the areas under consideration. Micro plan duly sanctioned by competent authority will not be considered as deviation to this plan prescriptions. The following activities should be tried out in villages as per local situation

- a) Conducting Medical Camps with local Medical Authorities/NGO's like Rotary/Lions clubs or Indian Medical Associations of the district. Medicines may be supplied free to the villagers from entry point activities.
- b) Focus on Economic improvement activities like implementation of Amendment 73. The earmarked NTFP products in JFM/scheduled areas should be implemented. The awareness to this amendment is not seen in the villages. The local authorities should take initiative, conduct meetings in the villages and self help groups should be formed. The collection of NTFP like gums, lac moha flowers, honey, natural dyes (palas flowers, bixa, dhawada sal etc) should be done by SHG's and the marketing should be done by forest department by contacting traders all over the country. Whoever offers best price to the NTFP the Transit Pass should be issued. The departmental intervention is essential in the beginning, so that the villager is not cheated by the middle men. Once the awareness has set in the villages the department can become a silent regulator.
- c) Electrify to villages with generators running on biofuels like Karanj seed oil, Jatropha oil, Moha, Neem oil. The oil expelling facilities should be provided at a prominent place in the division. Even esterification facilities should also be made available near the oil expeller for effective use of bio fuels.
- d) Regular training programs to the villagers regarding scientific lac cultivation (Indian Lac Research Institute ILRI, Ranchi), GUM grading techniques/ spray drying techniques for removing impurities in gum so that the villager can get better price for the NTFP collected.
- e) NTFP theme plantations, like GUM yielding species plantations (Dhawada, Salai, Khair, Hiwar, Movai Babul etc), Lac insect host plant plantations(Kusum, Palas, khair, bor, rain tree, acacia auriculiformis, Pimpal etc), Bio fuel plant plantations(Karanj, Neem, Moha, jatropha, palas etc) should be taken around the JFM villages in consultation with the villagers. The program underlines conservation of forests and wildlife and therefore any activity/agreements etc. that is not consistent with Forest Conservation Act, 1980 should not be incorporated in the micro-plan.

SECTION-7:- HUMAN RESOURCE DEVELOPMENT:

The concept of Joint Forest Management (JFM) requires proper training, both among forest personnel and among villagers. The concept should be thoroughly appreciated first among forest staff, particularly among forest guards, Range officers and Range Forest Officers, who are the real implementing officers in the field. Hence there should be regular training sections to these staff members. Senior officers and sincere NGO's should be called to train the staff. Developing such strong commitment among field officers is important for proper implementation and success of Joint Forest Management.

Conducting meetings regular and repeatedly among villagers to impress among them the concept of joint forest management is very important. There are lot of success stories within the circle and state. People from such villages should be called to address these villagers to realize the importance of Joint Forest Management. Getting close to the villagers by conducting programs like medical camps, creating women self help groups, training village youth for generating income and making self sufficient is an important activity of JFM. The non timber forest produce like grasses, gums, biofuels, lac cultivation, natural dyes, honey etc from forest should be sustainably exploited for creating income generation among village youth and women. Such income benefits to the villagers from forests will create a sense of belonging towards the forest resource and will result in forest protection and subsequent development of forest. Making villagers aware that they are stake holders in forest resource by generating income from forest resource i.e 33 NTFP items earmarked for gram panchayats by JFM GR. Forest department should provide technologies to sustainably tap(non destructive methods) the forest resource and facilitate marketing the produce so that the poor villagers are not exploited by middle men. Once such income benefits starts flowing to the villagers and realization of the value of NTFP from forest among villagers will make them protect the forest around their village on their own, is key to success of joint forest management.

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CHAPTER-X

WORKING PLAN FOR WILD LIFE (OVER LAPPING) WORKING CIRCLE

SECTION-1 : GENERAL CONNSTITUTION

This overlapping working circle covers entire area of the Division

SECTION-2 :SPECIAL OBJECTS OF MANAGEMENT

- 1) To conserve the wild life & its habitat
- 2) To conserve the biodiversity of the area especially of the Western Ghats, which forms its Northern limit.
- 3) To create awareness in the public about wild life conservation

SECTION-3: DISTRIBUTION OF WILD LIFE

The animals commonly found in the area are Panther, Indian wolf, Jackal, Hyena, Barking Deers, Hares etc.

Besides variety of avifauna & snakes are found in the area. The detailed list of animals found in the division is given on page No.____ of the plan Panther & Indian Wolf are the vulnerable animals (as per red data book on Indian animals) found in the division

SECTION-4 : LEGAL POSITION

The provision of Wild life (Protection) Act. 1972 & Rules their under are applicable to this area.

SECTION-5 : MATHOD OF TREATMENT

A detailed survey of the tract with respect to wildlife on the following points needs be carried out.

1. Abundance of various wild animals in the area.
2. Whether the area is used by wild animals, if so which species are using which area.
3. Purpose of using the area i.e. for food, shelter, migration or for breeding purpose.
4. Season in which the area is used more frequently.

5. A series of census operation to be carried out to know the abundance and age composition (young, adult, cub, fawns) of wild animals and the prey predator relationship.
6. Location and mapping of water sources present in the area and classifying them as annual/ seasonal, artificial/natural etc.
7. Rare or vulnerable species of flora if any will also be listed & its habitat will be identified.

The following measures should be adopted for betterment of wild life in the area.

- 1 Protection of wild life from poaching & hunting.
- 2 Protection of habitat from illicit cutting, grazing and fires.
- 3 No felling (where prescribed) to be carried out near the water holes & the path frequently used by wild life.
- 4 During felling fruit & seed bearing trees should be retained as per existing guidelines
- 5 3-5 hollow, dead top, partially dead or fully dead (snag) standing trees per ha. Particularly tree of more than 20 cms. Gbh & more than 5 m tall be retained.
- 6 In the afforestation works fruit & flower trees like, Ber, Ficus, Erythrina, Semail which are helpful in increasing bird population should be planted.
- 7 Existing water sources should be augmented in such a way that the water lasts till late summer. This can be done by soil & moisture conservation works like nala bunding gully plugging, vegetative watt ling etc.
New water sources should be developed as forest tanks, anicuts etc. where required.
These water sources should be guarded during summer.
8. The habitat of rare, vulnerable, plants species if any should be identified & protected strictly & strictly & efforts to regenerate it naturally or artificially should be taken up.

