Government of Maharashtra

Forest Department

# Kanhargaon Wildlife Sanctuary

# Management Plan

(2022-23 to 2026-27)

**Principal Conservator of Forests (Wildlife)**
**Maharashtra State, Nagpur**

# Kanhargaon Wildlife Sanctuary

# Management Plan

(2022-23 to 2026-27)

Prepared By

Sevanivrutta Van Karmachari Sangh, Maharashtra

## Executive Summery

The Kanhargaon wildlife sanctuary in the Chandrapur district has 269.402 sq.km notified areacomprising of 18.021 $km^2$ forests from the Central Chanda territorial forest division and 251.381 $km^2$ from Forest Development Corporation of Maharashtra Ltd. Project Division, Ballarshah (FDCM).

Kanhargaon WLS is unique in the sense that it has plantations of teak and non-teak species raised since 1938 to 2020 by the FD and FDCM aggregating 257.73 $km^2$ i.e. 96% of the sanctuary is manmade forests.

This is the first ever plan written and proposes to restore the present highly artificial ecosystem to natural ecosystem to begin with. This a term of five years as against the regular practice to plan for 10 years to facilitate an early review and proceeds further in more diverse vegetation that is condusive, supportive and beneficial to the tiger in particular. The process is protracted and involves long term monitoring, testing the strategies engaged with corrections based on the response of the native wild animals—larger mammals and birds to start with.

To start with only two zones ; the Restoration Zone and the Tourism Zone. To achive restoration towards more natural mixed vegetatin, teak plantations upto 45 years age has undergo thinning in both zones, as per the already prescribed treatments; besides harvesting of bamboo crop. Field visits and observations by the plan team revealed that old and thinned plantations growth has supported regeneration of several native plant species. Analysis of data sets over the period that indicate areas that exhibit progress of vegetation growth of native plant species and occurance of wild animal species to made guiding for further management interventions possibly to constitute the Core Zone at appropriate time in future.

The thinnings in plantations yield an annual revenue in the region of 10 crores including bamboo which will not be treated as commercial gain but proposed to be used for management for the sanctuary. This will be in compliance with laws, regulations or orders . A separate account is recommended in Foundation of the Tadoba-Andhari Tiger reserve for this purpose.The annual thinning and bamboo exploitation cost will be Rs. 4 crores.

Since notification of this PA, all working by FDCM has been stopped and management is in the hands of staff who are not trained to handle wildlife. This can not be allowed to continue as the prudent management practice. An urgent decision is equired to put the sanctuary under wildlife trained personnel. This being the new PA, 165 staff posts in total 18 cadres are recommended with salaries requirement of Rs. 5.5 crore required to be borne by the government.

There are other management strategies proposed for habitat improvement and several other administrative and conservation operations like creation of necessary infrastructure like offices, accommodation, logistics, forest and wildlife protection related measures, eco-development interventions, research, monitoring and training activities; that will cost Rs. 12 crore per years.

**Mr. Sunil Limaye, IFS**

**Office of**
**ThePrincipal Conservator of Forests (Wildilfe)**
**Maharashtra State , Nagpur**

## Preface

To be written by PCCF (WL) MS Nagpur

# FOREWORD

The Kanhargaon wildlife sanctuary in the Chandrapur district notified over an extent of 269.402 $km^2$ vide Notification No. WLP-0614/CR-153/F-1 dated 15th March 2021 of Maharashtra Revenue and Forest Department, which includes 18.021 $km^2$ forest tract carved out from the Central Chanda territorial forest division and the rest of 251.381 $km^2$ belonging to the Forest Development Corporation of Maharashtra Ltd. Project Division, Ballarshah (FDCM). Among all the PAs across the country, Kanhargaon is unique in the sense that it has plantations of teak and non-teak species raised since 1938 to 2012 by the forest department and from 1970 to 2020 by the FDCM under various schemes aggregating 257.73 $km^2$ i.e. almost 96% of the sanctuary.

The management plan thus has proposed an individualized approach in an attempt to move from a highly artificial ecosystem to that which can get the tract as near as possible to the concept of natural ecosystem. This first plan would have a term of five years. The plan proposals are not under any delusion. The process is going to be protracted as monitoring and testing the strategies progresses over the years, obviously with corrections that would need to be made in the roadmap on the basis of the change in vegetation and response of the native wild animals—larger mammals and birds to start with. The approach is placing its trust on three components.

It is proposed to have only two zones giving a miss to the *sine qua non* of all protected areas—the core zone. The two zones would be the Restoration Zone and the much smaller Tourism Zone. (i) All teak plantations—not those of non-teak—in both zones would undergo thinning as per the sequence and treatment due except those that are 45 years old and older. The latter would have smaller numbers of trees with relatively large diameters. Four decades and more of growth would have supported regeneration of several native plant species thus favouring a march toward 'naturalness' (ii) Using the protocol established by NTCA-WII, transects would be run in all plantations at prescribed intervals and length to asses vegetation and wild animal evidence (various signs). There is a guide for the purpose. Once the first set of monitoring is concluded the next repeat would be after a period of four years (iii) Analysis of differences between the first and the second data sets are expected to indicate areas that exhibit progress of vegetation succession of native plant species and enhanced evidence of several wild animal species. Such areas would be clubbed together to constitute the Core Zone i.e. at the end of 5 years coinciding with the term of the first management plan. The rest of the area between such Core and the Tourism Zone would be demarcated as the Restoration Zone. Thinnings are expected to continue across all zones during the subsequent plan as indicated under the foregoing.

The current data of FDCM indicates that thinnings in plantations yield an annual revenue in the region of 4 crore. This amount as a result of the recommended operations will not be treated as commercial gain or revenue. The amounts would be ploughed back to sustain management expenditure for the sanctuary. This will not flout any laws, regulations

or orders. For the purpose a separate account would have to be created within the Foundation of the Tadoba-Andhari Tiger reserve for the intended appropriation. Salaries of the managerial force would have to be provided by the government separately. To make this arrangement operational the sanctuary management would need to moot an appropriate proposal to the competent authority.

There would be other strategies for habitat improvement and several other managerial operations as contained in the management plan including some that are zone specific.

**Vishwas Sawarkar**
**(Team Leader)**

**ACKNOWLEDGEMENT**

Sevanivrutta Van Karmachari Sangh (SEVAK) Maharashtra, is obliged to Mr. Nitin Kakodkar, I.F.S., the then PCCF (Wildlife) M.S, Nagpur(Now retired) for entrusting "SEVAK" for the work of Management Plan for Kanhargaon WLS and Mr. Sunil Limaye I.F.S., the seating PCCF (Wildlife) M.S, Nagpur for getting the task accomplished. We are also thankful to Mr. N. R. Pravin, IFS CCF (T) Chandrapur circle, Mr. G. K. Anarse , IFS, R.M. FDCM Chandrapur Region, for providing technical inputs pertaining to local current ground facts, the forestry management issues and several other opportunities and threats that need to be considered for this plan. We are also indebted to Mr. Jintendra Ramgaokar, IFS, Conservator of Forests & Field Director, Tadoba Andhari Tiger Reserve, Chandrapur for suppoting us for timely funding for Management Plan preparation from TATR Foundation.

So also the thanks are due to the following officers and field staff from FD and FDCM divisions from areas of which the sanctuary is constituted and giving us vast amount of information, documents, data, maps, toposheets, etc. and also all help for day to day field work, transport, accommodation and assistance required in the field.

Shri. Arvind Mundhe, IFS, DM FDCM, Central Chanda, Ms. Aaryashree T. IFS, DM, Ballarshah, Shri. Gaurav Patil, RFO Kanhargaon, Shri. Shinde, RFO, Kanhargaon.

The SEVAK Team constituted under the guidance of Shri. V. T. Patki acknowledges contiuous support and guidance, to the Plan Team for successful and timely completion of the investigation and field work and tour to Kanhargaon WLS.

**Team Leader**
**Sevak Sangh, Maharashtra, Pune**

## Salient features of the Management Plan

❖ **MOU**

The work order for this consultancy work was issued by PCCF (WL) MS NAgpur vide No. Kaksh-22(8)/Waji/ PraKra.05/(20-21)/277 /20-21 dtd. 31-5-2021.The Memo of Understanding is drawn between the CCF Chandrapur and "SEVAK" Maharashtra, Pune on 18th June, 2021 for preparation of the management plan for Kanhargaon WLS.

**COMPOSITION OF SEVAK TEAM**

The Management Plan for the Kanhargaon sanctuary for a period of 5 years is prepared by team comprising of following SEVAK Sangh members

1. Shri. V. B. Sawarkar - Team Leader
2. Shri. V. T. Patki – Member
3. Shri. Ajay Pillarisett – Member
4. Shri. S. K. Gawali – Member
5. Shri. S. M. Jagtap – Member
6. Shri. P. K. Kulkarni – Member
7. Shri. S. V. Kumhakarna – Member

Shri. V. G. Davare also contributed in the beginning for some period. The Envision Computer Training Institute, Pune provided support for preparing the computerized report. Shri. S. V. Kumbhakarna being a GIS expert developed various maps incorporated in the plan.

Shri. Vijay Khanke, Shri. D. G. Kundojwar and Shri. Shivaji Bhagat supported by way of collecting and compiling data and information from various offices at Chandrapur.

The following experts outside the Sevak Sangh, whose assistance was also taken . Dr. Umakant Deshmukh, Professor of Botany in the Janta College, Chandrapur rendered help in preparing check list of plants in the Sanctuary. Shri. Abhay Ujagare and his team carried out survey of avifauna, insects and butterflies and the data has given biodiversity of fauna in the Sanctuary. Dr. Jayant Wadatkar from Amravati verified the survey data prepared by Shri. Ujagare and his team and modulated wherever necessary.

**-------0000000----------**

# Abbreviation used

| | |
|---|---|
| 4WD | 4 Wheel Drive |
| ACF | Assistant Conservator of Forests |
| ANR | Aided Natural Regeneration |
| AR | Artificial Regeneration |
| APCCF | Additional Principal Chief Conservator of Forests |
| APO | Annual Plan of Operations |
| BG | Beat Guard |
| C | Centigrade |
| CWLW | Chief Wildlife Warden |
| CFR | Community Forest Rights |
| CF & FD | Conservator of Forests and Field Director |
| CMS / Cms | Centimeters |
| Comptt. | Compartment |
| Dy. CF or DCF | Deputy Conservators of Forests |
| DFO | Divisional Forest Officer |
| E | East |
| EDC | Eco-Development Committees |
| Ha | Hector |
| Kg | Kilogram |
| PT | Plan Team |
| FD / F.D. | Forest Department |
| FDCM | Forest Development Corporation of Maharashtra |
| FG | Forest Guard |
| Fr | Forester |
| FYO | First Year Operation |
| GoI | Government of India |
| GoM | Government of Maharashtra |
| GPS | Global Positioning System |
| GR | Government Resolution |
| Ha. | Hectare |
| JFM | Joint Forest Management |
| JFMC | Joint Forest Management Committee |
| JFMP | Joint Forest Management Programme |
| M | Meter |
| MM/mm | Milimeter |
| MD | Managing Director |
| MoEF & CC | Ministry of Environment, Forest & Climate Change |
| MoU | Memo of Understanding |
| MT | Metric Ton |

| | |
|---|---|
| N | North |
| NA | Not Available / Not Applicable |
| No. or Nos. | Number / Numbers |
| NP | National Park |
| NR | Natural Regeneration |
| NTCA | National Tiger Conservation Authority |
| NTFP | Non Timber Forest Produce |
| PA | Protected Area |
| PPO | Preliminary Year Operations |
| QRT | Quick Responnce Team |
| RF | Reserve Forest |
| R&FD | Revenue and Forest Department |
| RM | Regional Manager |
| RFO | Range Forest Officer |
| RO | Round Officer |
| PF | Protected Forest |
| Sevak | Sevanivrutta Van Karmachari Sangh, Maharashtra, Pune |
| SMC | Soil and Moisture Conservation |
| SqKm / Sq. Km. | Square Kilometers |
| Spp./Spps. | Species |
| Sur. | Survey |
| SYO | Second Year Operations |
| Tal. | Taluka |
| TATR | Tadoba Andhari Tiger Reserve |
| TYO | Third Year Operations |
| VEDC | Village Eco-development Committee |
| W.C. | Working Circle |
| WII | Wildlife Institute of India |
| WLS | Wildlife Sanctuary |
| IVYO | Fourth Year Operations |
| VYO | Fifth Year Operations |

**The Management Plan**
**for The Kanhargaon Wildlife Sanctuary**
**For the Period - 2022-22 to 2026-27**

# Index

Part-I

# Brief History and Past Management

## CHAPTER -I Introduction to the Kanhargaon Wildlife Sanctuary

### 1.1 Notification of the Sanctuary. :-

Kanhargaon Wildlife Sanctuary is declared under Wildlife (Protection) Act, 1972, consisting of the area of the Reserved Forests falling in the Central Chanda Territorial Forest Division and Central Chanda Forest Project Division of Forest Development Corporation of Maharashtra Ltd. of Chandrapur District vide GoM Notification, Revenue & Forest Department, Mumbai No.WLP-0614/CR-153/F-1, dated15th March 2021. **(Appendix-I).**

It extends over 269.402 Sq. Km. area of Reserved Forests inclusive of 10 compartments admeasuring 18.021 Sq.Km. of Central Chanda Territorial Forest Division and 95 Compartments admeasuring 251.381 Sq.Km. of Central Chanda Forest Project Division (FDCM).

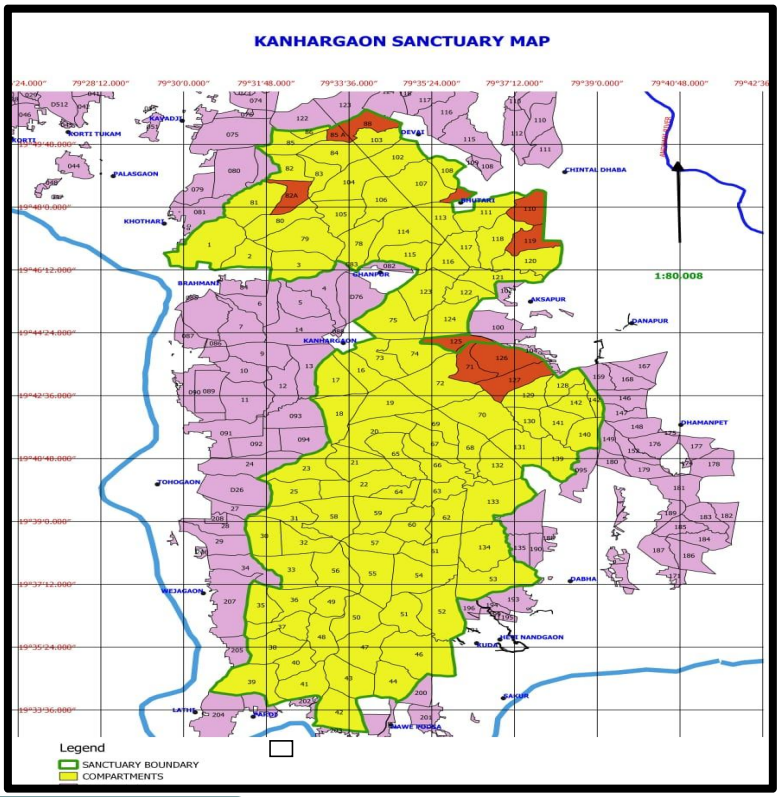



Fig.1-Sanctuary Map

**Comptt. From Central Chanda Forest Division**
**Comptt. From Central Chanda FDCM Division**

## 1.2 Location

The area of Sanctuary is located within the geographic limits of Ballarpur, Gondpimpari & Pombhurna tahasil of Chandrapur district.

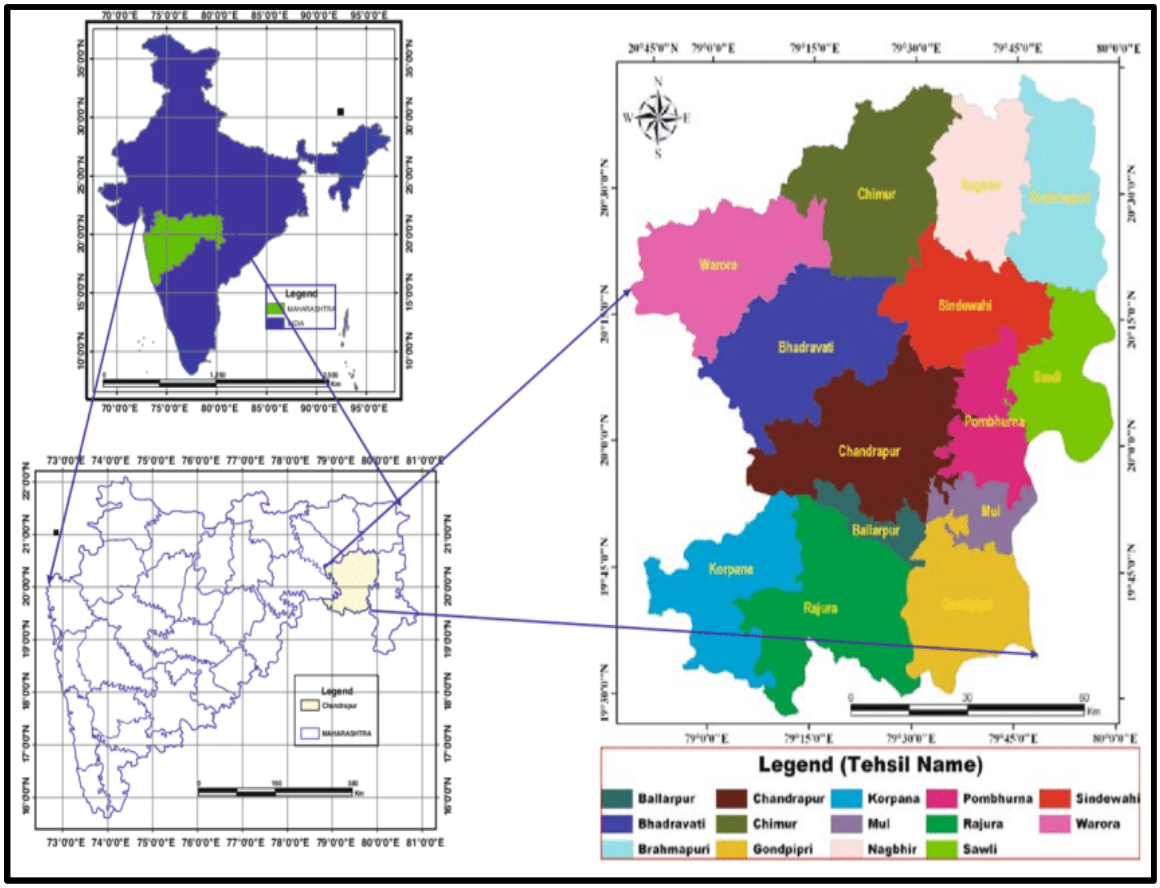



Fig-2 Location Map

It is located partly along the State Highway No.367 from Chandrapur to Allapalli passing through villages Kothari & Aksapur within geographical co-ordinates, longitude 79.4929 E to 79.6536 E and latitude 19.5487 N to 19.8459 N

## 1.3 Approach and Access: -

The approach for Kanhargaon Sanctuary is by Air, Rail and Road. The nearest airport is Dr. Babasaheb Ambedkar International Airport; Nagpur and Railway station is Ballarshah on the Central Railway. The sanctuary is accessible by State Highway from Nagpur, at a distance of 201 Km. & 32 Km from Ballarshah railway station. The important nearby towns are Chandrapur City (District headquarter) 49 Km distant, & 86 km from Asifabad (Telangana State).

**1.4 Statement of Significance: -**

The Kanhargaon Sanctuary due to its proximity to Tadoba-Andhari Tiger Reserve (TATR) and connectivity to the Tipeshwar WLS of Maharashtra and Pakhal Tiger Reserve of Telangana State, Kanhargaon sanctuary has the potential to act as a corridor for tigers and other native wild species including plants. The Reserved Forests of Kanhargaon sanctuary are classified as Southern Dry Deciduous Forests that represent Central India Flora and Fauna. The large mammals present in the area are tiger, leopard, wild dogs(dhole), sloth bear, gaur, sambhar, chital, barking dear, four horned antelope, and wild pig. The sanctuary also has diversity of reptiles and avifauna. It has a good population of butterflies of various species. The south-western portion of the sanctuary has fossils about which greater information is needed. The sanctuary area has extensive teak and non-teak plantations raised by Forest Department and FDCM. Some 96% of the Sanctuary area is covered under plantations mainly from 1970 onwards a few are even older. Monocultures make poor wildlife habitats. A separate strategy is being adopted for habitat improvement.

# CHAPTER-II Background Information and Attributes

### 2.1 Boundaries-

**External**

The external boundaries are detailed under **Annexure I**

The area of WLS is compact and surrounded by forest area with no issues of boundary disputes. The boundaries are well defined and clearly marked by compartment lines, natural streams and nalhas. There are no administrative, legal, ecological or resource use related problems

**Internal: -** The area of Kanhargaon WLS comprises of Reserve Forest areas of Ballarshah, Kothari and Dhaba Ranges of Central Chanda Forest Division of State Forest Department and of Zaran, Kanhargaon, Tohogaon and Dhaba Ranges of Central Chanda Forest Development Corporation of Maharashtra (FDCM)

## 2.2 Geology, Rock and Soil: -

### 2.2.1 Geology: -

The tract represents mainly one type of geological formation viz. Archean, represented by gneiss, schist and granite rocks. Soil along slopes is shallow and having boulders.

### 2.2.2 Rock and Soil: -

Areas in villages North East of Kanhargaon and North of village Aksapur, of Zaran Range are comprised of sedimentary rocks of Purna group. The group is represented by quartzite, limestone and conglomerate formation. Soil derived from this type of rock formation is clay loam and supports medium site quality III to IV(a) forests. Rest of the area of Zaran is composed of the Kampthi series of rocks belonging to the lower Gondwana system. Kampthi series is represented by ferruginous sand stones and clays, both white and yellow. Soil derived is deep, fertile and sandy loam. Soil along slopes is shallow having boulders and supports high quality mixed forest. The soil however being sandy loam, soft and friable, is easily susceptible to erosion wherever the area is subjected to heavy grazing, illicit felling and annual fires. In some patches of this tract, top layer of soil has been eroded due to sheet and gully erosion, rendering the site comparatively less fertile supporting only low quality (III b) forest.

**2.2.3 Fossils: -**

These are basically fossil rocks created over millions of years due to geological transformation. This also includes leaf and wood fossils. The tract west of Kanhargaon, Tohogaon and Dhaba Ranges is covered by the sandstones and clay. The remaining forest area to the East of Dhaba is occupied by the igneous rocks such as gabbro and pyroxenite and gneisses of Pre- Cambrian age. The soil to the west of Dhaba is sandy loam, deep and fertile supporting high-quality mixed forest and that to the North East of Dhaba is clayey grayish and supports medium quality teak forests (II to IVa). Narrow band of lime stone formation belonging to Vindhyan series extend between Dongargaon in the South East to Karanji in the center. Soil is clayey loam of moderate depth and fertile and supports forests of medium quality (III).

**2.2.4 Terrain: -**

The terrain in Ballarshah, Kothari and Dhaba Ranges is mostly flat to gently undulating. Small patches to the North-East and North-West of Dhaba and Kothari Ranges are slightly hilly. The altitude varies from 180 m to 294 m above mean sea level. The hill blocks have Western and Southern aspects and streams drain into the Wardha River. Streams in the North-East drain into Andhari Nala, a tributary of the Wainganga. Terrain together with environmental and physical factors influences the distribution and density of vegetation and habitat use by wild animals.

**2.2.5 Drainage: -**

The tract is interspersed with big and small nalas draining into the Wardha and Wainganga rivers. The important nalas which flow or contain water throughout the year are Upasa and Pilkhana nalas in Dhaba Range; Bhagrati, Bhivkund, Pandharpani, Zaran and Hatti nalas in Ballarshah Range and Dhaba, Jamri, Lahan Zaran and more nalas in Kothari Range. Zaran nalla near Zaran, Math nalla near Kanhargaon, Ambe nalla and Tekkabhatti near Chivanda are prominent nallas In the FDCM areas. Apart from nalas mentioned above, there are a number of seasonal nalas within the tract flowing during monsoon and till the end of February.

**2.3 Climate: -**

The climate is characterized by a hot summer, well distributed rainfall during the south-west monsoon season and general dryness except in the rainy season. Three distinct seasons are recognized.

Hot Season (Summer) :- Summer is mostly hot and dry. It starts from the end of February and continues up to mid of June i.e. onset of monsoon. April and May experience unbearable heat.

**Monsoon Season (Rains)** :- Normally, monsoon breaks by mid June and continues up to October. Average annual rainfall in this tract is 1377 mm.

Cold (Winter):- It starts from November and continues up to the end of February. Winter is fairly cool and pleasant. Occasional showers are received. Frost does not occur.

| Year/Month | June | July | August | September |
|---|---|---|---|---|
| 2017 | 10.7mm. | 378.8 mm. | 124 mm. | 82.3 mm. |
| 2018 | 165.6 mm. | 328.5 mm. | 126.9 mm. | 55.9 mm. |
| 2019 | 128.5 mm. | 365.2 mm. | 499.7 mm. | 206.8 mm. |
| 2020 | 187 mm. | 349 mm. | 260 mm. | 89 mm. |
| 2021 | 306.65 mm. | 477.80 mm. | 185.90 mm. | 185.60 mm. |

Table-1 Rainfall Distribution in Sanctuary Area

**2.3.1 Rainfall PatternandDistribution:**

Records of rainfall for Gondpimpri Station of Central Chanda Forest Division are available from 1975 onward. The annual rainfall varies from 900 mm. to 1600 mm. The following table gives the comparative average rainfall for the respective periods.

Pre-monsoon showers occur in the month of May and the main rainy season starts from June and continues up to October. Average pattern indicates that 86% of the annual rainfall is received during June to October and 14% during pre and post monsoon period. It is obvious that rainfall is not steady for all the years and there are variations from year to year which is the expected norm

**2.3.2 Temperature: -**

Temperature data for any station located in the geographical area of this division is not available. But this tract has the same climatic condition as that of Chandrapur; the abstract of average temperature data for Chandrapur station is produced here.

Table-2 Temperature Data (in $^{0}$C)

| Month | Maximum | Minimum | Month | Maximum | Minimum |
|---|---|---|---|---|---|
| January | 33.6 | 9.7 | July | 35.6 | 22.8 |
| February | 34. | 12.8 | August | 34.4 | 21.8 |
| March | 38.4 | 18.0 | September | 33.2 | 22.1 |
| April | 42.6 | 21.3 | Octomber | 34.4 | 19.9 |
| May | 47.8 | 26.4 | November | 33.0 | 14.1 |
| June | 44.2 | 23.2 | December | 29.5 | 9.8 |

Temperature during summer shoots up fairly high. The average maximum temperature reaches up to 47.8$^0$C. The maximum & minimum temperature recorded is 47.8$^0$ C and 9.7$^0$ C respectively.

**2.3.3 Humidity: -**

The average monthly relative humidity percentage recorded at Chandrapur for the period from 1881-2010 received from INDIA METEOROLOGICAL DEPARTMENT, Nagpur Region, Nagpur suggest that the air is generally dry except during the South West monsoon season when the humidity in the afternoon exceeds 70%. The summer months are driest when the relative humidity in the afternoon varies between 20% to 25%.

**2.3.4 Wind: -**

From October to March North-Easterly and from April to September South-Westerly winds prevail. Thunder storms occur in all the months, their incidence being the highest during the monsoon season and lowest during the winter season.

**2.3.5 Drought and its periodicity: -**

Drought like conditions is felt during summer with decline of water availability

**2.4 Water sources: -**

Tanks, wells and bore wells form the main sources of water supply. The Wardha is a perennial river a source of water supply to the villages towards west of Kanhargaon Sanctuary. Even drinking water is drawn from nalas. Scarcity of water is felt during summer when water table recedes and wells and tanks dry up. During this period people obtain their drinking water either from the perennial wells or by digging water holes in the river beds locally known as “Jhara”. The list of existing wells and perennial water sources in the Sanctuary area has been given in the map. In the village Kanhargaon, there is a continuous flow of water from an Artesian Well. FDCM has installed a permanent pipe line for supply of water to villagers and the FDCM Colony.

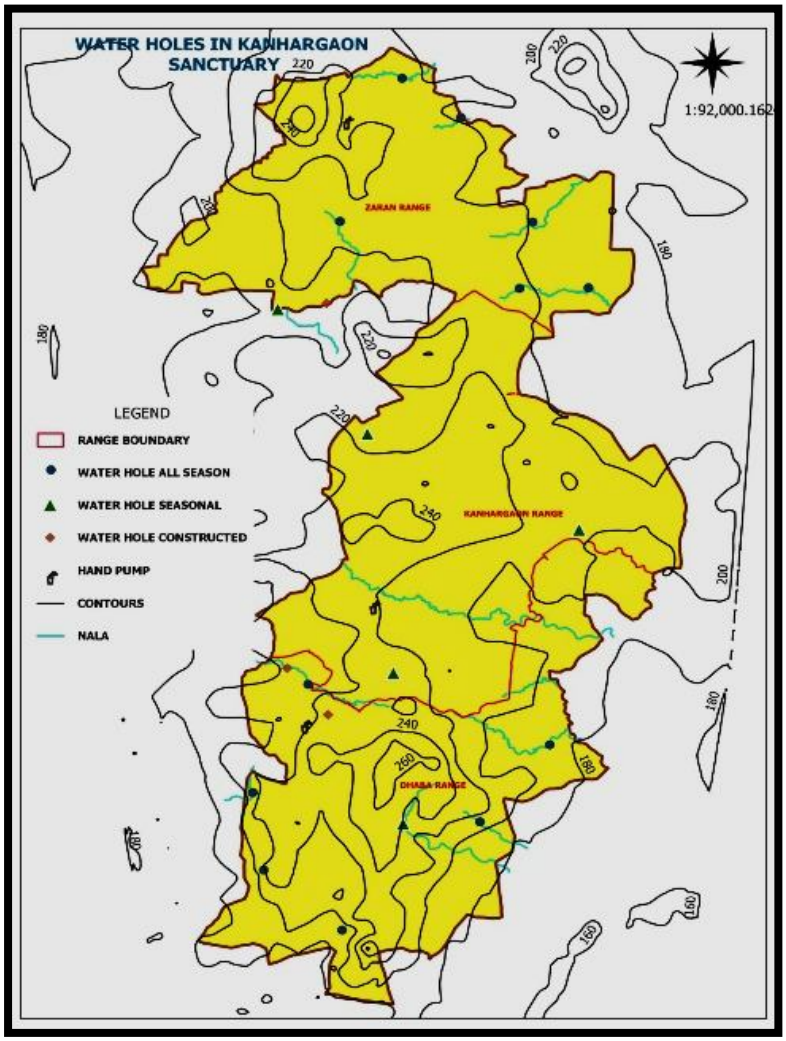



Fig. 3 - Map of Waterholes in the Sanctuary

**2.5 Status of area and Habitat of Wildlife: -**

**2.5.1 Vegetation: -**

**The bio-geographic classification**

Before the enactment of Indian Forest Act (VII of 1878) forests of Ballarshah, Dhaba and Kothari ranges were in possession of either malgujars or zamindars. The greater part of these forests was declared Reserved under section 34, IFA of 1878 by the local Government's (Central Provinces), Gazette Notification No. 917 (i), dated the 24th February, 1879. The total Reserved Forest areas covered under this notification and included in Ballarshah, Kothari and Dhaba Ranges. The other forest areas remained with Zamindars and Malgujars till the abolition of the proprietary rights in 1951. Bulk of the forest in the Sanctuary belongs to A class forest and there is no C class forest in the Sanctuary.

**2.5.2 The Forest Types: -**

The forests of the tract dealt with under this plan belong to group 5, sub group - 5A, "**Southern Tropical Dry Deciduous Forests**", as per the revised classification of forest types of India by H.G. Champion and S.K. Seth. Within this main sub-group considerable local

variations occur depending mainly upon edaphic, topographic, biotic factors and past treatment. As per the variations in type and depth of soil, the composition and quality of the crop vary. On the basis of the aforesaid factors the forests of the tract being dealt which can be classified as:

Table-3 Forest Classification in the Kanhargaon Sanctuary

| ***Forest Types*** | ***Champion and Seth's Classification*** |
|---|---|
| Group | Tropical Dry Deciduous Forest |
| Sub-group 5 A | Southern Tropical Dry Deciduous Forest |

As regards the faunal biodiversity the areas of sanctuary are represented by the Central Indian range of native species—mammals, birds, reptiles and amphibians. Not much is known about fishes. With raising large scale plantations since 1970 the current status needs to be ascertained. The area has several species of medicinal plants. Species that are not commonly come across in this area like *Eonymus godaverensis, Aegle marmelos (L), Celastrus paniculata (wild), Andrographis paniculata (burmf), Aristolochia indica, etc.* are present and are being conserved in-situ with appropriate measures.

**The Assessment of Biodiversity in the Sanctuary**

To assess the status of plants in the sanctuary, a reputed taxonomist was taken on board to survey and prepare the check list of plants in the area. For the purpose a statistical sample survey was conducted in 15 Compartments both in natural and converted forest to assess the biodiversity. The data compiled by the taxonomist Dr. Umakant Deshmukh is is presented at (**Annexure II**). The survey has revealed presence of more than 300 plant species

**2.6 Animals: -**

**2.6.1 Vertebrates, their status, distribution and habitats: -**

As stated before the area represents the central Indian faunal soecies

**Carnivores:-**

**Tiger (Panthera tigris):-** It is commonly known as Wagh or Sher is found in dense forests in the plains and sheltered valleys. During summer tigers are seen in the vicinity of big rivers or water holes.

**Leopard (Panthera pardus)**:**-** It is locally known as Bibtya Wagh or Tendua and is found throughout the tract. Leopards pay nocturnal visits to villages situated on the fringes of forests and lift stray dogs, goats and even poultry. The intrusion of man in its environment is responsible for reduction in its number.

Table-4 Status report of Tigers in Kanhargaon block

***Technical Report by WCT reveals the number of Tigers in Kanhargaon Block as-***

| Sr.No. | Report Year | Census Period | Particulars | Density/ 100 sq.km. |
|---|---|---|---|---|
| 1 | 2015 | 2014-15 | Tigers-10 (3 Males,7 Females) | 2.34 |
| 2 | 2017 | 2016-17 | Tigers-10 (2 Males,8 Females) | 1.9 |
| 3 | 2018 | 2017-18 | Tigers-11 (6 Males,5 Females) | 2.15 |
| 4 | 2019 | 2018-19 | Tigers-11 (5 Males,6 Females) | 2.14 |
| 5 | 2021 | 2019-20 | Tigers-12 (8 Males,4 Females) | 2.42 |

**Others: -** Other carnivores/omnivores include sloth bear (Melursus ursinus), dhole (Cuon alpines), hyena (Hyaena hyaena), wolf (Canis lupus), jackal (Canis aureus), Indian fox (Vulpes bengalensis), honey badger (Mellivora capensis) and jungle cat (Felis chaus).