Creation Of Awareness seeking Co-operation Of people in Protection Of Wild

Life:

Local people should be made aware of the importance of wild life in the ecological balance. This should be done through publicity wing, lectures in the village schools, colleges etc.

The special effort should be taken during occasions like, wild life weeks, world forestry day, environment days etc.

Slogans about conservation of wild life, prevention of fires etc. should be put at strategic places like roads passing through the forests, ghats etc.

In case of death of cattle & loss of human life or injuries to human beings the cases of compensations should be disposed off promptly paying immediate ex-gratia relief to the persons suffering losses.

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CHAPTER-XI

WORKING PLAN FOR

ECO –TUORISM DEVELOPMENT (OVERLAPPING)

WORKING CIRCLE

SECTION-1: INTRODUCTION:

1: Eco tourism is the new buzzword in the realm of tourism throughout the world. Mr. Hector Ceballos Lascurain is the father of Eco tourism who coined the word ECO TOURISM in 1983. He said that “Eco Tourism respects the environment, encourages and promotes the well being of local people. Nature tourism may or may not do this”. A mechanical implementation it and an over emphasis on physical and financial targets without making an attempt to understand the spirit of the programme would end up in causing irreparable damage to the environment. It is more difficult to establish and run a successful ecotourism enterprise. A main difference is the need to take into account the environmental factors and successfully integrate them with business and social concerns in a carefully thought out and implemented plan. Eco tourism generates more employment and provides enormous opportunities for entrepreneurship. Once hassles are removed and tourism sector becomes dynamic, the entrepreneurs will sprout to capitalize on opportunities to create wealth and new jobs.

2.: Eco tourism management seeks to integrate and balance servaznt potentially conflicting objectives, protection of natural and cultural resources, provision of recreation opportunities and generation of economic benefits. In the absence of effective planning and management eco tourism can lead to significant negative impacts on vegetation, soil, water, wildlife and historic resources, cultural and even visitor experiences such as visitor crowding had conflicts. Such impacts can be both ecologically and culturally significant and may negatively affect visitor satisfaction. Visitation may diminish along with the economic benefits and resource protection incentives. Eco tourism has been the fastest growing sector in tourism with estimated annual growth rate of 10 to 15% over the last few years and it is expected to grow even more in future. The present government emphasis is on eco tourism; with proper

planning it is a onetime investment activity, which triggers enormous employment opportunities in various fields like transportation, restaurant, hotel, tourist guide, shopping, other entertainments like cinema halls etc.

SECTION-2: WHAT IS ECO TOURISM?

- A. Eco tourism is responsible travel to natural areas, which conserves the environment and improves the welfare of local people. (The eco tourism society 1993).
- B. Tourism that involves travelling to relatively undisputed natural areas with the specified object of studying, admiring and enjoying the nature and its world of plants and animals as well as any existing cultural aspects found in these areas is denied as eco tourism. (World Tourism Organization).
- C. Eco tourism is about creating satisfying a hunger for nature, about exploiting tourism's potential for conservation and development and about averting its negative impact on ecology, culture and aesthetics.

SECTION-3: BASIC PRINCIPLES OF ECO TOURISM:

1. Avoids negative impacts that can damage or destroy the integrity or character of the natural or cultural environment being visited.
2. Educates the traveler on the importance of conservation.
3. Directs revenues to the conservation of natural areas' and the management of protected areas.
4. Brings economic benefits to local communities and directs revenues to local people living adjacent to protected forests.
5. Emphasizes the need for planning and sustainable growth of tourism industry, and seeks to ensure that tourism development does not exceed the social and environmental "carrying capacity".
6. Retains a high percentage of revenues in the host country by stressing the use of locally owned facilities and services.
7. Increasingly relies on infrastructure that has been developed sensitively in harmony with the environment.

SECTION-4: SUSTAINABLE FOREST MANAGEMENT ECO TOURISM AS A TOOL:

1: Forestry has traversed through various phases over the past century. During British rule, the main focus was on production forestry and after independence, the focus slowly shifted from production forestry to protection forestry. However with rapidly increasing human and livestock population, there is immense biotic pressure on our forests. In order to solve the predominant human-forest conflicts, the concepts of people's participation and Joint Forest Management have been evolved.

2.: To maintain the forests' sustainably over an indefinite period and its dependence on both government and foreign grants is to be reduced there is an immediate need to evolve as revenue-generating aspect of forestry that does not result in the extraction of any forest produce i.e. timber, firewood etc. The only way to bring this sort of revenue generation is through Eco tourism. It is in this sector that the future of forestry lies. In the new millennium, the time has come to move from merely conservation forestry to towards "Intellectual Forestry", the basis of which **Ecotourism.**

4.1 Greater awareness generation among the public: It is observed that whenever on talk of stake holders in forestry, the focus is always on forest dwelling communities, forest department communities, local NGOs and the forest department. The city and town dwelling urban forest independent communities are not at all considered as having any stake in the forestry. It is a matter of irony, however that almost all the decision makers and opinion-leaders of the country, be they top bureaucrats, judges, Industrialists', famous personalities and even politicians, etc. Are all members of this community? Even though the segment comprises only a small percentage of country's population, its ability to influence decision making is much more significant. The new GR on FDA has given a new direction in involving the towns and cities in Joint Forest Management.

Ecotourism is the best possible manner in which these forest independent communities can be made aware of forestry in India. Ecotourism could also expose school children-the future generation of policy makers to the relevance and importance of our forests. As people today are becoming increasingly aware about environmental issues, this is the right time to promote ecotourism.