**Herbivores:-**

**Gaur (Bos gaurus) :-** It is the largest among the extant bovines. Few herds and solitary black bulls are noticed at times.

**Sambhar/sambar (Cervus unicolour) :-** It is the largest deer in the area with males displaying fine antlers. It is a species that preferers dense forests, does well in hilly terrain and is adapted to edges of natural open areas, grassy openings and edges of cultivation fields. The hind is smaller without antlers. Depending upon disturbance they are diurnal, crepuscular and nocturnal in habit. Sambhar males can be solitary or form small parties with hinds, subadult individuals and fawns.

**Chital or Spotted Deer (Axis axis):-** They are the most beautiful of all the deer in India. They prefer plains—grasslands interspersed with stands of forests with scattered sources of water. Under the right habitat conditions they can form largr herds. In Kanhargaon they occur in small herds

**Nilgai or Blue Bull (Boselaphus tragocamelus) :-** Commonly known as Rohi and is seen in daytime in small herds in the open scrub forests.

**Sloth Bear (Melursus ursinus) :-** A hard working omnivore locally called Aswal and is found in all over the area but in small numbers. This animal is credited with short temper particularly the female with cubs may attack without any provocations. From the bear's perspective anyone entering personal space is regarded as an enemy and is dealt with summarily.

**Wild Pig (Sus scorfa):-** It is locally known as ran dukkar and is found all over the tract which does not suggest large numbers. The adult male is called the boar and the female a sow. They damage agricultural crops while seeking food in the marginal and isolated fields.

**Indian hare/black-naped hare (Lepus nigricollis):-** Locally known as Sasa and is found all over the tract.

**Reptiles :-** Amongst the reptiles, various kinds of snakes Python, Rat snake, King Kobra, Russel's viper, monitor lizard are seen in the forests.

**2.7 Avifauna: -**

Pea fowl, Gray jungle fowl, Gray Patridge, Painted Patridge, Painted Sand Grouse, Common Sand Grouse, Jungle bush quail, Black breasted quail, Indian bustard quail, Indian button quail, Red spur Fowl, Crane, Spot billed duck, Pigeon, Dove, Common teal, whistling teal, Black necked stork, Owlets (Annexure III)

---------0000----------

# CHAPTER-III History of management & Present practices

## 3.1 Status of the area: -

In the area of Kanhargaon Sanctuary, then part of the Central Chanda forest division tiger shooting blocks were operative till 1970. All shooting blocks for all species were closed thereafter.

## 3.2 History of Forest Management: -

### 3.2.1 Forest Development Board: -

The area of Sanctuary is carved out of forest area of Central Chanda Forest Project Division of FDCM Ltd (Forest Development Corporation of Maharashtra Ltd) and a small area from the Central Chanda territorial Forest Division.

In 1969, some Reserved Forest areas of Central Chanda Division were transferred to Forest Development Board which was established during the same year to convert inferior forest—from the stand point of timber yielding species--into superior Teak Plantations. Silvicultural system followed was Conversion to Uniform system with complete removal of Over-wood as Teak is a strong demander of light. The results of these Teak Plantations were excellent and encouraging although it meant reduction of diversity. These plantations were continued till 1974.

### 3.2.2 Formation of FDCM Ltd: -

Later on, keeping in view of the success of these plantations and to convert potentially productive miscellaneous forests into timberwise superior forests of teak stands with plantations the Forest Development Corporation of Maharashtra was formed in 1974 under Companies Act as an undertaking of Govt. of Maharashtra. Accordingly, Reserve Forest areas of territorial Forest Divisions were earmarked and transferred to FDCM Ltd for conversion. The entire Project was later aided by WFP (World Food Programme of FAO) wherein wheat and oil was provided to the workers as part of wages and the cost were deducted and utilized for the welfare of the workers. The aid played a major role in organizing the massive work force. Various labor camps were established with basic amenities. Labourers were provided assured employment throughout the year. Harvesting operation was undertaken on war footing so as to complete the task in a time bound schedule.

These Divisions were assigned annual target of converting miscellaneous forest into Teak Forest. This practice of Conversion to Uniform system continued till 1986.The rotation of Teak was fixed at 80 years. Regular thinning was prescribed for these plantations which generated revenue for FDCM. Initially mechanical thinnings were proposed but after few years as per new guidelines the thinning regime was changed and implemented. Considering the site quality, age of the plantation, average crop girth and basal area, retention of trees

was determined from the volume (yield) tables. Today also this practice is followed in the FDCM. The success rate of these plantations was quite high.

**3.2.3 Open Jail as social activity: -**

Novel idea for an open jail was implemented in Camp 4 areas of Kanhargaon for social upliftment of inmates of a prison. Inmates were allowed to earn their livelihood from forestry works. A Unique feature of the open jail was that inmates were allowed to roam free. These inmates were very useful as a work force on the interior sites. Some of the inmates had chosen to stay in the labour camps after their release from the jail. This social transformation of inmates helped their rehabilitation.

**3.2.4 Bamboo harvesting: -**

It was carried out before removal of Over-wood. The bamboo bundles were sold to paper mill at Ballarshah under a lease agreement. Gregarious flowering of *Dendrocalamus strictus* was observed in the year 1983-84 all over the Kanhargaon areas. All bamboos were harvested in a time bound schedule. Bamboo seed was collected and stored for further regeneration. Profuse regeneration of bamboo had taken place during the monsoon. Again, in the year 2021 after a gap of 36 years, gregarious flowering has been witnessed in some of the forest areas of Chandrapur district and being synchronous it is expected to take place in time within the sanctuary.

**3.2.5 Central Nursery: -**

Modern teak nursery was created at Zaran where huge quantity of root-shoot stock was produced every year. Majority of these Teak stumps were of thumb size. This teak nursery was back bone of successful teak plantations.

**Thailand Technique of preserving teak stumps.**

The method was in practice in Thailand hence the name given is Thailand Technique. Before monsoon, teak seedlings were uprooted one month in advance and stumps were prepared. These stumps were transported to the inaccessible areas and preserved in a pit of 1Mx1Mx1M in such areas. The stumps were kept in between the layers of sand which was sterilized by washing and drying at a temperature around $70^0$ to $80^0$ centigrade. After refilling the pit, a small hut thatched with grass was erected over the pit and temperature maintained at around $26^0$ to $28^0$ centigrade inside the hut by sprinkling water. On the onset of monsoon these teak stumps were planted. Teak stumps were subjected to the shock treatment and the favorable conditions during monsoon gave impetus resulting in abundant sprouting of teak stumps. The results were very successful and the technique was appreciated by forest officers from Thailand too.

Government of India banned the complete removal of Over-wood in 1987as such this system was discontinued.

**3.2.6 Enrichment Plantations: -**

Enrichment Plantations of Teak in the blank patches and open areas with density less than 0.4 were undertaken in 1987 which continued for a year.

### 3.2.7 Massive Afforestation Programme: -

In 1988 Massive Afforestation program was undertaken all over FDCM. Various models were prescribed for plantations. Heavy targets were set each year. These plantations were successful in Vidharbha Region.

### 3.2.8 F.D. Tax Plantations: -

From 1991 onwards, plantations under F.D. Tax were implemented till 1994 which also included Compensatory Plantations. The main species was teak. Fruit trees were also introduced in these plantations.

### 3.2.9 Plantations under World Bank Aid: -

In 1995 various plantations based on different models depending upon the soil strata were undertaken including teak and miscellaneous species under World Bank funds. The success rate of these plantations was encouraging. Path breaking Root-Trainer technology was introduced for the first time which was revolutionary not only in FDCM but in the entire Forest department.

### 3.2.10 Over-wood Removal (OWR) Plantations: -

In 1997 GoI permitted removal of over wood based on the basal area and average crop girth of a particular site quality. The existing crop composition of the area was taken into consideration. Areas below 0.4 density were tackled. These teak plantations were highly successful and regular thinning were prescribed. These OWR plantations continued as per the Management Plan.

**Conclusion:** The Management practices adopted by Forest Department, i.e. the Forest Development Board that grew out of the forest department and FDCM have been conducive for protection. The consequences for the native wild animals, even if the larger mammals are concerned are not quite clear. Monocultures are very poor in support of diversity and species richness. This is proved the world over.

## 3.3 Present Management Practices.

**BASIS OF PROPOSALS:** In accordance with the National Forest Policy of 1988 and Forest Policy of Maharashtra 2008, the area management has been proposed. The following six independent Working Circles and four Overlapping Working Circles have been constituted. As per the new National Working Plan Code 2014. Non-Timber Forest Produce (Overlapping) Working Circle, Soil and Water Resource Management (Overlapping) Working Circle are newly constituted in this present Management Plan.

### 3.3.1 TEAK PLANTATION MANAGEMENT W.C.: -

All successful teak plantations raised by Forest Department and FDCM Ltd., up to 2015 under the Silviculture system "Conversion to uniform" by clear felling and "Conversion to uniform with supplemental artificial regeneration of genetically superior stock" by overwood removal are included in this Working Circle. Area allotted to this Working Circle is 11505.454 ha.

### 3.3.2 TEAK PLANTATION & REBOISEMENT W. C.: -

This Working Circle includes the untackled areas of natural standing crop suitable for raising teak plantations having slope upto $25^0$, soil depth 30 cm. and more and site quality III and above. The extent of such area is 3105.000 ha. To enhance the timber productivity of the area by converting less valuable forests—from timber point of view--into a valuable Teak stands, the silvicultural system is named as "Conversion to uniform system with supplemental artificial regeneration of genetically superior stock" as per the recommendation of the committee by Government of India, has been adopted.

### 3.3.3 IMPROVEMENT WORKING CIRCLE: -

Forest areas capable of producing medium to large sized timber, poles and firewood but not considered fit for harvesting due to preponderance of young crop has been included in this Working Circle.

This Working Circle constitutes the following areas: -

(i) Area of linear strips retained along nala boundary, natural surround of earlier plantation and un- worked areas that need proper tending. Crop is mainly of miscellaneous species.

(ii) Area having adequate natural regeneration**.**

Cleaning and improvement felling will be carried out and in gaps suitable indigenous species will be planted. Area allotted to this Working Circle is 12201.228 ha.

### 3.3.4 AFFORESTATION WORKING CIRCLE: -

The open forest areas having density less than 0.4 and with rootstock and shrubby growth as well as open forests without rootstock, where artificial regeneration appears necessary to restore wood productivity, are included in this Working Circle. Only dead, dying, malformed, crooked trees will be marked for felling—these are significant microhabitat elements for considerable numbers of birds, reptiles and small mammals. In gaps suitable indigenous species will be planted. Open gaps are important for ground dwelling birds and reptiles. Area allotted to this Working Circle is 3259.000 ha.

### 3.3.5 PROTECTION WORKING CIRCLE: -

This Working Circle covers partly the entire area left out after assigning suitable areas to respective Working Circles and includes the unworkable areas on account of the steep and

precipitous slopes, strips along nalas, catchment areas of small and big waterbodies, unworkable patches, rocky portions and encroachments.

Area assigned to this Working Circle is 328.500 ha. The details are as under:

Unworkable areas on account of steep slopes, rocky and refractory sites, strips along nala boundary account for an area of 318.000 ha.

Encroachment areas account for an area of 10.500 ha.

Soil and moisture conservation works are prescribed. No harvesting of trees is recommended in these areas except wind fallen trees of valuable species. In understock and open areas, seed sowing is prescribed. No plantation is recommended. Encroachment areas will be evacuated and regenerated artificially with suitable local species. Encroachment area is minimal hence included in this Working Circle.

**3.3.6 PLANTING STOCK IMPROVEMENT WORKING CIRCLE: -**

This Working Circle includes Central Teak Nursery, Seed Stands, Seed Production areas & Seed Orchards & Research Plots mainly of Teak. Area allotted to this Working Circle is 238.997 ha. This area is identified for this Working Circle with an objective to supply quality seeds & Seedlings for the Plantation activities in the forestry sector.

**3.3.7 MISCELLANEOUS WORKING CIRCLE: -**

The areas reserved for timber & firewood depot, nurseries, roads, staff colonies, office building, water bodies are included in this Working Circle. The extent of area is 464.078 ha. Main objective of this Working Circle is to maintain territorial integrity and comprehensive area accounting of the Reserved Forest and Protected Forest in the Division.

**3.3.8 BAMBOO PRODUCTION (OVERLAPPING) W.C.: -**

This Working Circle includes all the areas where bamboo, natural, silviculturally mature is available for harvesting. All-Natural Bamboo bearing areas which are capable of giving marketable bamboo are included in this Working Circle. This is an overlapping Working Circle and it includes following areas.

Naturally regenerated bamboo areas = 11425.000 ha.

Area allotted to this Working Circle is 11425.000 ha. which is distributed in 119 compartments. Bamboo cutting works will be carried out in three year cutting cycle, categorized as coupe A, B and C.

1. This Working Circle aims at improving the Bamboo productivity for meeting market demand.
2. Harvesting of Bamboo in scientific manner to obtain maximum sustained yield.
3. To protect the Bamboo clumps, both natural and artificial, from illicit cutting, browsing, fire and congestion.

**3.3.9 WILDLIFE MANAGEMENT (OVERLAPPING) W. C.: -**

It overlaps the whole area of the Sanctuary i.e. 269.400 Sq.km in 105 Compartments. The main aim of this Working Circle is to provide directions and guidelines to the field staff in Scientific Management of Wildlife and its habitat along with Traditional Forest Management.

### 3.3.10. NON-TIMBER FOREST PRODUCE (OVERLAPPING) W. C.: -

This Working Circle is constituted for the first time in this Division with the aim of conservation, development and sustainable harvesting of minor forest produces other than MAP. It overlaps the entire area of the Division and aims at ensuring planned and scientific management and harvesting of the important Non-Timber Forest Produce.

### 3.3.11 SOIL AND WATER RESOURCE MANAGEMENT (OVERLAPPING) WORKING CIRCLE: -

This Working Circle overlaps the entire area of the division. The problem of erosion is assuming a serious dimension on account of continuance of practices which slowly and inevitably lead to the loss of surface soil and exposing the underlying unstable gravel structure resulting in the formation of new ravines. The problem is further aggravated by the ever-increasing human population. Rau and gully control through engineering structures augmented by vegetative measures will be the main works done under this Working Circle.

FDCM is committed for Protection, Development and Conservation of Biodiversity, the latter to the extent that can be accommodated within large scale monocultures through intensive Management of the Forest area, leased out by the Forest Department, by giving proper treatment to the area of each compartment. Hence, there may be two or more Working Circles in a compartment to be managed by FDCM Ltd.

### 3.3.12 NTFP Collection: -

As the area of FDCM consists of Reserve Forest, NTFP collection was not allowed in general. Local tribals used to collect Moha flowers which was used for fermentation of homemade liquor. Collection of gum, hirda, beheda and aola was limited to herbal use of tribals and for raising seedlings.

No commercial use of NTFP was permitted.

In Central Chanda Forest Division tendu and bamboo are major NTFP produce generating revenue as well as providing employment in rural areas. Khair heart-wood is used in production of kattha however preponderance of khair trees is limited. Other NTFP include Moha fruits and myrabolons, gum and broom-grass. Uncontrolled harvesting of these has decreased their abundance considerably.

Salai and dhawada gums are the main sources of gum production of this tract that have medicinal properties. Broom-grass is used in houses. Sabai grass is good soil binder and used in rope making.

### 3.4 Lease, Rights and concessions: -

Bamboo harvesting was operative on lease and no other concessions and rights were given. Bamboo was sold to the paper mill at Ballarshah at the predetermined rate. In the territorial Division of Central Chanda, bamboo and firewood was given to local residents in concessional rate as Nistar. Firewood was sold to the Ashram schools on concessional rate by FDCM.

### 3.4.1 Forest and Revenue villages: -

Prior to 1970 there were Forest villages under the control of Forest Department. The labourers from these villages used to earn their livelihood on forestry works apart from their regular agriculture activities. These workers were not only a strong labour force but were highly skilled for executing forestry operations. Later on, in 1972 all these forest villages were converted into Revenue villages under the control of revenue department as per the recommendations of Dhebar Commission. As a result, their dependency on forestry works went on decreasing slowly. This led to shortage of manpower for future forestry works as other options from revenue departments were available to them.

### 3.5 Illegal Activities: -

Illicit cutting of trees and poaching of wild animals constitute major threats. Extraction of stone and sand though not frequent was noticed in the past. Unauthorized grazing in forests and plantations areas is a reason of concern.

### 3.5.1 Live Stock grazing: -

Grazing is not permitted as per provision of law under Reserve Forests however unauthorized grazing is rampant.

### 3.5.2 Fires: -

The areas are fire prone. Modern firefighting scheme was launched in the year 1985 under US AID which was continued for 5 years. Field staff was trained for firefighting with modern techniques and equipment. Wireless network was established and walkie-talkies were provided to the field staff, however the equipment and instruments are not in use now except at a few places.

Fire incidences recorded in past – (Ref.Appendix IX in Management Plan of FDCM)

Table-5 Fire incidences in past

| S.N. | Year | No. of Fire cases | Burnt Area in ha. |
|---|---|---|---|
| 1 | 2006-07 | 79 | 334.000 |
| 2 | 2007-08 | 103 | 963.000 |
| 3 | 2008-09 | 96 | 613.500 |
| 4 | 2009-10 | 104 | 1163.500 |
| 5 | 2010-11 | 73 | 702.000 |
| 6 | 2011-12 | 90 | 909.000 |
| 7 | 2012-13 | 63 | 652.000 |
| 8 | 2013-14 | 23 | 90.000 |
| 9 | 2014-15 | 66 | 485.500 |

**3.6**

**Tourism: -**

There is wide scope for tapping tourism potential The major attraction being the tiger. Kanhargaon Sanctuary area is also well known for wood and leaf fossils. The area identified as Fossil Park is a major center of attraction for tourists as well for researchers. Wood and leaf fossils are unique feature of the Fossil Park which is located well outside the sanctuary

**3.7 Research Monitoring and Training: -**

Modern technology is being applied in the field under various objectives: -
Use of Camera traps for wildlife assessment and monitoring.
Use of G.P.S. for various purpose.
Use of wireless, mobile phones for communication.
Use of digital cameras, use of Internet etc. are few examples.
A pilot project for fast-growing bamboo (Balcooa) was initiated in this division during 2014 rains in 1.00 ha and in 7.50 ha area during the 2015 rains.
Training programs were organized to update the knowledge of staff.
Training relating to medicinal plants was conducted that was supplemented by a regional level workshop during 2015
Training on forest offense cases, wildlife monitoring/assessment, man-animal conflict etc. including exposure tours for staff & villagers were organized regularly.

A special training on enumeration of trees relating to sample plot as per National Working Plan Code 2014 was also organized.

Training programme for the frontline staff relevant to important tasks especially concerning wildlife management is planned. This involves population estimation with camera trapping. A separate chapter on Research and Monitoring is included in the plan.

**3.8 Perceived Threats: -**

In the eighties Poaching of spotted deer was frequent. Local residents of Kanhargaon camp 4 area used to train local dogs to chase and hunt the spotted deer. Local Range officers used to auction the perishable meat after deer died of exhaustion and shock. Damage of crops in the nearby fields due to wild pig was common. To control this menace villagers used to plant handmade bombs and kill the wild pigs in a very cruel fashion.
Provisions under the Wildlife (Protection) Act 1972 and Rules thereunder were applied for protection.

# CHAPTER-IV Interface Land use situation & their implications

Forest cover and land use planning is of prime importance to promote desirable social and environmental obligations.

### 4.1 The Existing Situation in the Zone of Influence:-

The surrounds of Kanhargaon sanctuary have villages that are predominantly populated by tribal Gonds Apart from Gonds there are Thakars and Kunbis. The total population in villages outside the PA is large. Tohgaon village is thickly populated. Though the livestock is large, productive cattle are far less. Major land use is permanent cultivation of paddy (rice).There are no incidences of shifting cultivation. Encroachment cases are rare.

### 4.1.1 Economy:-

Major occupation is agriculture followed by rearing livestock, casual labor in forest areas which include OWR harvesting, thinning and cultural works, road repair and working on brick kilns. Percentage of landless people is low. The annual production of rice per household suffices the needs of a family. The mean annual income is moderate. Villagers procure their domestic provisions from nearby markets. Kothari is a major market place for local villagers. Many houses in these villages are made of stone/bricks with mud mortar. Poor/cheap dwellings made of bamboo, karvi and grass. Thatched roofs are also noticed at places. Resident Government ashram schools are few in numbers. Most of the villages face water scarcity especially in summer.

### 4.1.2 Dependency on the PA:-

Earning livelihood is mainly dependent on agriculture and forestry works.

**Fuelwood**: This is the major source of energy. Villagers collect head loads from forests however some villages have been provided with LPG cylinders.

**Fodder**: Grasses and fresh leaves are required for their daily needs.

**Timber**: teak, ain and jamun are used as timber.

**Plant and animal food**: Tender shoots of bamboo and safed musali during monsoon are used as supplement food apart from other plant species. Crabs are regularly cosumed during monsoon.

**Medicinal Use**: Local people use traditional herbal medicine such as murud sheng, kuda, and kal-lavi. Local vaidus are present in most of the villages. Snake bites cases are treated by these vaidus using herbal plants however the ethono- botanical knowledge is confined to them.

### 4.1.3 Management Practices and their implications for people:-

The sanctuary has no villages inside. People collect fuelwood from the forest and graze their cattle although livestock grazing is prohibited by FDCM. A few cases of livestock killing by large carnivores is reported. Compensation is duly paid in genuine cases. The PA area currently vested in FDCM offers employment to nearby villagers.

### 4.1.4 Development Programmes and Conservation Issues of Government and Non-Government Agencies:-

1) The Government Departments devise and implement their respective schemes for amelioration of living conditions of the people viz. Revenue, PWD, Irrigation, Primary health, Agriculture, Animal husbandry and Tribal welfare departments. Schemes like Employment Guarantee Scheme, Jawahar Rozgar Yojana, and Jalyukt Shiwar Yojana are also implemented. NGOs working in the areas are lending a helping hand. There are two NGOs working in the area
2) Tiger sightings in the territorial Central Chanda division are fair. Post restoration of habitats there are likely to be reasonable opportunities for eco tourism within the sanctuary. This would help in providing not only employment opportunities but is likely to help in developing local stake in conservation.
3) The Inspection hut at Kanhargaon and camp 4 offer good potential for creating museums, Interpretation and information centers as well as camping huts/cottages for tourists but all depends on planning assets for ecotourism that need to be attractive
4) Fossil areas in the sanctuary would be an added attraction as well as for research activities for geologists and botanists
5) Preservation of historical and cultural heritage: There are local deities in the areas and some sites of historical importance.

Biotic Pressure: -Livestock causes enormous damage to the PA. Most of the cattle are from adjoining villages. There is increasing pressure for collection of fuelwood. Some Illicit cutting for timber is also a cause of concern. If the villagers are provided with LPG, burden on the sanctuary would reduce. Fires are not uncommon

### 4.2 Man-Animal Conflict: -

The whole issue needs to be looked upon holistically from the point of Humans as well as Conservation of Wildlife.

1) Creating awareness among the local communities would be the main objective and not easy by any means
2) Basic safety rules to be followed while moving in the forest would help a great deal
3) Regular patrolling in the area.

4) Providing immediate medical aid to the affected persons and adequate compensation as quickly as posible. The State rates are among the highest in the country that addresses various causes and the Rules that support are effective.

4) One village Ganpur, due to its strategic location if relocated in future will benefit the sanctuary.

**----------0000----------**

Part II

# Propesed Management

## CHAPTER-V Management vision, Objectives & Problems

### 5. Management Vision: -

- To conserve and protect the existing Biodiversity of the Sanctuary for effective wildlife management and develop the area as viable Tiger habitat, which will reduce the Tourism pressure on TATR.
- To establish corridor linkages of the Sanctuary with TATR, Chaprala Sanctuary and other habitats in the adjoining States of strategic locations, which will prove of great importance for wildlife conservation in the landscape.
- To identify the direct stakeholders of the area and determine extent of benefits percolating down to local people in the adjoining area due to activities of FDCM and initiate provision of suitable alternatives for gainful employment and resource use, if any.
- To create nature conservation awareness among the local community and initiate participation in wildlife protection, Sanctuary management through Eco-development programme to begin with and through Eco-tourism in the future.
- To improve the financial conditions of the locals through alternate livelihood opportunities including developing traditional income generating activities like Agriculture, production and marketing of traditional products through skill development, provision of infrastructure etc.
- To address Man -Animal conflicts and developing proficiency of local staff and local people to handle and prevent occurrence of incidents.
- To initiate Research, monitoring activities for habitat and wildlife components so as to document data for facilitating future management.
- Human Resource Development of Staff and local people.

### 5.1 Sanctuary Management Agency:-

The Area at present is in charge of Divisional Manager of FDCM. However, the staff of FDCM Ltd is not conversant with their approach and knowledge of managing the sanctuary area. The Chief wildlife warden desired to manage the sanctuary by office of the wildlife wing. Due to this, management issues are not tackled properly from the date of notification of the Sanctuary. It is proposed to transfer the area for management to the Chief Wildlife

Warden of the state or his offices. The frontline staff is to be continued and needs to be trained in the Wildlife Management to strengthen the supervision.

**5.2 Management Objectives:-**

- Tending extensive Teak Plantations by adopting various scientific silvicultural practices so as to ensure progression of habitat to its natural state.
- To assess impact of Management activities implemented by FDCM on the habitat over long period of about 35-50 years by assessing composition of vegetation and it's utility for improving wildlife habitat.
- To classify the sanctuary area into Restoration Zone and Tourism Zone.
- To study the extent of benefits percolating to the villagers in the adjoining villages due to FDCM activities and plan for suitable employment alternatives and resource use, if any.
- To create nature conservation awareness amongst the local community and seek participation in wildlife protection, sanctuary management through implementation of Eco-development and Eco-tourism programmes.
- To elevate livelihood opportunities of local community by adopting to development of Agriculture, Skill development, assistance in marketing so as to improve their income.
- To address Man-Animal conflict and promote proficiency of local sanctuary staff and villagers to reduce occurrence of such incidents.
- To initiate Research, Monitoring activities for development of habitat and wildlife by documentation of data for strengthening future management practices.
- Human Resource Development of Sanctuary Staff and stakeholders for effective protection and development of PA, through trainings, seminars, field visits to other PAs and Eco-developed villages.
- To delineate and notify the Buffer Zone area and propose its management strategy in due course of time in consultation with the stakeholders, to reduce pressure on the Sanctuary.
- To identify and develop over passes and under passes on the State Road passing through the Sanctuary area in-between Kothari and Aksapur for animal crossing.
- To regulate speed of vehicles passing through the Sanctuary area on State Road.

**5.3 Problems in Management:-**

Out of 105 compartments in the Sanctuary, 95 compartments have been managed by FDCM from 1974 and all the staff (except the Divisional Manager) is recruited by FDCM as per their recruitment rules. The CWLW of the State desires the Sanctuary management by staff of wildlife wing of the Forest Department and not by the FDCM. In such circumstances, the following administration problems may be developed.

5.3.1 The posts of ACF, RFOs, Foresters, Forest Guards, Supernumerary class IV labour, Clerical staff will have to be newly created by GoM to manage the Sanctuary. This staff will have to be trained in Wildlife Management and management of extensive Teak plantations. This sudden change over may adversely affect the management.

5.3.2 The existing frontline staff and ministerial staff of FDCM is likely to be reluctant for transfers to the new area proposed to be allotted to FDCM in Gadchiroli district. This will create problems to administrators in FDCM and Forest Department.

5.3.3 The employment generated for the local population due to FDCM activities will slowly be curtailed and hence shall create sense of negativity for smooth management of the Sanctuary.

Addressing the change in the mindset will consume a reasonably long period.

5.3.4 The gradual change from Commercial Management to Protection Management is not likely to be smoothly accepted by local villagers.

5.3.5 As about more than 90% of the Sanctuary area is under plantations, silvicultural operations will be required to be continued during the first five years of the Management Plan.

5.3.6 The staff will have to be well trained in Wildlife Management and Management of extensive Teak plantations.

5.3.7 Eco-development and Eco-tourism are new concepts for the local people and it will require extra efforts, inputs to receive support from villagers.

5.3.8 Since commercial sale of forest produce from the Sanctuary shall require special permission from the competent authority, the CWLW or MD, FDCM will have to initiate action immediately.

5.3.9 Large number of Tourists are attracted to TATR area due to established tourist facilities, it will take sufficiently long period to attract tourists to this Sanctuary.

5.3.10 The State Road from Chandrapur to Allapalli is passing through the Sanctuary between Ganpur and Aksapur villages and needs tight vigilance, control and regulation of vehicle traffic, particularly in Night period. It will be a challenging task.

5.3.11 Notification of Buffer Zone is also not easy and smooth operation because in the forest area on the periphery of the Sanctuary, extensive plantations of FDCM exist and declaring such area in the Buffer Zone, the restrictions likely to be imposed may not be acceptable to FDCM.

5.3.12 Relocation of Ganpur village may not be accepted by GoI and GoM because this village is outside the Sanctuary and both the Govts are not likely to sanction financial package to such relocation. Villagers are also not likely to accept relocation willingly.

**5.4 Management Strategies:-**

**5.4.1 Rapid Assessment of Teak area and growth:-**

Teak plantations up to 1992 have been done at 2×2 m spacing and the approximate area under such plantations is 10,000 ha. From 1993 onwards under the Maharashtra Forestry Project ,Teak plantations spacing is 3×3 m and the approximate area under such plantations is 1000 ha. FDCM is carrying out thinning in plantations of 2×2 m on the following thinning regime. First silviculture thinning on completion of 10 years and subsequent thinning every five years thereafter. They have not standardized thinning regime for Teak plantations of 3×3 m so far. The FDCM has prepared Stand and Yield tables for Teak plantations of 2×2m spacing for different site qualities. Since the FDCM is carrying out thinnings in Teak plantations raised from 1970 onwards, the population of plants has considerably reduced and the standing crop has put on girth and height increment. In view of this Rapid Assessment of Teak Plantations in the following age class will be useful to develop the habitat,

A) Teak plantations over 40 years age
B) Teak plantations over 20 upto 40 age
C) Teak plantations over 10 upto 20 age
D) Teak plantations below 10 years age

Sample plots of about 5000 sq.m. will be laid in each compartment and following profile of Teak and Non-teak vegetation shall be recorded --
No. of Teak trees, Crop height of Teak, Average girth of Teak at bh.
In these sample plots trees in Top storey,

Middle storey of all species will be recorded. Also ground flora recorded.

5.4.2 Rapid Assessment of Wildlife, namely carnivores, herbivores,

rare mammals, Avifauna and butterflies.

5.4.3 Assessment of stakeholders and their economic linkage with FDCM activities. Also examine alternate income generating activity to strengthen their livelihood status. Provide them training, infrastructure and marketing support.

5.4.4 To carry out thinning in Teak Plantations.

The area of FDCM is managed as per the guidelines of National Forest Policy of 1988 and the State Forest Policy of Maharashtra 2008. The Management Plan of Central Chanda FDCM which is based on above guidelines is approved by GOVT of India for 10 years from 2015-16

to 2025-26. The plan of operations includes the silvicultural thinning and harvesting of Over wood which is based on the retentions as per stand table, basal area, average crop girth, site quality and the crop composition approved by GoI in 1997. These operations are being followed by FDCM since its inception. It is pertinent to note that, the Management practices adopted by FDCM have been conducive for the Protection and Conservation of wildlife habitat, which led to the overall growth and rise in wild life population.

**Thinning Regime**

As per the sanctioned management plan of Central Chanda FDCM the thinning regime followed is as given below. The rotation of Teak is 80 years.

Prior to thinning, cleaning operation is to be carried in the plantations. 1$^{St}$ silvicultural thinning: in the 10$^{th}$ year and subsequent silviculture thinning after every 5 years is undertaken depending upon the basal area, average crop girth, critical crop girth, and retentions as per stand table, site quality and crop composition. **No operations will be carried out for plantations more than 45 years old.** On the other hand, rest of the plantations below 45 years, thinning and cultural operations will be undertaken as per the prescribed schedule and practices of FDCM. In short, the thinning regime and thinning area listed out in (**Annexure-4)** of the Management Plan of Central Plan FDCM Division shall be implemented for the first eight thinnings or completing the age of 45 years from plantation. The thinning data of 2019-20 is produced below for yield of teak and non-teak forest produce.

**5.5 Monitoring**

While undertaking thinning operations, monitoring of thinned and un-thinned areas is very essential to determine sustainability of these activities. Representative sample plots or better still transact lines in different compartments of thinning areas should be laid out as per the technique/protocol established by NTCA/WII to monitor the change in plant population (Teak and miscellaneous} and the growth as well as abundance of wild life indications by field signs. Transects need to be laid in older plantations that will not be under thinning—45 years and older with successional growth of native vegetation. The forest statistician may be consulted to provide sampling areas of plantations, thinned and not to be thinned in consideration to variables. This will be the basis of future wild life management.

**5.6 Introduction of shade and Fruit Trees, Fodder and Grasses:**

To provide a healthy wildlife habitat, it is proposed to introduce fruit and fodder trees as well grasses in the areas where ever it is possible.

# CHAPTER-VI Strategies to achieve the objectives and solve the problems

## 6. Strategies to achieve the objectives and solve the problems.

(1) Rapid assessment of the habitat components by selecting samples representing 1. Teak plantation over 40 yrs; 2 Teak plantation over 40 to 20 yrs; 3 Teak plantations 20 to 10 yrs 4 Teak plantation below 10 yrs to obtain profile of vegetation, Top storey, Middle storey and ground flora. This will help to determine the inputs needed.

(2) Rapid assessment of wildlife occupancy of Carnivores, Herbivores, rare mammals, and avifauna in the area to identify sensitive pockets for inputs.

(3) Determine the actual stakeholders and their economic linkage to FDCM activities. Examine the alternate income generating activity and provide inputs to upgrade traditional livelihood options through trainings, providing infrastructure and marketing facilities.

(4) Since 95% area of the sanctuary has been brought under plantations by the FDCM it is not possible to apply normal zonation of Core as the entire area will need to be restored as far as possible to the natural state. Therefore, the sanctuary has been delimited into 1 Restoration zone and 2 Tourism zone. Restoration zone to facilitate habitat improvement and regulated tourism i.e Jungle safari as per TATR model in TATR buffer in the Tourism zone where nature trails Machans can be provided to the visitors. The strategies for restoration will apply to tourism zone as well without impairing the wilderness experience of visitors

(5) For effective wildlife management future development of the habitat the two villages Kanhargaon & Ganpur though technically outside the sanctuary but are in close proximity of the two blocks of the sanctuary need to be kept in contention. It is proposed to relocate Ganpur village to minimize human interventions in the chunk of habitat between the two blocks of the sanctuary. Also considering the development and increasing population, the demands of people can be fulfilled effectively at a suitable relocation site.