4.2 Benefits for the local communities. Ecotourism can play a very significant role in reducing the dependence of local communities (both forest dwelling and forest dependent) on the forests. Setting up of an ecotourism unit would not only provide them with a means of employment at the unit itself, but would also make them stakeholders in the financial progress of such an enterprise. The Ecotourists would also constitute a readymade markets for NTFPs such as honey, charoli dhawada gum and other itemsd such as embroidery products, local handicrafts etc., at their door steps. High quality micro enterprises such as poultry farming, vegetable supply units could also be set up and centered on the ecotourism unit. Such a Participatory Ecotourism Strategy (PES) would not only cut operational costs for the ecotourism unit but would at the same time reduce the traditional dependence of the local communities on the adjoining forests by providing an alternative source of livelihood. In addition to the above, ecotourism could be used as an effective communication and extension tool to convince the local communities and especially the children therein about the benefits of conserving the forests and natural ecosystems.

Local tribal youth will be selected and training will be given to them on ecotourism and related topics like identification of birds, animals, flora and other important features that are seen during the tour. The traditional knowledge of the tribal youth will also be utilized during the tour.

4.3 Benefits for the Forests and the Forest Department: By providing the local people with alternative sources of income, ecotourism would drastically reduce the biotic pressure in the region which would automatically lead to greater habitat improvement. Other habitat improvement work such as cleaning weeds for making view lines, creating salt pits for the wild life etc. would be mutually beneficial for both the forest and the Ecotourists. The unit operates and the visiting Ecotourists would also back up as eyes and ears of the forest department in curbing all illegal activities such as felling, poaching etc. The forest department would also get an opportunity to educate the city dwellers, villagers.

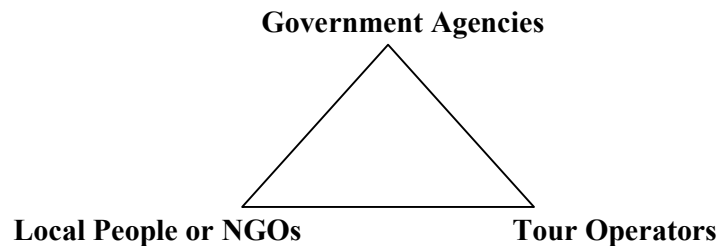
The forest department has hitherto largely been perceived as far removed from the general public. Ecotourism is the best way in which the public can be made aware of the pivotal and difficult role that is played by the forest department in conserving

India's forests. This would in turn lead to much greater appreciation of Forest department and increase the importance that is attached to it.

SECTION-5: MAJOR PLAYERS IN ECOTOURISM:

Major players in the formation of eco tourism triangle are:

1. Local people and NGOs.
2. Government Agencies.
3. Tour Operators.



The purpose of this conceptual frame work with in which the ecotourism should take shape in field is to ensure that protected areas are in a position of authority with ecotourism growth. Ecotourism will be a successful industry only if natural resources are protected. And natural resources will be best protected of there is a strategy frame work in place and park staff and local communities understand the concept and take a lead role in the process. One important measure of both the success and sustainability of ecotourism is the management of visitor impacts to ensure the long term protection of natural and cultural resources, as well as continued visitor enjoyment and use.

5.1 ECOTOURISM COMPLEX- Objectives / Purposes / functions:

1. To provide eco friendly infrastructure preferably on the fringes of wild life protected area which takes care of minimum lodging and boarding facilities in pucca houses, huts, machans and tents as per requirements of the tourists.
2. To provide minim-libraries to enable visitors to spend their time usefully and elicit support for protection of wild life.
3. To provide indoor games like carom and chess for the entertainment of visitors.
4. To earn revenue for the State Government.
5. To provide income to local people by employing them as guides, watchers etc.
6. To facilitate sale of locally made crafts to tourists.

7. To impart education on nature conservation.
8. Lastly, to facilitate all round development.

SECTION-6: ECOTOURISM POTENTIAL OF DHULE FOREST DIVISION:

Dhule Forest Division has very good ecotourism potential. The division has substial tribal population, mainly Bhils, Pawaras, koknis etc. The division has about 191756.850 hectares of forest area mainly teak and Anjan bearing forests. The following sites have been identified and listed below that have great potential and resourceful to make ecotourism a success in Dhule Forest Division.

1. Fort Laling
2. Nageshwer Temple
3. Aner dam and
4. Aladari Temple and

are the most appropriate sites, having potential for eco-tourism. Further, if more sites are identified having potential of Eco-tourism, the same shall be developed by following guidelines, laid in this chapter.

Laling Qila ([Marathi](#): लळिंग किल्ला, [Hindi](#): लालिंग क़िला) is a small fort ([qila](#)) situated in the present day [Dhule district](#) of [Maharashtra](#) state in [India](#). The fort is situated on top of Laling hill about 9.65 km (6.00 mi) south of [Dhule](#) city. It was one of the important forts in the [Khandesh](#) region during the time of the Faruqi Kings.

It is a place of considerable antiquity and the fort is supposed to have been built during the reign of the first of the Faruqi Kings. The fact that this fort and not that of [Thalner](#) was granted by Malik Raja (1370-1399) to his eldest son would show that Laling was his chief fort. It was in this fort that Nasir Khan and his son Miran Adil Khan were besieged in 1437 by the [Bahamani](#) general till they were relieved by an army advancing from [Gujarat](#). Early in the seventeenth century it is mentioned more than once in connection with the movements of the [Mughal](#) troop's [Deccan](#) campaigns. In 1862, the fort is described, as strongly situated with very few defenses left.

Around the fort is a small village called as Laling village with 1,549 inhabitants in 1961. Laling besides the fort has two [Hemadpanthi](#) temples in dilapidated condition. There is also a mined *hemadpanti* well. Presently the fort is in a ruined and collapsed state. It offers a panoramic view of Dhule city.

Nageshwar Mandir: Nageshwar Mandir is located at a distance of about 18 kilometres from Shirpur and at about 2 kilometres from Ajnad village. Festival (Jatras) are conducted on important occasions and this place attracts large number of people. The Temple is an ideal location to provide environment education and awareness to common people. An Eco-development programme should be taken up around the Temple area. The surrounding areas should be planted with shade providing trees and benches for pilgrims' should be provided. A biodiversity centre, medicinal plots, bird watch tower, natural meditation centre and plantation can be created around the temple area. These would educate people about the plant species and its relationship with the religion.

Aner Dam: Aner Dam is located closed to Shirpur town. These are excellent water bodies for attracting water birds and are an ideal location for bird watchers. Fruit bearing trees of different species (bor, pimpal, umbar, peru etc.) should be planted around the dam area, so that fruits are available for the birds round the year and the dam site can become major bird attracting place for both water The dam is having large water bodies and ideally situated for boating. In consultation with dam authorities, boating should be promoted.

Aladari Temple: The famous Kanhaiyalal Maharaj temple at Amali, Sakri taluka is 40 km (25 mi) away from Sakri towards Gujarat. The shrine is dedicated to Lord Vishnu or [Kanhaiyalal Maharaj](#).

6.1 RESOURCES REQUIRED FOR DEVELOPMENT OF ECOTOURISM / FUTURE COURSE OF ACTION:

The Deputy Conservator of Forests should take initiative to prepare plans and estimates for the developmental activities at these palaces of interest and submit the estimates to Forest Department, District Authorities or Maharashtra Tourism Department Corporation for resources. In ecotourism, it is a onetime capital investment, provides platform re-triggers multi dimensional activities in these palaces of interest. While enabling such facility, care needs to be taken that under no circumstances, violation of the Forest Conservation Act, 1980 and orders of Honorable Apex Court is made. Particular attention to ensure that facilities like toilets and others, need to be stationed outside the forest areas. Unless the environment is safe guarded, eco tourism is in danger of being a self destructive process, destroying

the very resource upon which it is based. Therefore, necessary safeguard should be sensitized about the protection of environment. The ecotourism should not be allowed to transform into eco terrorism by neglecting the principles of ecotourism at implementation phase. The aim of ecotourism is to utilize the natural beauty to the optimum while keeping up our social obligation and commitment to conserve and preserve the ecology and environment.

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CHAPTER-XII

MISCELLANEOUS REGULATION

SECTION-1. ROADS AND PATHS.

The positions of the roads are satisfactory, 44.80 K.M Length of forest roads are maintained by the forest Department. In addition to this extraction paths are made where and when necessity arises for the exploitation as well as for afforestation works.

SECTION-2 BUILDINGS:-

Few quarters are available to accommodate the subordinate staff. Most of the staff resides in remote areas to execute their functions. Occasions are common where they do not find a place to live in the villages. The list of existing buildings is attached as appendix No.

SECTION-3- FIRE PROTECTION:-

Fire is most injurious & demaging factor for the forests. The injuries caused by the fires are given in brief in part I species efforts are needed to be taken to prevent & control the forest fires. For the purpose of fire protection the areas are classified as follows.

Class I – Forests protected completely.

This class includes.

- i) All Plantation
- ii) All coupes under work.
- iii) All Govt. timber depots.
- iv) Any other specific areas of special importance ordered by conservator of forests.

All areas under this class will be cleared by cutting of fire line of 6m. Width. These will also be patrolled by fire watchers. Any fire cutting in these areas must be reported to by. Conservator of forest immediately in writing giving the details of areas burned and losses occurred.

Class II- Forests Protected Generally

All other forests not included in the above class are included in the class & protected by cutting outer lines & will be patrolled by fire watchers.

Prevention of fires:-

Most of the fires are caused by human beings either deliberately or by negligence & should be prevented. Following measures be adopted for preventing fires.

A. Clearance of fire lines:-

The following lines will be maintained as lines by clearing them of all growth & kept clean of combustible material during the fire season.

- i) All external reserved forest boundaries to a width of 12 mtrs.
- ii) 6 Meters wild lines around all plantations up to 10 years from the year of planting.
- iii) 6 meters wild lines on both sides of all roads & cart tracks passing through the forests.
- iv) 40 meter wide line on all sides of the timber & fire wood depots.

The cutting & clearing of fire lines should be completed by the end of December & burying should be completed before the end of February

B) Clearing of specific area:-

- i) Specific areas like camping grounds of the passerby & paths used by the villagers should be kept cleared of dry matter & debris.
- ii) The leaf litter below the Moha trees in the flowering season should be cleaned & buried under the supervision of the staff as it is one of the important cause of the forest fires where local people burn the leaf litter to make the ground clean to sweep the Moha flowers & the fire this litter often burns the areas around.

C) Formal & Informal Education:-

- i) Lectures, film shows in schools & colleges about the damages caused by fires can spread the message & create awareness in the young generation
- ii) Earning good will of local people by holding meetings with them can help prevent to a great extent.
- iii) Radio talks about the damage of fires especially in the beginning of the fire season can create an awareness among the local people who will take care of not causing the fires by negligence.
- iv) T.V advertisements about preventing forest fires or protecting forests from fires also can create a mass awareness.

- v) Slide shows in cinema theatres also can create awareness among the public
- vi) An awareness among local people can also be created by arranging stalls in bazaars, melas, and fairs during fire season.
- vii) Putting hoardings with advertisement at strategic places along forest roads for preventing fires can also cause an impact. Such hoarding should be easy to read & placed at eye levels.