(6) Creation of buffer zone to mitigate the effect on two blocks of sanctuary by prescribing suitable operations in the buffer area to support wildlife.

(7) Identify traditional animal crossing points and provide overpasses and underpasses.

(8) Since the area is subjected to extremes of climate identify waterholes in core and also buffer in 3 categories 1. water availability up-to March 2. water availability up-to May and 3. water availability till the beginning of monsoons. i.e. perennial. Considering two kilometers radius circles around a waterhole providing strict protection and eliminating biotic interference gradually, especially in the buffer area.

(9) Carryout planting activity around the water holes and water courses to revive the Riparian habitat by planting of evergreen and fruit tree species conducive to the wild Fauna and Avifauna.

(10) For effective protection establishment of Protection huts and check post on sensitive entry points and establish network of protection huts one each per round.

## 6.1 Theme Plans

**6.1.1 Theme Plan for protection.** - Protection involves three major components

1.Land
2.Habitat
3.Wildlife
4.Fire

**Land-**

The basic objective in protection of land is to ensure the area indicated in the notification is supported by necessary documents, the Form I, 7/12.Further these lands need to be properly demarcated with permanent features. Since the traditional marks like pillars, stone cairns are susceptible to damage because of the ulterior motives of antisocial elements hence it is necessary to abandon the traditional boundary marks with replacement by permanent boundary marks of concrete pillars enclosed by UCR masonry with prominent cement pointing along the external boundary of the Sanctuary. The traditional practice of boundary pillars constructed at a distance of every 100 m can be followed for internal boundary maintenance. Numbers to be given on each pillars & Geo-tag coordinates of each pillar can be uploaded as supportive data. Field personal will have the details as per the jurisdiction and will be bound to give periodic report about their upkeep.

Field personnel should be provided digital maps of their jurisdiction with prominent feature details like boundaries, compartment with numbers, roads, patrolling paths, phase IV transects, nallahs, water holes & occurrence of sensitive flora & fauna in the area. Provision of PDAs, binoculars should be included in their equipment. Specific provision of field guides needs to be included so as to access them in discharging their field duties.

For effective protection it is necessary to establish Protection huts in the area. One Protection hut per Round should be established with a network of patrolling paths so as to cover all the Beats located in the Round. At least one patrolling path should be extended so as to join the patrolling path of the adjoining Range. Patrolling path will be of 6 Feet width which will be cleared immediately after the monsoons. Preferably existing foot path should be utilized so as to avoid clearing of new track. The patrolling path will be identified in to patrolling route which will be given specific identity preferably serial number so as to give clarity in patrolling and also facilitate monitoring of the patrolling activity. Location of

patrolling hut will be as per the prevailing situation and will essentially be connected by motorable road.

The patrolling hut will be manned 24/7 for 365 days. 3 Mazdoors and 1 Forest Guard will be present at the Protection hut with Forester being stationed on rotation basis. Beat Guards of the Round will be allocated weekly schedule and care needs to be taken to ensure presence of one Forest Guard always at the Protection hut. There are 10 Rounds hence total 10 Protection huts need to be established.

Protection huts need to have sufficiently large area to accommodate the number of personnel expected to man those and their movement inside. The hut needs to have secured door/s, the structure ought to be secure against inclement weather with proper ventilation and arrangement for lights, and toilet and arrangement for water and suitable filter for drinking water is included. The hut should be appropriately furnished. A reliable communication system needs to be in place. If mobile communication is possible then it has to be on closed conference system. Electronics have made significant advance. For example, the traffic police in larger cities now have their entire system based on secured mobile communication with requisite software in which unauthorized eavesdropping is not possible. If older protection huts exist then these need to be appropriately renovated

Protection Huts are to be located in interior forest areas to serve inter alia as a full-time residence for the staff on duty. Their reasonable comfort and health are important considerations to maintain their work efficiency and the dignity of their uniform. The patrolling camp needs to have an inside veranda, that can act as an office and a sitting room with the necessary furniture and a secure steel cupboard to maintain official correspondence and data. The veranda may be followed by a bedroom, a toilet bathroom block and a kitchen at the back with a store room. There should be steel cupboards for personal belongings, sufficiently large metal trunks to store dry ration and a small cupboard with shutters that have a screen to allow ventilation for storage of perishables like vegetables. Where gas cylinders are accessible these need to be provided for with a cooking range, if not then kerosene-based stoves or smokeless chullah. The windows need to have mesh screens to keep mosquitoes out. Cots need to have appropriate soft furnishing and mosquito nets. Source of water is essential. Good water filters need to be provided. Each camp needs to have first aid kits that need to be replenished timely. Personnel, at least 50% of the total need to be trained in basic first aid skills. The HQ needs to be in regular contact with the camps in their support.

We generally follow Type Plans for such construction. These are miserly and outdated vis-a-vis the work challenges that are mounting and greater work strain required to be faced by the ground force. There needs to be a way around the Type Plans with due justification unless the old type plans have been replaced and are suitable. These need not be overly

generous or ostentatious. Improvements have to be generated from the conditions in the field.

Patrolling: This is extremely important. Besides the other management inputs it provides to improve knowledge and efficiency for protection and as a strong deterrent for illegal activities. The plan needs to prescribe what is important. Identification and knowledge about species—mammals, birds and reptiles at least need to be honed. There are other specialized areas of identification such as of butterflies, moths, arachnids and larger insects that usually go with interested individuals. Emphasis on the following sites/habitat features needs to be placed since those surely are on the list of poachers. Further there is another consideration for avoidance of disturbance to those sites or microhabitats.

**These may include**

(a)Seasonal and perennial water sources of all descriptions and their immediate surrounds.
(b)Natural saltlicks or artificial if few of those have been created.
(c)Wallows which might be dry or muddy in use by species such as sambar, wild pig and few others
(d) Sites, if any, of primitive or specialized plants such as for example Drosera
(e) All riparian habitats whether they carry perennial flow, seasonal waterholes or otherwise
(f) Groves of old/ancient trees, especially trees with natural hollows. To cite an example, several species of owls reside in these. There is a whole list of superstitions relating to owls. Tantriks and Mantriks keep reinforcing such beliefs. It is easy to take out owls from such shelters. Hollows are used by several other species. Isolated large old trees also need to be in contention
(g) Pangolin is currently the most persecuted species and it could be driven to extinction if burrows in the ground including those by earth cuttings and slopes as and when discovered need to be put under the lens of protection. Porcupine also creates burrows in fact several such burrows lead to a large underground chamber. Dholes sometimes enlarge these to litter in such shelters. Hyenas and jackals also are known to use these. Burrows are often dug under rocky outcrops. Monitor lizards tend to use burrows as well as hollows in trees. They are greatly sought after by poachers. Unfortunately, we do not have surveys that indicate the extent of their poaching but they get into the news from time to time. Often species that are thought to be common can quickly get into serious trouble. Thus all species are important with those under threat need more attention

(h) Rocky shelters, aggregates of boulders, small ravines need to be part of vigilance.

(i) Vegetation patches, especially shrubby growth interspersed with open patches (wrongly called blanks) are favorites of ground nesting and ground dwelling birds like the grey junglefowl, quails, francolins, peafowl, spur fowl and other species. These are often snared and trapped. There is collateral

damage to species that are not on the list of poachers. Field personnel need to be familiar with snares, nets and the like including the mode of their engagement by poachers. What sites are selected, including forest roads, old extraction paths need to be known so these could be monitored.

(j) Among the large carnivores the species obviously targeted are tiger, leopard and sloth bear. All these species have their home ranges and if attention is paid to their tracks the areas of their usual presence would be known. A lot of rubbish has been spread about tiger pugmarks and their relevance to individual identities. The Wildlife Institute of India (WII) has published results of their authenticity after detailed investigations and records using modern analytical tools. The problem is with the observer and not with the pugmark—the observer has to be highly skilled. The skill can be acquired by practice.

Camera traps have their value for estimation of population of tigers. Cameras also can discover other species that are difficult to sight. However, there is no substitute for the on-board computer, a person's brain. The unfortunate fallout (not intended) of using camera traps is that the day to day monitoring of pugmarks and other wildlife related evidences have mostly been given up with reliance placed on the once in four-year exercise spread over some 20 States. Although the current task is regarding Kanhargaon, there are areas that do not have tigers but are important for conservation of other wild animals. The 'old fashioned' practice of knowing each compartment, its important features, changes taking place and the range of information- add habitats and micro habitats- cannot be bettered by automation and technology. Both come with a price. Besides pugmarks of tigers the skill for identifying those of other species, hoof prints, carnivore scats/droppings including those of herbivores, other signatures like remains of kills, other feeding signs including those of herbivores, rubbing posts, claw marks on tree boles, scrapes on the ground and burrows, nests and other shelters and knowledge of several other evidences needs to be developed and honed to precision by practice. The digital database is an excellent way for quickly scanning a host of management related information. All this has to be generated in the field. In other words all personnel need to be skilled in the art and science of field craft since it is not just about identification of signs and evidence but is a vital matter of piecing together an event or something that helps in extending investigation based on important clues.

(k) Kanhargaon WLS does not have villages inside, but the trouble will come from the outside. The system of gathering intelligence besides the employment of reliable Khabris needs to include alert field personnel. Eavesdropping on conversations at bus stations, shops of butches, vegetable vendors, and shops of persons that work with metals and saloons of barbers can be very profitable. One of the favoured methods to kill animals, sometimes even to poach around agricultural farms is to use illegal tapping of overhead electric lines. Throwing a wired clamp on these and leaving the electrified cable on the ground is the modus operandi. When an animal touches such cable, it receives a fatal shock and dies. This results in a short circuit and a section of line goes dead. Such power failure is investigated and remedied by the assigned staff of the electricity department. It is necessary to develop cooperation of such staff. When it is detected that the power has failed because of such

mischief then restoring power could be deliberately held back. This would cause inconvenience to many residents who are innocent in the matter of illegal tapping of power. Ultimately the persons indulging in such acts would be exposed. This is not likely to take inordinately long time. When the offender is exposed only then the power could be restored. This would severely discourage the perpetrator's habits. There is thus a need to have a pact with the local electricity distribution authority that the power will not be restored unless the innocent residents make a genuine effort to expose the culprits so that those responsible can be booked. This is also an offense under the laws that govern use of power. This will act as a strong message and an effective deterrent. Now a gadget has been developed to detect such illegally tapped cables.

(L) Staff on field duty needs to be adequately equipped. There are norms about the uniform and replacements must take place on schedule. The footwear is most important, so are the head gear, winter wear, and attire during the rainy season. For each patrolling camp there ought to be at least one portable metal detector in good working order that can be carried in the field. These are critically important to detect metal traps called gin traps manufactured locally. These are very popular with poachers engaged in trapping and killing tigers and leopards for clandestine trade. They are deployed in numbers and cleverly concealed and camouflaged just beneath the ground surface. Some of these are placed on paths regularly used by tigers which may also include forest roads. During the year 2004 tigers had become extinct in the Sariska tiger reserve in Rajasthan, mostly taken out by poachers using gin traps along such paths. Proximities of sensitive habitat sites also are popular for the purpose of laying traps. To become a proficient field person is to 'think like a poacher'. The kinds of traps and snares including lures that are used, the material that goes into their manufacture, their engagement and sites for placements, knowing members of local communities skilled in these are aspects that are important

for enhancing the efficiency of protection tasks. The standard items of equipment to be carried by a field person need to be listed. Some of these could be expensive like closed conference mobiles with multiple field assisting functions, M STriPES equipment, a cameras and a pair of binoculars. These and others like tape measures, bags for collecting specimen, torch, water bottle, sticking plaster and antiseptic lotion to treat minor wounds, tiger tracer and writing materials. Several are minor items but ultimately all need to be budgeted, some individually and some as miscellaneous bags.

Mobility: This will need planning for acquisition of vehicles—4WD for the Director and his assisting officers at HQ; a vehicle each for the three RFOs with trailers, motorcycles as necessary for the field staff, at least two one tonne trucks to support field tasks of frontline personnel, tractors with trailers and a tanker for habitat restoration work, maintenance of roads, firelines etc.

Communication: Wireless control and repeater towers (as necessary), mobile phones for closed conference and multiple functions. The other consideration could be acquisition of M-STrIPES equipment with Patrol, Ecological and Conflict modules.

Important entry points like Zaran, Tohgaon, Dhaba, Wamanpalli, Gujari and tourism road entry point will be manned during the day and if necessary suitable locking arrangement can be made to ensure security at other times

Wireless network also needs to be established in the area. Range headquarters, Protection huts, entry points and Division headquarter will have wireless tower mast and regular wireless sets. They will be called as Wireless stations and identified by suitable names. All the Beat guards will be provided Walki Talki sets for communication.

One four-wheeler for Mobile squad needs to be provided. Since the area is adjoining Gadchiroli District immediate provision of Fire arms is not proposed. Initially the field staff can be provided Fiber Lathi and Fiber Helmets for the use during field patrolling.

**Habitat-**

Habitat components-comprise of flora besides those of geomorphic origin hence protection factors can be segregated into illicit felling, illicit grazing, NTFP removal, and fires. Fire protection plan has been included in Annexure **XII.**

Poisoning of waterholes is also serious threat to wildlife.

Management of Old Teak Plantations

Kanhargaon Sanctuary being basically managed by FDCM recent plantations taken up the area was planted with Teak & 20 % area was left for development through NR. Therefore, the area planted with teak will need application of thinning as mentioned earlier wherein retention of miscellaneous advance growth will be given priority over Teak so that it won't develop into teak monoculture patch in future.

Traditional practices related to above factors needs to be compiled, studied and preventive measures need to be evolved.

**Wildlife-**

The sanctuary area is surrounded by the villages. The inhabitants are prominently forest dwellers therefore they are well acquainted with the surrounding habitat &wildlife. In the past they were enjoying benefits of forest produce for their basic needs and also indulging in hunting for their own consumption. Hence, they have very good knowledge of habitat and wildlife in the area. Over the years they developed foolproof modus operandi for procuring needed forest produce and also for procuring wildlife for own consumption. With the enactment of the Wildlife (Protection) Act, 1972 and inclusion of various species in different schedules the quantum of offences has reduced to some extent. After the establishment of Kanhargaon Sanctuary priority level for protection increases and there would be restrictions on movements, removal of forest produces etc. These will create animosity between the local people and the sanctuary staff and put pressure on field staff of the sanctuary.

Knowledge of traditional hunting techniques, traditional hunting locations, habitual hunters, poachers as lists have to be compiled to ensure effective protection by countering their methodology. Basic foot patrolling with the assistance of laid out patrolling paths supported by protection camps, protection gear and other technical & infrastructure inputs will definitely help to achieve the objectives of effective protection. Waterholes have to be

listed and classified as Sensitive and Normal as per their location, proximity to sensitive villages and feasibility of approach and preferred waterhole of wildlife. Concentration of wildlife at waterholes is usually after January as sources of water start declining hence it becomes the critical period for poaching. A patrolling protocol ensuring minimum visit by field staff every alternate day to Sensitive waterholes and twice weekly visits to normal waterholes has to be enforced.

Traditional practices related to above factors needs to be compiled, studied and preventive measures need to be evolved as has been stated

Both the theme plans will be elaborated further.

**Fires**

Though the Fire lines are in existence their regular maintenance needs to be adhered to. Watch towers need to be erected at strategic locations to monitor incidences of fire. For effective fire control, fire protection plan is proposed as under.

(i). 3 mtr. wide fire line on either side of roads, shall be cleared of vegetation.

(ii). 6 Mtr.wide internal fire lines along Range, Round, Beat & Compartment boundaries shall be cleared of vegetation.

(iii). 10 Mtr.wide fire line along border area adjoining to villages, revenue lands shall be cleared of vegetation.

Above mention operation must be completed before 15$^{th}$ of January each year. After inspection by officer not below the rank of ACF, these shall be burnt before 15$^{th}$ February.

(iv). All equippments like fire beator, power blower, water tankers, water pumps, flexible pipes etc. must be checked & made operational before fire season.

(v). Preventive provisions of law under sec.79 of IFA,1927 & rules made there under, punishments for violations of the provisions under IFA 1927 & WPA 1972 shall be depicted on boards at surrounding villages. Street signages depicting such warning shall be erected at suitable places.

(vi). Awareness trainings shall be imparted to VEDCs., Gramsabha before fire season.

(vii). Moha flower collection kit shall be provided to VEDC members (viii). Wireless stations & one Repeater station shall be established for fire alerts & other information exchange.

Table-6 Proposed Watch Towers / Fire observation Towers (60 feet Height )

| Sr.No | Location | Numbers |
|---|---|---|
| 1 | Comptt. no 16 | 1 |
| 2 | Comptt. no 50 | 1 |

| | | |
|---|---|---|
| 3 | Comptt. no 58 | 1 |
| 4 | Comptt. no 102 | 1 |
| 5 | Comptt. no 82 (old renovation) | 1 |

(ix). Hot shot crew of 6 members per range are proposed for effective fire prevention & protection.

(x). Fire watcher's minimum 2 per beat shall be engaged from 15th Feb to 15th June as per requirement.

Fire Lines: - Please see Annexure XII

Fire protection in case of Gregarious Bamboo flowering: -

Recently in 2019-2021 TATR observed gregarious Bamboo flowering. Kanhargaon sanctuary area being contiguous to TATR, such situation may occur in this area also. Fire protection scheme as approved for TATR in 2021, may be applied in principle with minor changes as required.