D. Control of Fires:-

In spite of taking adequate preventive measure some fires are likely to occur & this to control them following steps should be taken:-

a) Detection of Fires:-

In order to control the fires its early detection is very important. In order to detect the fires a fire watcher should constantly watch the area from fire watch towers round the clock especially during the fire season. The fire watcher should be equipped with binoculars a prismatic compass to check the exact direction of the fire & wireless sets to communicate the fire station. About occurrence of fire if any.

b) Communication: -

The communication to the occurrence of the fire immediately to the fire station is very important. It is best if the fire watch tower is equipped with wireless sets. The fire watcher should communicate the exact location of the fire its extent etc. to the fire station.

c) Fire Suppression:-

On communication to the fire station the fire protection squad which is in readiness with fire fighting equipments like pollaski, showels, water tankers etc. will rush to the site of fire & come in to operation. The fire fighting squads also have fire resistant clothes to avoid accidents.

d) Fire reportion: -

The cause of fire extent of fires & damage caused by fire should immediately be reported to the Dy. Conservation of Forest who should keep the record of fires.

e) Protection of the offender: -

The offender in most of the fire cases becomes at large after lighting or causing fires & hence it is of utmost importance to get the offender by keeping vigilant. The offender thus found should be promptly prosecuted & the news about such prosecution should be given due publicity which will have its impacts on the offenders.

f) Action against dereliction of duty & rewards:-

The staff found negligent about their duties in Prevention & control of fires should be punished & at the same time those who prevented fires should be suitably rewarded.

SECTION 4 LEGAL PROVISIONS:-

There are elaborate legal provisions given in the various acts & rules which are listed below.

A. Provisions contained in the FSI 1927:- The various legal provisions to protect the forest from fire are contained

SECTION 5 RANGES ROUND AND BEATS:-

There are eight ranges, Thirty Two and One Hundred Nineteen Dhule Division distribution of number of rounds and beats is given below –

S.No.	Name of Range	No. of Rounds	No. of Beats
1	Dhule	5	21
2	Shindkheda	4	14
3	Shirpur	4	14
4	Sangvi	4	15
5	Boradi	4	13
6	Sakri	3	12
7	Pimpalner	5	19
8	Kondaibari	3	11
	Total	32	119

The detailed beat list is given in the Appendix of No. XII At present Dhule range covers the forests of Dhule and Shindkheda Talukas. It is very difficult to protect and manage the forests which are spread over two talukas by a single Range Forest Officer. Recently 6939.60 Ha. Of forests I/C of R.D. and non forest land were transferred to Dhule Division after afforesting the area by watershed Management and Planning Division. All these areas are scattered in small patches and are nearer to villages. These areas were afforested to serve as the watersheds of river Panzara, Bori

and Amrawati in addition to this 1314.6 Ha. of forest area already exists in Shindkheda Talukas so the total area comes to 8245.044 Ha. to protect and manage such a large area the existing staff of Shindkheda taluka i.e. one Round officer and 3 Beat Guards is in adequate. Hence it is proposed to carve out a new range for Shindkheda Taluka with the following staff for better protection and management of the forest.

S.No.	Name of Post	No.
1	Range Forest Officer	1
2	Forester	3
3	Beat Guard	11
4	Office Guard	2
5	Accountant	1
6	Clerk	1

The proposed Rounds and Beats are as below:-

S.No.	Name of Round	Name of Beat
1	Shindkheda	Shindkheda
		Khalane
		Chimthane
2	Dondaicha	Karle
		Viskran
		Salve
3	Lamkani	Lamkani
		Burzad
		Mehergaon
		Nimdale
4	Songir	Songir
		Dangurna
		Vadel
		Nagaon

SECTION 6 - FOREST PROTECTION & JOINT FOREST MANAGEMENT:-

The forest of this track are degraded basically by three factors, illicit cutting for timber and fuel wood illegal grazing and encroachments. Illicit cutting for timber by the local people is not very common & is for making quick & easy money. Encroachments on forest lands are also on the rise due to regularization in the past.

These are to be curbed by using force of law. The remaining two problems of illicit cutting for fueiwood & illicit grazing can be controlled if the needs of the local

people for these commodities are fulfilled. Adequate provisions for supply of these commodities have been made in the Afforestation, kuran & Silvipastures working circle of this plan.

The people in and around the laling village are motivated & are protecting laling kuran from fire illicit cutting & illicit grazing. This message needs to be spread over other areas & people need to be involved in the protection & management of the forests. The areas in the silvipasture working circle are ideally suitable for JFM as they can supply fodder & firewood to the local people.

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CHAPTER-XIII

CONTROL AND RECORDS

SECTION-1: CONTROL FORMS:

The record of all operations carried out according to prescription of the plan will be maintained as per standing orders no.24 Chapter X issued by the Chife Conservetor of Forest, Maharashtra state pune Dt.30.1.1967 Two set of the control foresm are to be maintained. One set is kept in divisional office & other set the flying set is to be sent annually to Dy Conservator of Forests working plan for scruitiny before first of October every year. After making annual entries. All entries showing deviation of prescription will be underlined red. Dy. Conservator of Forests working plan will scutinize the entries & sent it to Consevator of Forest Dhule Circle with his remarks. Conservator of Forest circle will send his remarks to Conservator of Forest. The working plans Circle. Pune before 1st of February. The Consevator Forest Working plans will Forward them to Chif Conservator of Forests (Production) for persual & Orders where required as per the produce in working plan code.

The prescribed proforma of control form is given in the Appendix No.-----

SECTION-2 COMPARTMENT HISTORIES:

The Compartment histories will be maintained in form Nos.1 to 5 as given in Appendix ----. Each compartment will have a separate file for its records. Form No.01 has been written for each compartment during the preparation of this paln typed copies will be supplied to DCF Dhule. One copy of it will be kept in the Division Forest Officer & other in the Range Officer. Every year in july the RFO will fill in the details in compartment history forms & submit it to DCF after scrutiny by ACF one copy will be filed in the divisional compartment history file & another copy will be returned to RFO.

SECTION-3: DIVISIONAL JOURNALS:

Some Divisional Registers should be maintained by the division office for control & records. These are as follows.

1. Nursery Register.
2. Plantation Register.

3. Annual plan of operations.
4. Building registers.
5. Register of offence cases.
6. Any other register, which DCF may desire to have in his office.

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CHAPTER-XIV
FINANCIAL FORECAST AND COST OF THE PLAN

SECTION-1: EXPECTED YIELD.

257. A rough estimate of expected annual yield of various products is given below.

S.No.	Kind of Produce	Anticipated Quantity
1	Teak Timber	60 Cum.
2	Misc timber	290 Cum.
3	Firewood	1000 Cum.
4	Bamboo	200000 No.

SECTION-2 : EXPECTED REVENUE:-

258. Due to unstable marked trends it is not possible to forecast the expected annual revenue is given in the following statement.

S.No.	Kind of produce	Anticipated revenue Rs.
1	Teak Timber	300000
2	Misc timber	290000
3	Firewood	150000
4	Bamboo	1000000
5	Grass & Grazing	100000
	Total	1840000

SECTION-3 ANNUAL EXPENDITURE ON THE PLAN:-

Annual expenditure on implementation of the plan is roughly Rs.5 crores.

SECTION-4 : EMPLOYMENT GENERATIONS:-

The implementation of the prescription will generate roughly 10 lakh mandays annually.

SECTION-5 : COST OF THE PLAN:-

The approximate expenditure on the preparation of this is Rs 25 per Hector.

EXECUTIVE SUMMARY OF WORKING PLAN OF DHULOE FOREST DIVISION

(1) AREA DEALT WITH:

This Working Plan deals with the entire reserved forests, protected forests and unclassed forests of Dhule Forest Division of Dhule Forest Circle. The total forest area of the division is 1911.351 sq.kms. The area is spread over in four, namely Sakri, Shirpur, Sindhkheda and Dhule talukas of Nandurbar district. The Divisional headquarter is situated at Dhule. The present division came into existence after reorganization of the then North Dhule Forest Division and West Dhule Forest Division w.e.f. 01.01.2008.

The division is divided into eight territorial ranges namely Shirpur, Sanghvi, BHoradi, Sindhkheda, Dhule, Sakri, Pimpalner and Kondaibari.

The area covered under this plan includes Shirpur, Sanghvi and Boradi ranges of the then North Dhule Forest Division and Sakri, Pimpalner, Dhule, Sindhkheda and Kondaibari ranges of the then West Dhule Division. The Working Plan of the then North Dhule Division (R.L.Chowdhary's plan 1970-71 to 1989-90), comprising now of Shipur, Sanghvi and Boradi ranges of present Dhule Forest Division, expired in the year 1990. The working plan the then West Dhule Forest Division (S.H.Patils plan)1997-98 to 2006-07, comprising now of Sakri, Pimalner, Dhule, Sindhkheda and Kondaibari ranges of present Dhule Forest Division expired in 2007. The range-wise forest area presently under the charge of Dhule Forest Division (in sq.kms) is as follows:

Sr.No.	District	Taluka	Range	Reserved Forest (in sq.km.)	Protected Forest (in sq.km.)	Unclassed Forest (in sq.km.)	Total Forest (in sq.km.)
1	Dhule	Shirpur	Shirpur	204.825	00	0.05	204.875
			Sangvi	239.790	00	00	239.790
			Boradi	245.500	00	00	245.500
		Shindhkheda	Sindhkheda	151.572	00	32.301	183.873
		Dhule	Dhule	304.665	1.074	0.098	305.837
		Sakri	Sakri	212.908	00	1.395	214.303
			Pimpalner	288.675	0.300	00	288.975
			Kondaibari	228.198	00	00	228.198
Total for Division				1876.133	1.374	33.844	1911.351

(2) **FLORA AND FAUNA**

Forest Types (classification as per Campion & Seth)

Group-5- Tropical Dry Deciduous Forest.

Sub-Group-5A-Southern Tropical Dry Deciduous Forest

Forest Type-

(i) SAC1- Dry teak bearing forest.

(ii) SAC1b- Dry teak forest.

Sub-group-5A C-Southern dry mixed deciduous forest.

Degradation stage- 5/DSI-dry deciduous scrubs.

Edaphic stage-5E2-Viswellia forest.

5E4- Hard wick forest.

Primary Serial type- 4E Tropical Riparian Fringing Forests.

Dry riverain forest RS1

Group-8-Montane Subtropical Forest.

Sub-group-8A- Southern subtropical broad level hill forest.

The tract dealt with is neither rich in variety nor rich in number as far as wildlife is concerned. The tract has Aner Dam Sanctuary.

(3) **PREVIOUS PLANS**

(a) **R.L.Chaudhari's Working Plan (1970-71 to 1989-90)-**

The Working Plan of the then North Dhule Forest Division (R.L.Chowdhary's plan (1970-71 to 1989-90), comprising now of Shirpur, Sanghvi and Boradi ranges of present Dhule Forest Division, expired in year 1990. The working plan consisted of following Working Circles:-

(i) **Protection Working Circle:-** The hilly compartments containing more than 25 degree slope were brought under this working circle.

(ii) **Selection-Cum-Improvement Working Circle:-** The hilly compartments which were not included in the Protection Working Circle, were brought under this working circle.

(iii) **Conservation Working Circle:-** All better gully forests were brought under this working circle. These forests were mostly in plains with good density and with site quality III.

- (iv) **Coppice with Reserve Working Plan:-** The greater portions of Shahada range were brought under this working circle.
- (v) **Afforestation Working Circle:-** An areas of 14372.55 ha. was included in this working circle and an intensive afforestation works were prescribed. A rotation of 30 years was fixed.
- (vi) **Kuran Working Circle:-** Three kurans namely Sonabardi, Dahiwad and Mhais were included in this working Circle. Plantation of fodder grasses in suitable fenced areas of 4 ha. each was annually prescribed.
- (vii) **Toranmal Park Working Circle:-** An area of 1466.42 ha. on Toranmal plateau was included in this working circle. The object was to beautify this plateau area by planting ornamental species and to preserve its existing flora.
- (viii) **Bamboo (overlapping) Working Circle:-** Extraction of bamboo on a 3 year rotation was proposed, coupled with bamboo under-planting in suitable patches.
- (ix) **Karayee (overlapping) Working Circle:-** To regulate Kadai gum tapping in the area, kadai (overlapping) Working Circle was proposed. Blaze method was proposed to tap the gum. Each coupe was to be worked for 3 years and was to be given a rest for the next 3 years.