## 6.2 Theme plan for Habitat development.

### 6.2.1 Zonation of Sanctuary Area: -

This is a typical sanctuary where extensive area is treated under teak as well as non-teak plantations. More than 90% of the sanctuary area is covered by these plantations. As the rotation of teak is decided 80 years, it will be desirable to carry out thinnings as per the thinning regime prescribed by FDCM. The oldest teak plantation of FDCM is raised in the year 1970. As a pilot Management Strategy, it is decided to carry out no operations in the teak plantations more than 45 years old and hence these areas could be classified as core area. However, the plantations are scattered in many compartments irrespective of year of planting, it will not be possible to carve out core zone. In view of this, the sanctuary area is classified into two zones namely, Restoration Zone and Tourism Zone. The area of Restoration Zone will be 23423.898 ha. falling in 95 compartments while the Tourism Zone shall have an area of 3516.313 ha. in 10 compartments. The formation of core zone could be considered after analyzing the impact of treatment given in the 5-year period.

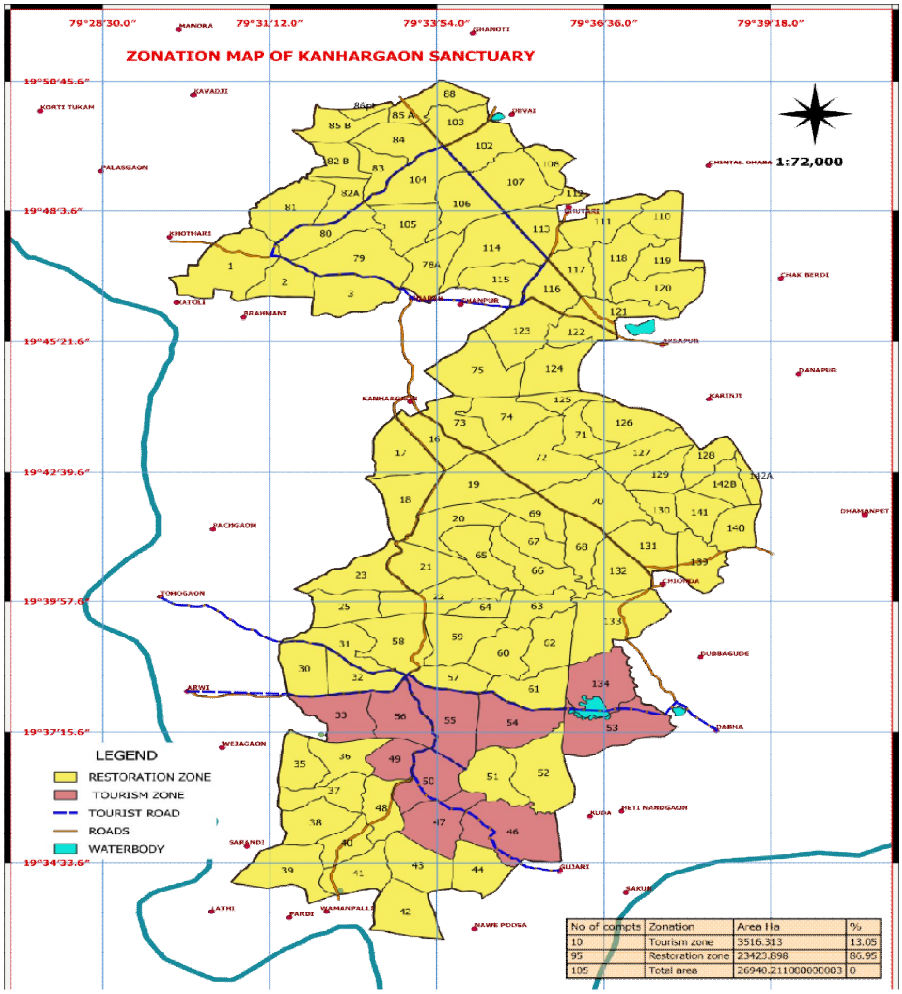



Fig.4- Proposed Management Zones

### 6.2.2 Creation of Buffer Zone:

The forest area surrounding the sanctuary is mostly incharge of FDCM with extensive teak and non-teak plantations. Hence, the proposed buffer zone and its management strategy will have to be developed in consultation with the FDCM Limited. A map indicating proposed buffer zone is reproduced below for information.

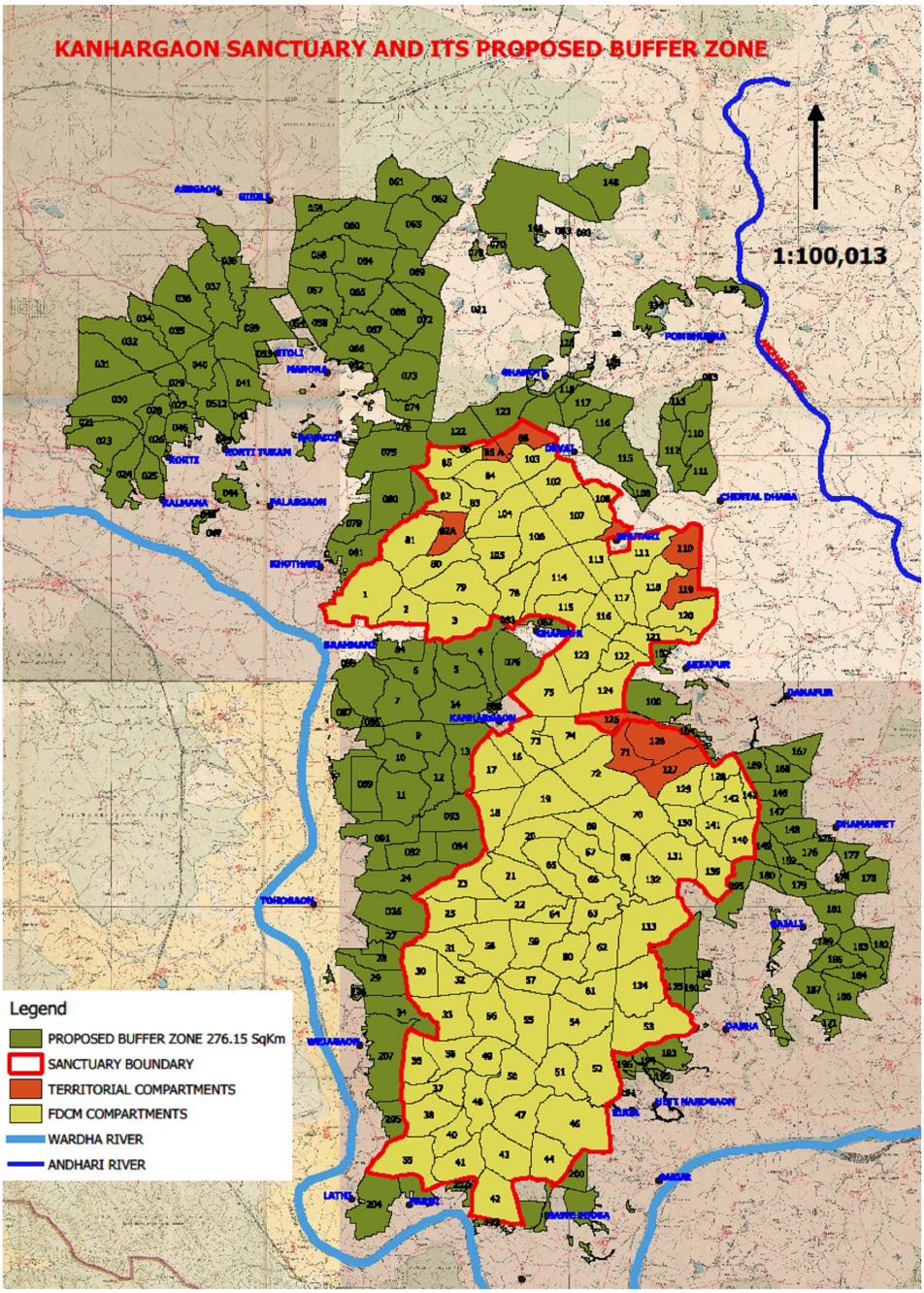



Fig.5 Proposed Buffer Zone

### 6.2.3 Habitat development.

The Sanctuary area extends over 269.04 Sq.Km. which is represented by FDCM managed area covering 95 Compartments admeasuring 251.381 Sq.Km .and Central Chanda Forest Division area of 10 Compartments admeasuring 18.021 Sq.Km. Therefore, the major area of the Sanctuary is represented by area managed by FDCM. Therefore, after much deliberations it was decided that delimiting a core area as per traditional concept of

Sanctuary management will not be feasible. Hence the entire Sanctuary has been delimited into two Zones namely Restoration Zone and Tourism Zone.

A Study was conducted by Dr. Umakant Deshmukh HOD Botany department Janata College Chandrapur in 15 Compartments by surveying the Flora in one Hectar sample plots to prepare inventory of the flora. Trees, Herbs, Shrubs in the plots were identified. Analysis of the data shows that total 320 species were found in the plots. That included 73 species of Trees, 178 species of Herbs and Shrubs, 40 species of climbers, 7 species of parasites, 1 species of Epiphyte and 1 species of Bamboo. Of the 73 tree species 62 species were of deciduous character and 11 species of evergreen character. Of all the tree species only 17 tree species were fruit and food providing species. Ficus species namely Ficus bengalensis, Ficus religiosa and Ficus racemosa were prominently absent in the plots. Analysis of the Data indicated that there is a prominent scarcity of evergreen and fruit providing species. Therefore, it is necessary to enrich the area with suitable evergreen species and fruit/food (flowers, leaves, bark and roots) providing species.

Evergreen species that provide shade even in Summer like Pongamia glabra, Lokhandi- Ixora species, Kusum- Schleria oleosa and fruit/food giving species like Jamun, Mango, Ficus species which are also evergreen need to be planted in the area. 1000 plants of these species need to be planted in each Beat every year of the plan period to enrich the area.

Also water courses need to be tackled to enrich the Riparian zone by planting shade and fruits species on both sides of the water course. At least 1 Km. area in each Beat should be tackled every year so as to enrich the habitat.

Soil and Moisture Conservation measures are also an important factor for improving land quality and water regime in the area. Provision of funds can be tapped from the sources of DPDC, Zillah parishad.

Bamboo is also an important component of the habitat which traditionally provides shelter and food to the wildlife. Gregarious flowering of Bamboo has commenced in parts of Chandrapur District and the same will occur in Kanhargaon Sanctuary also. The Bamboo Overlapping Working Circle has identified 11000 hectares area having Bamboo of the 30000 hectares area managed by the FDCM. Hence there is much scope to increase the area under Bamboo in the Sanctuary. Therefore, to improve the habitat, planting activity of sowing of Bamboo seed can also be resorted to in the area. Sowing through seed balls or direct sowing in the ground at distance of 4 Meters in late summer will ensure germination in monsoons and would further ensure development of Bamboo clumps subsequently.

Natural blanks or blanks in the plantation area can be identified and cleared off under growth and broadcasting of grass seed or planting of grass tussocks can be done to improve the representation of grasses in the habitat with species that are native to the sanctuary

Fire is a major hazard which destroys flora and fauna. Strict fire protection measures consisting of fire line network, fire detecting watch towers, fire watcher squads assisted by vehicles for rapid movements is necessary need to be established. Area when protected from fire also protects NR i.e. flora and young ones of wildlife therefore finally benefits the ecosystem.

Fire extinguishing by traditional method of beating the fire, use of blowers needs to be assisted by Tanker with attached suitable pump needs to be provided to achieve the objective. Infrastructure support communication gadgets, wireless, phone, vehicles, drones, to exactly locate the fire is also needed.

Ensuring adequate manpower to contain/control/extinguish fires

**Man- Animal Conflict.**

Kanhargaon Sanctuary comprises of nearly 95 percent area which is managed by the FDCM. Since major portion is under plantations, cattle grazing were not allowed and operations undertaken were executed by labor force of sizeable number so both these factors in a way automatically prevented conflict with wild animals. Cattle kills were few in number and Human conflict incidents were even less. There are no villages located in the Sanctuary and all the villages are located outside in the surrounding area which comprises of Central Chanda Forest Division and FDCM. So, conflict situation outside the Sanctuary will be handled by the Territorial staff and FDCM staff. After the creation of the Sanctuary the situation will definitely change. The Wild animal movements in the Sanctuary can change due to less human intrusions and to be on the safe side it is better to develop basic conflict handling capabilities in the local staff and providing necessary infrastructure like Trap cages Tranquilizing equipment like Blowpipe, Snare, Safety gear and Drugs which will have to be procured in the beginning. Tranquilizing Gun can be procured later.

A Rescue team comprising of 1 Range Forest Officer, 1 Forester, 3 Forest Guards and 3 Van Mazdoors can be pooled from the existing staff. They can be imparted training and made self-sufficient to handle local conflict situation if at all it arises.

**6.3 Theme Plan for restoration of habitat**

Kanhargaon Sanctuary may be the first of its type having extensive teak plantations as well as non-teak plantations from 1938 onwards. Hence the goal of managing the sanctuary is oriented for silviculture tending of extensive teak plantation to convert into ideal wildlife habitat.

**Management of Old Teak Plantations**

Kanhargaon Sanctuary being basically managed by FDCM recent plantations taken up the area was planted with Teak & 20 % area was left for development through NR. Therefore, the area planted with teak will need application of thinning wherein retention of miscellaneous advance growth will be given priority over Teak. so that it won't develop into teak monoculture patch in future.

**CROP COMPOSITION**

After Enumeration in sample plots each of size 0.1 ha the girth class wise distribution of trees of different species are recorded and analyzed. The data revels that the teak is dominant,

but in addition miscellaneous species also coming up thus maintaining the biodiversity of the area.

The Number of Plants per ha in this working circle. (**Annexures-V & VI**)

**TEAK PLANATATION MANAGEMENT WORKING CIRCLE**

Following types of areas constitutes this Working Circle

Table-7 Area under Teak Plantation W.C.

| Sr.No. | Particulars | Area in Ha. |
|---|---|---|
| 1 | Teak Plantations raised between period 1970 to 1987 by the FDCM Ltd. | 6658.026 |
| 2 | Old Teak Plantations raised by Forest Department from 1938 to 1979 | 0669.355 |
| 3 | Teak plantation between period 2002 to 2015 | 3873.073 |
| 4 | **Total area** of this working circle is | **11200.454** |

**Table-8 Area under Teak Plantation Reboisement W.C.**

| Sr.No. | Particulars | Area in Ha. |
|---|---|---|
| 1 | Teak Plantation Reboisement Working Circle | 3105.00 |

**(Source - Approved Management Plan of Central Chanda Forest Project, Division, Ballarshah,** *for 2016-17 to 2025-26)*

Plantation Area under various Management working Circlees are at (**Annexure-VII)**

**SPECIAL OBJECTIVES OF MANAGEMENT OF OLD PLANTATIONS**

**Thinning**

The area of FDCM is managed as per the guidelines of National Forest Policy of 1988 and the State Forest Policy of Maharashtra 2008. The Management Plan of Central Chanda FDCM which is based on above guidelines is approved by GOVT of India for 10 years from 2015-16 to 2025-26. The plan of operations includes the silvicultural thinning and harvesting of Over wood which is based on the retentions as per stand table, basal area, average crop girth, site quality and the crop composition approved by GoI in 1997. These operations are being followed by FDCM since its inception. It is pertinent to note that, the Management practices adopted by FDCM have been conducive for the Protection and Conservation of wildlife habitat, which led to the overall growth and rise in wild life population.

**Thinning Regime**

As per the sanctioned management plan of Central Chanda FDCM the thinning regime followed is as given below. The rotation of Teak is 80 years. Prior to thinning, cleaning operation is to be carried in the plantations. 1$^{St}$ silvicultural thinning: in the 10$^{th}$ year and subsequent silviculture thinning after every 5 years is undertaken depending upon the *basal area, average crop girth, critical crop girth, retention as per stand table, site quality and crop composition.*

**No operations will be carried out for plantations more than 45 years old.**

On the other hand, rest of the plantations below 45 years, thinning and cultural operations will be undertaken as per the prescribed schedule and practices of FDCM. In short, the thinning regime and thinning area listed out in Annexure **VIII).** ***Appendix XVIII*** *of the Management Plan of Central Chanda, FDCM Division)* shall be implemented for the first eight thinning or completing the age of 45 years from plantation. The thinning data of 2018-19 & 2019-20 is produced below for yield of teak and non-teak forest produce. (**Annexure IX & X)**

**Monitoring**

While undertaking thinning operations, monitoring of thinned and un-thinned areas is very essential to determine sustainability of these activities. Representative Sample plots or transact lines in different compartments of thinning areas should be laid out to monitor the plant population (Teak and miscellaneous) and the growth as well as wild life indications. This will be the basis of future wild life management.

-------0000----

## CHAPTER-VII Eco tourism, Nature Interpretation and Nature Education.

**7. Eco tourism, Nature Interpretation and Nature Education**.

The Sanctuary is located in the vicinity of Ballarshah, Rajura and Chamorshi along a section of the Ballarshah Allapalli Sironcha state highway hence can conveniently attract visitors.

The Sanctuary can be an additional attraction to Tadoba-Andhari Tiger Reserve and hopefully can reduce some tourism pressure of Tadoba-Andhari Tiger Reserve in the near future.

Promotion of Ecotourism is useful to provide supportive livelihood opportunities to the local communities. Two locations namely Zaran and Dhabha are the potential locations to establish Ecotourism Complex. Visitors approaching from Chandrapur and Ballarsha can avail facilities provided at Zaran and visitors approaching from Gondpimpri, Allapalli, Sironcha and Telanga state can avail facilities at Dhabha.