(b) S.H.Patil's Working Plan (1997-98 to 2006-07):

The working plan the then West Dhule Forest Division (S.H.Patil's plan (1997-98 to 2006-07), comprising now of Dhule, Sindhkhedra, Sakri, Pimpalner and Kondaibari ranges of present Dhule Forest Division expired in 2007, had following working circles:

- (i) **Protection Working Circle:-** The area spreaded along the precipitous slopes of the ridges and on the spurs of Sayhadri range. The area was required to be protected from felling, grazing and fires.
- (ii) **Selection-Cum-Improvement Working Circle:-** This Working Circle included the best forest areas of Nawapur and Chinchpada ranges, having matured / over matured trees. The object of that working circle was the removal of matured and over matured trees from the forest and to make space for natural regeneration to grow and to make overall improvement in the stock.

- (iii) **Improvement Working Circle:-** All the areas of Hill block and all the areas of Umarpata block were included in this working circle. It spreads over the Nawapur, Chinchpada and Nandurbar ranges. These areas were capable of producing good quality timber. It aimed at improvement of a single coppice shoot of valuable species, along with gap-felling and for improvement felling of valuable species in the standing crop.
- (iv) **Afforestation Working Circle:** The barren and degraded forest areas, nearer to habitations are clubbed together, to constitute this circle. It aims to meet the fuel wood demand of the areas, by raising fuel wood plantations, with a short rotation along with to bring back the vegetal cover in the area. These areas were spread over the entire erstwhile West Dhule Division.
- (v) **Kuran Working Circle:-** These areas were to be managed as traditional grass reserves and were required to be planted with improved varieties of grasses. The grass was to be disposed off preferably by permit system. The areas were treated during this plan period was 580.81 ha.
- (vi) **Silvipature Working Circle:-** These areas were with very little soil depth, and were unable to support tree crop, but were potentially good for raising grasses and for shallow grown trees.
- (vii) **Bamboo (overlapping) Working Circle:-** In order to improve the stocking, density and to conserve soil and moisture of the area, bamboo under planting in Hill block area was proposed.
- (viii) **Wild Life (overlapping) Working Circle:-** This working circle includes the entire area of the Division and it aims at improvement of natural habitat of wild life.
- (ix) **Non-Timber Forest Produce (overlapping) Working Circle: -** There are many products like, tendu leaves, gum, moha flowers and fruits etc. which are in great demand and needs proper harvesting techniques through research.

(4) WORKING CIRCLES, PROPOSED IN PRESENT WORKING PLAN:

In accordance with the general objects of management, the following Working Circles are proposed to be constituted:-

- (1) Protection Working Circle.
- (2) Improvement Working Circle.
- (3) Afforestation-Cum-Soil and Moisture Working Circle.

- (4) Fodder Working Circle.
- (5) Encroachment (overlapping) Working Circle.
- (6) Bamboo (overlapping) Working Circle.
- (7) Joint Forest Management (overlapping) Working Circle.
- (8) Wildlife (overlapping) Working Circle.
- (9) Eco-tourism (overlapping) Circle.

(5) PERIOD OF PLAN:

The Plan is proposed for 10 years, from the year 2016-17 to 2025-2026 or from the date of sanction of the plan.

**COMPLIANCE OF SUGGESTIONS
AS PER STATE LEVEL MEETING, HELD ON 10.6.2015**

Sr. No.	Suggestions	Compliance
1.	Shri A.K.Saxena, PCCF (HOFF) suggested that actual encroachment details should be incorporated in Working Plan. He instructed Dr. Sunita Singh, CCF(T) Dhule to provide compartment-wise data of encroachment to CF, WP, Dhule.	DCF (T) Dhule submitted the figures of recorded encroachments and note on Joint Forest Management Committees in State Level Meeting on 15.7.2015.
2.	Committee desired and approved that Joint Forest Management (overlapping) Working Circle shall be included in Working Plans.	Accordingly Joint Forest Management (overlapping) Working Circle is included in present Working Plan.
3.	Committee suggested prescription to be modified in various Working Circles, especially Protection and Improvement Working Circle.	Accordingly, changes are made in Working Circle.
4.	On the suggestion of Dr. Sunita Singh,CCF(T) Dhule that yield of N.T.W.P. is negligible and this Working Circle shall be deleted from Working Plan. The Committee approved it.	Accordingly, N.T.F.P. (overlapping) Working Circle is omitted from present Working Plan.
5.	On the suggestion of Dr. Sunita Singh, CCF (T) Dhule, it has been decided by Committee to include an overlapping Working Circle on Eco-tourism.	Accordingly, the Eco-tourism (overlapping) Working Circle is included in this Working Plan.

COMPLIANCE OF SUGGESTIONS
AS PER STATE LEVEL MEETING, HELD ON 15.7.2015

Sr. No.	Suggestions	Compliance
1)	<p>The revised draft Working Plan, as per decision of Committee on 10.6.2015 was presented-</p> <p>(a) DCF (T) Dhule submitted the reported figures of encroachment before the Committee and stated that the said figures are actual figures of encroachment. The Committee suggested that said figures of encroachment shall be treated as final figure of encroachment, to be included in proposed Encroachment (overlapping) Working Circle</p> <p>(b) Committee instructed DCF (T) Dhule to give detailed note on proposed eco-tourism site, to be incorporated in Eco-tourism (overlapping) Working Circle in English to C.F.W.P., Dhule latest by 30.07.2015.</p>	<p>Accordingly, Encroachment Management (overlapping) working Circle with reported figures of encroachment is incorporated in present Working Plan.</p> <p>Accordingly, “Eco-tourism Management (overlapping) Working Circle” is incorporated in present Working Plan.</p>

Correction Of Queries of DWPR Dhule Forest Division

No. of DWPR	Query	Compliance	
120	Section-9: Cleaning: All climbers, which are not of ecological and economical value, will be cut.	List of climbers which are to be retained and which are to be cut, should be mentioned.	There are totally 8 types of climbers predominately existing in this forest area of this division. Out of these, chilhar (Ceasa lpinia Spiaria) and Vasan (Cocculus villo sus) will be removed and Remaining 6 Climber which have medicinal properties will be retained.
125	Section-7:Method of treatment: Para 7.4 Marking Rule : All climbers will be cut.	Climbers which need to be retained should be mentioned.	The climbers which are to be retained are as Under. 1.Gunj (Abrus precatorius) 2.Gulwel (Tinosporia cordifolia) 3.Kadu - Karand (Dioscorea bulbifera) 4.Kuhili (Mucuna pruriens) 5.Sagargota (Caesalpinia bonducella) 6.Shatavari (Asparagus recemosus)
148	Section-5:Method of treatment:(A) Encroachment Regulation (i) Survey and demarcate the area which has been approved by the competent authority as eligible for regularization and hand over the same to eligible encroachers.	The world eligible for regularization and hand over the same to the eligible encroachers should be removed and substituted by---	Necessary correction as directed has been done in the plan and substituted by suitable Recommendation
153	Bamboo (Overlapping) Working Circle No post harvesting operations are mentioned.	Post harvesting operations if not to be taken up, may be mentioned.	Post harvesting operations are prescribed in the concerned working circle.

No. of DWPR	Query	Compliance	
162	Wildlife (Overlapping) Working Circle	Wildlife (Overlapping) Management Circle should be mentioned..	The Plan has been prepared as per working plan code 2004 and the plan has been discussed recommended by the State level meeting held on 10.06.2015. The State level Committee has not Recommended such Wild Life (Overlapping) Working Circle.
	Non-Timber Forest Produce	There is no NTFP (Overlapping) Working Circle which is a mandatory Working Circle as per the Working plan Code.	The State Level Committee which was held on 10.06.2015 has omitted the NTFP (Overlapping) Working Circle as per Recommendation of the C.C.F. (T) Dhule. The plan has been prepared as per Working Plan Code 2004. Hence there is no need to include NTFP (Overlapping) Working Circle.

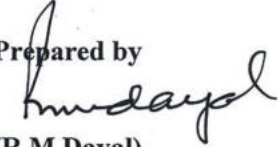
WORKING PLAN FOR DHULE FOREST DIVISION

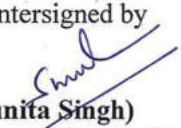
For the period from 2015-2016 to 2024-2025

[Ref.: G.R. Revenue and Forest Deptt. No.MSC-2004/PK/102/F-2/DT.25.6.2004]

With reference to the above Govt. Resolution at Sr.No.1, the Draft Working Plan for Dhule Forest Division was discussed by the State Level Committee under the Chairmanship of Principal Chief Conservator of Forests, (HOFF) M.S. Nagpur on 15.7.2015 and was approved by the Committee constituted by the State Govt. as below:

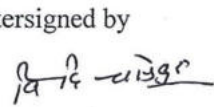

(S.G.Halmare)
Dy. Conservator of Forests, Division, Dhule

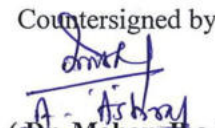
Prepared by

(R.M.Dayal)
Conservator of Forests, Division, Dhule

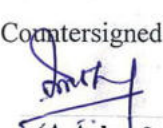
Countersigned by

(Sunita Singh)
Chief Conservator of Forests (Territorial)
Dhule.

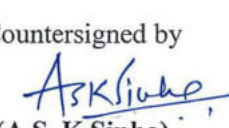
Countersigned by

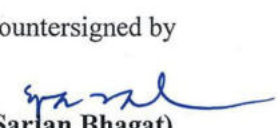
(Annasaheb Misal)
Collector Dhule

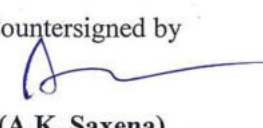
Countersigned by

(Dr. V. D. Chafekar)
Addl.Principal Chief Conservator Forests,
Working Plan (W), Pune

Countersigned by

(Dr. Mohan Jha)
Addl. Principal Chief Conservator Forests. (Addl charge)
(I.T.&P.) M.S.Nagpur.

Countersigned by

(A.Ashraf)
Addl. Principal Chief Conservator of Forests
(NTPF, Monitoring & Evaluation)
Maharashtra State, Nagpur

Countersigned by

(A.S. K.Sinha)
Principal Chief Conservator of Forests,
(P & M), M.S.Nagpur.

Countersigned by

(Sarjan Bhagat)
Principal Chief Conservator of Forests,
(Wild Life), M.S.Nagpur

Countersigned by

(A.K. Saxena)
Principal Chief Conservator of Forests,
(HOFF), M.S.Nagpur.



PART-I

SUMMARY OF FACTS ON WHICH PROPOSALS ARE BASED



PART-II

FUTURE MANAGEMENT

DISCUSSED AND PRESCRIBED



ECO-TOURISM – NAGESHWAR, TAL.SHIRPUR, DIST. DHULE



ECO-TOURISM – ALALDARI, TAL. SAKRI, DIST. DHULE.

SANTTUKARAMVANGRAMYOJANA

JFMSAMITELAMKANI, TAL.DIST. DHULE RECEIVING STATE LEVEL FIRST PRIZE





FODDER WORKING CIRCLE AT LALING, TAL. DIST. DHULE



FODDER WORKING CIRCLE AT LALING, TAL. DIST. DHULE



WILD LIFE IN DHULE FOREST DIVISION



WILD LIFE IN DHULE FOREST DIVISION



ECO-TOURISM AT LALING, TAL. DIST. DHULE



ECO-TOURISM AT LALING, TAL. DIST. DHULE