Ecotourism Complex will comprise of Nature Interpretation cum Education Centre with a canteen, resting facilities and toilet blocks. Facilities for overnight stay in form of tourist huts are also essential as a service to visitors. Considering the potential visitor flow from Chandrapur and Ballarsha to start with at least 5 Tourist Huts need to be established at Zaran.

At Dhabha a similar unit but a smaller version of Ecotourism Complex can be established in the area of the existing Range Office. To start with for an overnight stay instead of visitor huts local people can be facilitated to develop Home Stay facilities.

Nature Trails of 1 km length each can be established near Zaran and Dhabha complexes. These can be designed to be self guided trails with proper signage carrying a number each with corresponding information on a printed handout. Another nature trail exceeding 2 km length can be laid through the habitat starting in the proximity of the complexes as guided trails with trained local guides. These trails could be circular in shape. A Nature Canopy trail is recommended at Zaran suitably located near the visitor complex.
Tourism is restricted to three parts in sanctuary.

**Part I (In Restoration Zone)** Maximum length of tract is right of way-Highway Ballarshah-Alapalli, Village road -Kothari to Dewai & Aksapur to Pombhurna)

**Table-9 Toursim Routes**

| Starting Point | End Point | Route | Particulars |
|---|---|---|---|
| Zaran -Dewai Joint, Check Post on Kothara – Gondpipari Highway | Zaran Village | Dewai Joint to Dewai village Tar road. Dewai village to Dewai Talav & back to Dewai village & continue on murum road along Fire line upto Bhatari village. Bhatari village to Zaran Tar road. | Wild animal sighting, Watch tower at Dewai talav.Teak vegetation, Visit to Interpretation Centre at Zaran. |

**Part II (Tourism Zone)**

| Starting Point | End Point | Route | Particulars |
|---|---|---|---|
| Tohogaon Village | Tohogaon village | Tohogaon to Arvi Tar road in buffer area, Camp IV, Forest pond, Watch Tower & back to Camp IV, Return journey via Arvi village to Tohogaon | Wild animal sighting, Watch tower at Forest pond. Camp No.IV-. - Old pattern barracks of Open Jail for then prisoners. |

**Zone III (Tourism Zone)**

| Starting Point | End Point | Route | Particulars |
|---|---|---|---|
| Dhaba Village | Dhaba village | Dhaba to Talav,Watch Tower, Camp IV, -to Comptt.No 41 Return journey via Gujari village to Dhaba | Wild animal sighting, Watch tower at Dhaba Talav - Camp No.IV.- Old pattern barracks of Open Jail for then prisoners. |

Tourism route passes through following compartments

Part I (Restoration Zone) : (Excluding Highway Kothari to Gondpipari)

Comptt.Nos.80,82,83,84,102,107,113,116

Part II (Tourism Zone) : Comptt.Nos. 30,32,56,33.

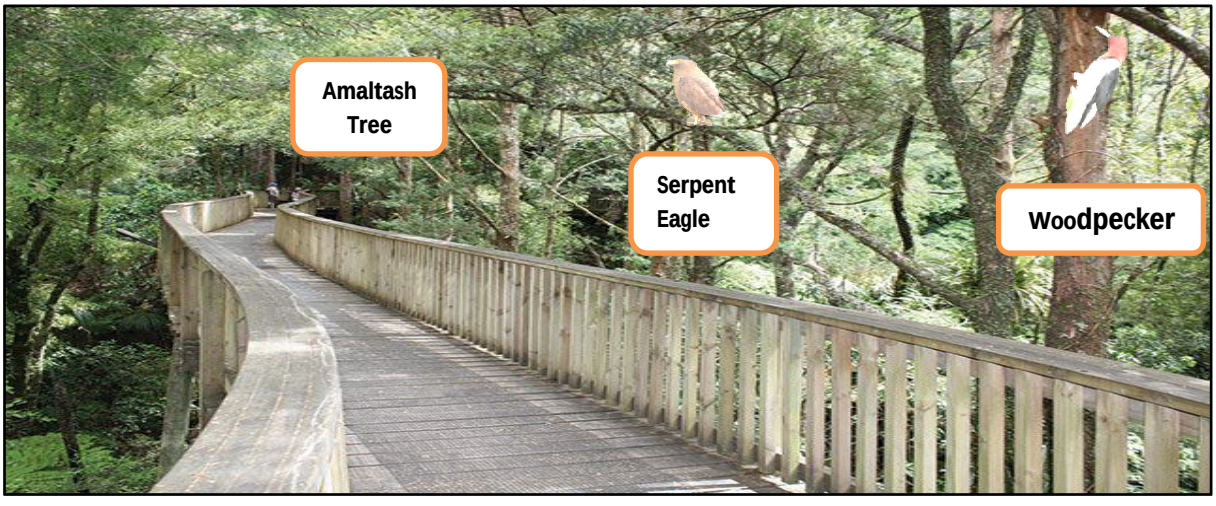
Part III (Tourism Zone) : Comptt.Nos. 53,54,55,50,47,46.

Total area of Tourism Zone = 4010.43

Area of Tourism Zone -13.05 % of total area. (Admissible 20%)

Provision of one Minibus for Visitors can be made which can be stationed at Zaran. Local villagers can be encouraged to ply Gypsy or Jeeps also.

**Proposed Canopy Trail at Camp Zaran**



Teak wood, harvested in thinning shall be used for construction of the Canopy Trail near Old Kanhargaon open jail campus. This trail will be passing through various tree species available there. Length of trail shall not be more than 50 mtrs. It shall be fully covered to avoid any accidents. The piers of trails shall rest on cement concrete platform to avoid termite attacks. The signages of birds, including migratory birds & tree species shall be depicted on quality wooden boards hung from rust proof steel chains. Bird sculptures shall be made out of wood & painted with high quality paints to look natural. Two sets of such sculptures shall be procured to replace any damage in future. During rains these sculptures shall be covered with light aluminum boxes.

Existing Fossils lying unattended in the area will be collected and displayed at the Ecotourism Complex with proper Information and signages. The fossils need to be displayed both at Zaran and also at Dhabha. These could be arranged on raised circular platform/s

The traditional Eco tourism activities like Jungle Safari, walking nature trails, wildlife sightings, bird watching can be promoted to provide rewarding wilderness experience to visitors. The principles followed in TATR will be applied for regulating the tourism activities. Jungle safari in a regulated manner can be allowed in the Restoration zone and nature trails, use of machans/watch towers and the canopy trail can be provided in the Tourism zone.

Creation of Nature interpretation center highlighting the natural ecosystems, wildlife, the historic importance of the area and the traditional lifestyle of the local people will provide diverse glimpses of the sanctuary to enlighten the visitors of the values of the protected area

Providing training to the local youths to become effective nature guides is essential. Members of the local community need to be fully involved in all ecotourism strategies and for that besides the guides they need to be trained in different aspects of visitor management. This will go a long way in empowering them, in identifying themselves with the stakes of sanctuary management and more—the economic gains. With such training and under the supervision of management staff they can set an example as ambassadors of wildlife conservation

The local community members will need help in obtaining soft loans to acquire safari vehicles and in establishing home stay facilities of some standard. Local community owned vehicles need to be given priority in safari activities.

It is essential to set a reasonable limit on the number of vehicles allowed in safari in order to avoid future problems. There are no equations for calculating carrying capacity. It is best to use the leasrning from other visitor crowded PAs and set the limit for vehicles at one vehicle per 2.5 $km^2$ area in which safaris are allowed.

**-----0000------**

## CHAPTER-VIII Eco Development

### 8. Eco Development

Since the creation of the Sanctuary has brought a dramatic change in the life of the locals it is very necessary to assess the actual benefit which the locals used to enjoy from the FDCM activities. It is also necessary to identify the villages which were directly dependent on the FDCM activities. Roughly villages within 5 kms radius and 10 Kms radius should be delineated so as to focus on them. The basic issue to be handled will be of providing gainful employment to the work force that was engaged in the FDCM activities. Further due to the creation of Sanctuary the villagers should be able to enjoy benefits of Eco Tourism and Eco Development.

Villages within the zone of influence of 5 kms radius around the Sanctuary were considered. There are 29 villages located in 3 tahasils, namely Ballarsha, Pombhurna and Gondpimpri.

Ballarsha -1] Kothari, 2] Bamni.

Pombhurna- 1] Bhatadi, 2] Devai, 3] Kamara. 4] Chintaldhabha.

Gondpimpri- 1] Berdi, 2] Aksapur, 3] Danapur, 4] Chivanda, 5] Gojali Chek Naka, 6] Dubarpeth, 7] Dhabha, 8] Kuda, 9] Gujari, 10] Podsa, 11] Wamanpalli, 12] Pardi, 13] Lathi, 14] Sarandi, 15] Vedgaon, 16] Arvi, 17] Tohogaon, 18] Pachgaon, 19] Parsodi, 20] Kudesavali, 21] Ganpur, 22] Kanhargaon, 23] Karanji.

During the plan period every year 6 villages will be taken up under Eco Development scheme and in the last year 5 villages.

The village population when considered, 70 percent is represented by Agriculturists and 30 percent by Landless. Major component of Landless was employed in forestry operations carried out by the FDCM. Therefore, creating Livelihood options under Eco Development becomes all the more necessary.

### 8.1 Objectives of Eco Development

(1) Improving the natural resources in the surrounding area of the villages so as to fulfill the basic needs of fuel, small timber and fodder.

(2) Villages within 5 Km. radius will be given priority for implementing scheme under Village Eco-development.

(3) Compiling demographic and economic data of people and their dependency on natural resources for basic needs and economic requirements and identify income categories of families and families Below Poverty Line (BPL) for focusing on inputs to the needy families.

(4) Provide livelihood alternatives for various categories of people including families of BPL on priority.

(5) Examine and provide suitable alternatives for consumption of fuel, small timber, fodder, and other needs dependent on Sanctuary resources.

(6) Involve woman folk in developing skills so as to augment family income through formation of Self-Help Groups (SHG).

(7) To develop infrastructure to meet the inherent requirements of the village and also provide revenue to the Village Eco Development (VED) committee.

**8.2 Strategies**

(1) Preparing Eco Development Plan for each village located within 5 Km. radius. There are 29 villages listed before under **8**

(2) As per the demographic and economic data of the village proper selection of developments schemes.

(3) Finalizing the schemes to be implemented after proper discussion with the villagers.

(4) Selection of beneficiaries after considering the data of Economic status and discussion with the villagers (VED committee).

(5) Enhancement of income should be the main thrust of the scheme through increased production, value addition of local produce and providing marketing facilities.

(6) Creation of Corpus fund which can be initiated through TATR foundation seed money and further augmented by contribution of fixed percentage from the beneficiaries to ensure its viability.

(7) Tap sources of DPDC, other Government agencies to ensure adequate funds.

(8) Decide a hand holding period for the schemes implementation and subsequently handing over to the beneficiary.

(9) Regular monitoring and follow up of the progress of the scheme should be ensured by prescribing monthly evaluation.

**8.3 Proposed activities**

(1) Improve the water regime of the village through water conservation structures SMC, Gabian and Cement bunds etc.

(2) To phase out the use of small timber by providing alternatives on subsidy like Iron plough, Iron Bullock carts and House roof components Iron purlins and other members.

(3) Provide alternative for fuel wood like Biogas, LPG and improved Chulla etc.

(4) Provide technical guidance to improve agricultural production with shift to organic farming and optimum land and water use through modern practices of Drip irrigation etc.

(5) Augment family income by participation in Eco Tourism through (a) Home stay (b) Operating safari vehicles (c) Providing refreshments through Canteen.

(6) Providing infrastructure for camping facilities which can be handled through VED committee.

(7) Forming woman Self Help Groups and encourage Gruha Udyog products like Pickles, Jams, Papad and other dry food stuff and providing infrastructure and training to ensure hygiene and quality and packaging.

(8) Providing vocational training to village youths in trades like Driving, Vehicle repair and other similar occupations.

(9) Initiate horticultural crop production through Agricultural Department schemes for Grafted Mango, Drumstick, Sitaphal, Dalimb, Anjir etc.

(10) Provide technical guidance to agriculturists for Silk production by raising Mulberry plants, Larva production and harvesting Cocoons and processing through Khadi Gram Udyog, KVIC (Khadi village industries corporations).

(11) Providing training in nature interpretation and education knowledge to local youths so as to work as nature guides to the visitors coming to the Sanctuary.

(12) Provide infrastructure facilities for improve management of (a) Motor pumps on Dug wells and Bore wells (b) Thresher Machine (c) Flour mill (d) Farm ponds for irrigation and Fish culture.

**------0000------**

## CHAPTER-IX Research, Monitoring & Training

### 9. Research-

The sanctuaries may not necessarily be pristine areas, but are recently created with the objective of wildlife conservation for future. These have been created on the basis of natural values by carving out available suitable reserve forest lands that provide habitats to a wide range of species of flora & fauna. It is essential to address conservation of native species pf plants, animals and ecosystems. Thus research and monitoring as relevant need to be considered

The area included in the Kanhargaon sanctuary was managed earlier since the formation of the Central Chanda forest division under successive working plans. Since 1970, to promote enhanced utilisation of forest produce to maximize timber production to enhance revenue resulted in creation of monoculture stands mainly of teak and to some extent of non teak tree species choosing tracts of miscellaneous forests wherever possible

The area as part of the Central Chanda forest division has had a long history of protection. The population estimation/census data for larger mammals reveals stable populations with status of the tiger and leopard improving, possibly because of the source population in the Tadoba Andhari Tiger reserve. This could not have happened without the increase in the prey population for the same reasons.

"Assessment of the extent of support of local inhabitants in protection & conservation, the positive and negative impacts of various other factors needs research. Research needs to be something that can directly contribute towards improvement of management. In simple term research needs to be interpreted in a broad sense that includes management interventions and well thought out experiments."

(A Guide to Planning Wildlife Management in Protected Areas & Managed Landscapes, 2005; WII and Natraj Publishers)

### 9.1 Surveys & Inventories

In this context surveys & inventories are formulated in accordance with the various plan objectives, issues and problems.

A. Flora & Fauna
   - i) Check list of existing flora
   - ii) Check list of existing fauna
   - iii) Check list of migratory birds
   - iv) Check list of butterflies.

B. Crop composition

   i) Teak dominance area- Miscellaneous spp. less than 30 %

ii) Mix species area- Teak spp. less than 30 %
iii) Open patches- More than 1 Ha.
iv) Grass lands- More than 1 Ha.
v) Bamboo area.
vi) Wetlands

C. Water bodies
i) Perennial
ii) Seasonal- (Natural/ Artificial)

D. Man- animal conflicts

i) Impact of prey/predator species on agriculture - crop raiding & live-stock loss.
ii) Impact of poaching of wild animals.

E. Prey-predator status

F. Compilation of extensive knowledge from local peoples. Of traditional practices that affect wildlife and its habitat.

- Digitisation & updating inventories.

Digital Field Guide of the species, at least available in the sanctuary area shall be prepared & provided to every forest officer working in the field. Newly recruited forester can easily identify the species in field, using such software applications. This field guide shall be updated yearly.

- Crop composition-

Though crop composition is marked on toposheets/digital maps, need periodic updating. A forest Guard while patrolling in his area can verify & update this information. Every Forest guard needs to be provided G.P.S. / **MSTrIPES.** Preferably he will traverse the area as mentioned below & submit its polygon/location to the Data Operator.

- 1. Wetland, 2. Open patches, 3. Grass lands, 4. Bamboo areas, 5. Non-Teak areas 6. Teak areas. This ground truthing can be compared with google images/ digital maps for realistic position of crop composition.

  (This work shall be completed within 4 months i.e. preferably Jan.to April.)
- Location of water bodies in each compartment ( perennial & seasonal)
- Polygon of the worked Teak Plantations i.e. silvicultural thinning in each year.
- Location of illicit felling, illegal grazing, illegal removal of NTFP, poaching, polygon of fire area.
- Watch towers at water bodies, predator movement tracks under surveillance of trap cameras will provide population data of prey & predator.

All the collected data must be uploaded in "Central Monitoring System" established at the office of DCF/DFO.

These ongoing activities throughout the year will provide factual inputs for research, analysis & further review of management interventions. First five years are crucial for collection of various data.

### 9.2 Data analysis

Results of such data analysis are the basis for future management, scientific interventions & experiments. -

- Study on behaviour, habitat, feeding habits etc. of wild animals.
- Population ecology and feeding behaviour of ungulates.
- Study of flora and monitoring the temporal changes in floristic composition including vegetation dynamics.
- Study of fauna of sanctuary and monitoring their population.
- Impact of habitat changes on population of wildlife.
- Study of and monitoring endangered species.
- Study on intraspecific and interspecific competition.
- Study on reproductive behaviour of carnivores and ungulates.
- Study on wild life diseases including causes of death.
- Socio-economic impacts on fringe communities of the sanctuary.
- Impact of tourism on biodiversity conservation.

### 9.3 Monitoring

- Monitoring and evaluation should refer back to existing baseline data or begin with a baseline study. It is an integral part of programme implementation. Monitoring information should be used in decision-making.
- It requires continuous access to field data, baseline research conclusions, proper use of technology, review of habitat development prescriptions & level of implementation.
- **MSTrIPES (Monitoring System: Intensive Protection and Ecological Status)**
- Currently the tiger reserves carry out law enforcement and ecological monitoring activities at regular interval, but the information generated is ad hoc and is rarely available to the tiger reserve managers in a format for informed decision making in an adaptive management framework. The "M-STrIPES" has been designed to addresses this void. It is a platform where modern technology is used to assist effective patrolling, assess ecological status and mitigate human-wildlife conflict in and around tiger reserves. This system should be applied in sanctuary area also.
- The MSTrIPES program uses Global Positioning System (GPS), General Packet Radio Services (GPRS), and remote sensing, to collect information from the field, creates a database using modern Information Technology (IT) based tools, analyses the

information using GIS and statistical tools to provide inferences that allow protected area managers to better manage their wildlife resources.

- **Patrol module**

  The patrol module maintains a spatial database of patrol track logs, crime scenes with geotagged photographs and important observations made by field staff while on different types of patrol duties. The phone app allows visualization of all patrols in real time across the country when in cellular network connectivity. It also permits the guard to send geotagged location data to specified phone numbers in case of emergency (SOS) function. The mobile app can continue to operate in areas without phone network by using the phone's inbuilt GPS and preloaded base maps.

- **Ecological Module**

The tiger reserves of India use a set of standardized protocols for ecological monitoring by field staff which include the following components:

1) Occupancy of carnivores and large ungulates,
2) Abundance estimation of ungulates,
3) Assessment of anthropogenic impacts and
4) Habitat assessment.

- The ecological monitoring comprising of above components are implemented across the country at a spatial resolution of 20 square km every four years and twice annually within all tiger reserves can also be adopted for the Sanctuary.

- **Conflict Module**

  The conflict module of MSTrIPES addresses data recording, achieving, geotagging, and spatial analysis of human-wildlife conflict details. The app has provision for recording the details of attacks on humans, attacks on livestock, crop damage and property damage. This information on location, with spatially referenced photo-evidence, and extent of conflict allows wildlife managers to mitigate conflict with appropriate interventions.

- Monitoring in-situ conservation & ex-situ medicinal plantations raised under National Medicinal Plant Board. **(Appendix XI &XII)**

  Role of Forest officer monitoring such data.

  - Monthly, quarterly, yearly compilation & analysis. Review of Control Forms (1 to 10) & Compartment History**. (Appendix XIII to XXIII)**
  - Follow up for timely & proper work execution.
  - Assessment of duties & responsibilities discharged by field officers.

If google forms are designed for particular activities, data compilation is easy & instant abstract can be available for assessment, analysis & follow-up.

A digital display board at Division office depicting all such field analysis data may help in smooth & proper management.

### 9.4 Library-

Use of pertinent literature, ongoing research conclusions, periodicals, journals, guidelines for scat and forensic evidence collection etc. help to update management practices. A reasonably good library including hard & soft copies must be established in consultations with WII & subject experts at each Range office.

Following books/Guidelines are compulsory.

- All amended forest Acts & rules thereunder
- All amended Forest Manuals.
- Amended Indian penal Code 1860
- Amended CrP.C.1973
- Indian Evidence Act 1860
- Amended Land Revenue Code 1966
- Foresters Companion by A.R. Maslekar
- Maharashtra Forest Records No.II, (Silviculture) Yield & Stand Tables by Tasneem Ahmad.
- Continuous interactions with local inhabitants, JFMCs, VEDCs, NGOs & other Govt. agencies provide valuable inputs to help in restructuring participatory management.

### 9.5 Training

Sanctuary staff will have to become better planners, coordinators, motivators and researchers. Participatory management approaches involving multiple stakeholders, and greater responsibility sharing with buffer village communities will become essential. These changes will demand substantial retraining and capacity building of the assigned staff and key stakeholders. Focus should be on issue based rather than general training module. Priorities are mentioned as -

1) Application of laws and regulations.

Before posting of field staff (Forest Guard to Range Forest Officer) 15 days training must be organised. It should be more precise & selective.

- Legal terminology of Protected Areas, Definitions u/sec.2 of IFA1927 & WL(P)A 1972
- Core, Buffer, Critical Tiger Habitat, Eco-sensitive Zone
- Duties & responsibilities mentioned in MFM 2020

- Beat Inspections.
- Investigations into Forest & Wildlife offences.
- Powers to forest officers under Acts & Notifications
- Application of legal provisions under Cr.P.C.1973, Indian Evidence Act 1872.
- Use of advance technologies like CDR, Forest Cyber cell.

2) Protection of flora & fauna including intelligence gathering network.

- Use of digital inventories & its application in identification.
- Modus operandi of criminals involved in smuggling of forest flora & fauna.
- Identification of derivatives made out of forest flora & fauna.
- Information gathering of local "Vaidu", Doctors, "Sarp Mitra" dealing in medication & other health care treatments based on forest herbs.
- Use of "Secret Funds"
- Procedure of checking of forest produce at Check Posts.
- Interception of suspected vehicles, containers with the help of Police & Road Transport authorities.
- Compilation of list of poachers, dealers in wildlife trade as per guidelines of WCCB.
- Continuous information sharing with forest authorities in adjoining States.

3) Fire-fighting & firearms handling.

- Sensitive fire prone area marking.
- Marking of area abundant in Tendu leaves, Moha trees, Honey comb.
- Fire lines concept & its maintenance.
- Fire equipment handling & precautions.
- Awareness creation through VEDCs established in fringe areas.
- Surveillance using advance technology like "Drone."
- Fire arms handling, maintenance, legal procedure, powers & protection.
- Establishment of Fire arms custody at safe place, as area is "Naxal" prone.

4) Chemical immobilization, veterinary care, rescue & shifting of Wild-animals.

- Rescue, handling, & shifting techniques.
- Handling of immobilization instruments & preliminary veterinary care.
- Maintenance of various types of cages used for trap, squeeze, transport & release in suitable habitat.

5) Disaster management. (In particular wild animal- human conflict)-

Human habitations in most of the "Buffer" area around the sanctuary are facing wild animal attacks which take place at such interface. As a consequence the field staff has to face some difficult situations but there is no getting away from these and the personnel need to be trained in all procedural matters.

The demand for land has always been high and with increasing human population this is on the rise. Encroachment is a serious issue and all management personnel need to be vigilant and trained to handle such situations according to law while respecting the emotions of people. Disaster management & rapid action training at National Fire Service is

recommended and availing online training at the National Institute of Disaster Management. Training in resource mapping would be most useful.

6) Using standard techniques for monitoring populations of larger mammals including identification of wildlife signs and evidences and bird watching is important part of training and monitoring
    - Training in the use of line transects survey, the installation and using camera traps is arranged by WII.

7) Collection, preservation of various specimens of plants as a herbarium is very useful. Others include collection of animal remains, skeletal or otherwise, droppings of carnivores and herbivores for identification, research & where relevant for forensic analysis is important. This would entail

- Preservation procedure of plant specimens & preparation of herbarium.
- Scat and pellet collection & preservation.
- For specimens collection technique for forensic analysis specific guidelines are issued by the LaCONES laboratory at Hyderabad.
- Live-stock Development Officer/Veterinary Doctor are authorities to collect samples of internal organs (The visceral organs are liver, kidney, lung, spleen, lymph node, intestine **etc**. & for diseases, lesions like nodules, tumours, cysts, ulcers, necrosis, haemorrhage **etc**.). Forest officer/ Investigation officer has to collect all other external specimens (blood, skin, hair, excreta, vomit, urine, bones, nails etc.) A good "Investigation Kit" including sterile containers, bags, preservatives must be provided to each field forest officer for proper forensic sample collection.
- Sealing of specimen as an evidence is most crucial factor in crime investigation. Unfortunately, seals are not provided to field staff. Specific personal seal to every forest guard, forester, RFO & ACF must be supplied.
- Director**,**Regional Forensic Science Laboratory,Nagpur, Maharashtra has recently established DNA profile analysis laboratory for Wildlife specimen identification. One day training can be organised in consultation with them.

7) Habitat interventions for water, food & shelter of wild animals.

Field training for water body designing, construction, maintenance will improve water resources. Quality of stagnated water shall invariably be tested to avoid diseases. Natural water courses shall not be ameliorated with cement concrete structures. Soil bunds to arrest water wherever possible is the best solution. Some Forest ponds 3 m. deep exist in sanctuary area. Water in such structures is beyond the reach of wild animals. It needs to be ascertained whether these deep ponds are a threat from drowning. If so these need to be filled up by soil and rocks or dug from one side to provide risk free gently sloping access. Saucer shape shallow waterbodies are most desirable.

- Experienced forest officers/ Rtd. forest officer may be engaged for such field training.

8) Eco-tourism & participatory management.

Forest department should avoid direct involvement in tourism activities. Its role should be as a regulatory authority. Visitor activities must be monitored to avoid indiscipline and harassment of animals. It must be ensured that visitors get the desired wilderness experience. Forest personnel need to be visible in going about such tasks. Wildlife managers at different levels as relevant to the tasks need to be involved in nature interpretation, awareness building, and facilitating participatory ventures. The wildlife manager's role in ensuring training of stakeholders, visitor complex management, home stay services, hospitality, maintaining standards of lodging, quality service by tourist guides, transport facilities, First- aid availability and the like is expected. "YASHADA", Pune is the prime institution to organize such specialized training.

11). Sustainable livelihood development of stake holders.

Training for preparation of Micro-plans under VEDC & Shamaprasad Jan-Van Yojana is basic need are relevant. These plans need to consider the educational status, traditional skills of villagers, resource availability & financial support. Conflict ridden issues like grazing, need for green bamboo & small timber, collection of seasonal edible produce from forest can be resolved through convergence with other concerned Government & Non-Government organisations.

12) Joint trainings for members from line departments, Tours & Travels, NGOs and staff to learn about and discuss issues of mutual concern will improve coordination, and develop cross cultural understanding.

13) Short term sensitization & refresher courses for frontline staff should invariably be held once in six months in consultation with WII & subject experts.

-----0000-----

## CHAPTER-X Organization and Administration.

Almost The entire area of sanctuary is managed by the Forest Development Corporation of Maharashtra with prime objective for increasing the timber productivity of forests by using improved technology in raising teak and to a lesser extent non teak plantations and to maintain the same on sustained yield basis. FDCM has its own recruited frontline staff to discharge assigned responsibilities of wood harvesting & replacement of inferior timber yielding natural crop with commercial Teak plantations.

Sudden change in policy & status of area with the prime objective of wildlife management switching to the new responsibilities is not easy Such change cannot be brought about without technically sound, trained and experienced staff in wildlife management. The task is still more difficult in consideration of the ecological response

### 10.1 Administrative Status

This area presently under the control of FDCM is managed by 4 Territorial Ranges which includes 16 forest rounds and 33 forest beats. It is proposed to rearrange this structure to meet the objectives of the sanctuary.

Table-10 Reorganized Range, Round & Beats

| Sr.No. | Range | Round | Beat | Comptt.No's. | Total Area (Ha.) |
|---|---|---|---|---|---|
| 1 | Kanhargaon | 4 | 10 | 38 | 8900.927 |
| 2 | Tohogaon | 4 | 9 | 32 | 8389.957 |
| 3 | Dhaba | 5 | 11 | 35 | 9649.327 |
| **Total** | **3** | **13** | **30** | **105** | **26940.211** |

Table-11 Proposed Staff Structure

| Sr.No. | Category | Number | Remarks |
|---|---|---|---|
| 1. | Divisional Forest Officer/ Field Director | 1 | Preferably wildlife trained. |
| 2. | Assistant Conservator | 2 | 1- Field<br>1-Research- wildlife trained. |
| 3. | Office superintendent | 1 | 1- For Division office |
| 4. | Chief Accountant | 1 | 1- For Division office |
| 5. | Accountants | 6 | 3-For Division office<br>3- For Range office |
| 6. | Clerks | 7 | 4-For Division office<br>3- For Range office |

| | | | |
|---|---|---|---|
| 7. | Data Operator | 5 | Division Oggice-2<br>Range Office-3 |
| 8 | Range Forest Officers | 5 | 3- (Range)-2 wildlife trained.<br>1-Eco-Tourism<br>1-QRT (Quick Response Team) |
| 9. | Forester | 14 | 10-Round<br>2- Eco-Tourism<br>2- QRT (Quick Response Team) |
| 10 | Forest Guards | 42 | 28- Beat<br>4- Eco-Tourism<br>4-QRT (Quick Response Team)<br>6- Check-Post |
| 11. | Driver | 10 | 1-FD,2-ACF,5-RFO<br>2- Tourists vehicle |
| 12. | Naik | 1 | Division office |
| 13. | Peon | 2 | Division office |
| 14. | Watchman | 4 | 2-Division office<br>2-Inspection Huts / Rest House |
| 15. | Assistant | 1 | Division office |
| 16. | Cleaner | 3 | Division office-2<br>Rest House- 1 |
| 17. | Vanmazur/ Beat helper | 59 | Range-45<br>Check Post-12<br>QRT-2 |
| | **Total** | **164** | |

**10.2 Responsibilities & duties: -**

Responsibilities & functions assigned to various forest officers and employees are mentioned in Chapter II of Maharashtra Forest Manual 2020.

Legal powers are delegated to various cadres i.e. from Forest Guard to APCCF as under

1. Indian Forest Act.1927 (Maharashtra Amendment 2015)
   Notification dated 21st May 2013 & dated 22nd July2015
2. Wildlife (Protection) Act.1972
   Notification dated 21st July 2013 & order by CWLW dated 26th July2013
3. Responsibilities and powers are also delegated to forest officers implementing participatory management under the schemes of Maharashtra State Govt.-
   i) Joint Forest Management
   ii) Village Eco-development
   iii) Shamaprasd Mukharjee jan-van scheme

**10.3 Amenities: -**

- Organization must provide essential amenities like housing, communication, field equipment, uniforms, medical facilities.
  Details of accommodation requirement is annexed as (**Annexure**-XV**)**
- Special pay for field staff serving in remote areas.
- Citations and awards must be used appropriately to motivate staff and officers. They are a token of recognition of good work and have great value.
- Principal Chief Conservator of Forests (Head of Forest Force) Maharashtra State has issued circular dated 19th March 2021 for felicitation of field staff for commendable work into protection of forests & investigation into forest offences.

------0000----

# CHAPTER-XI Management Plan Budget for Kanhargaon Wildlife

## 11.0 Introduction

This management plan for Kanhargaon WLS has been prepared to support all activities envisaged under various chapters that have implications for a budget

The plan document begins with details of the topics from the land, climate, forest, vegetation, animals, and the surroundings; understanding nature of multiple risks and setting the stage for broader and more focused management interventions through its content.

The plan aims to provide strategic fiduciary advice and guideline to help managers and administrators, to help understand, adapt, and build a vision for protection, conservation and development of wildlife in the sanctuary that has important location in the central Indian landscape.

The budget design is specifically structured towards implementation of conservation management strategies and proposals contained in the plan in support of wildlife habitat design and its interface with public and the tourists who have great expectations from this new wilderness that that has unique features

## 11.2 Factors governing this budget

This plan is the first one of its kind prepared specifically to manage the area from the wildlife conservation and management. More than 95% of the sanctuary area has been under the management of the Forest Development Corporation of Maharashtra during the last five decades for addressing the objectives for commercial forestry focussed mainly on teak timber production along with bamboo as subsidiary forest produce. Hence no past details of any existing scheme for wildlife management are available concerning habitat improvement.

## 11.3 The budget for Kanhargaon WLS

Normally the management plan for a PA is for period of 10 years. But the present PA has peculiarity that as stated earlier, more than 95% of it's habitat is made up by plantations with those of teak dominating with little biological value from the wildlife point. There is no example in the country to compare with for a sanctuary with such extensive area under plantations in order to derive conservation lessons. This plan is thus prepared and budgeted for a period of 5 years.

Budget provisions are as per the established rates and standards followed in the State; and mostly compare with those applied in the adjoining Tadoba Andhari Tiger Reserve. The other important points are as under.

**(1)** All the Financial figures are in Rs. In Lacs.

(2) Daily wage rate is taken as Rs. 403 per day (i.e. 0.00403 lacs) Rates and cost of works mentioned as per norms applicable currently (FY 2021- 22) and will be required to be revised every year at the future prevailing rates in the forest dept.

(3) No escalation of cost is provided over the plan period as the inflation rates are unpredictable.

The plan has, to the possible extent, been able to identify conservation related risks and their impacts on different areas of management. As would be seen from various prescriptions the focus is on restoration of habitats i.e. restoring the vegetation cover from current teak plantations to more of mixed natural vegetation, via the process of thinning and allowing the other naturally existing non-teak spps. to come up.

In this first ever plan for Kanhargaon WLS, the thrust has been building the basic administrative structure with required logistics to manage it, comprising of administrative and protective manpower, offices and residential building, vehicles, and communication facility.

As flagged off initially, the thrust areas in the budget are broadly divided into 3 parts with 4th part of anticipated revenue from thinning of teak plantation; more described as under.

**Part (A) Basic Management Plan Works with following activities**

(1) Demarcation of Boundaries
(2) Repairs and Maint. of Roads, bridges, Culverts
(3) Repairs and Maint. of Administrative Buildings
(4) Repairs and Maint. of Residential & other Buildings
(5) Construction of New Adm. and other Structures
(6) Construction of New Residential Buildings
(7) Habitat Development Works
(8) Wildlife Protection Works
(9) Fire Protection Works
(10) Eco-tourism development and Villages Eco-development
(11) Research & Monitoring works
(12) Trainings Activities

Part (B) Thinning and some over wood Removal (Habitat Restoration Activity)

Part (C) Budget for Staff Salaries and Allowances

Part (D) Estimated Yield of forest produce and Anticipated Revenue from Plantation Thinning and some over wood removal .

The plan has highlighted issues and challenges, conflict analysis, including social parameters though they are on much broader scale

There are budget parts necessarily built on lump sum since the physical targets are difficult to state

The overall budget provisions for Kanhargaon WLS are planned for a period of 5 years beginning from 2022-23 to 26-27

The annual physical and financial targets of various works and strategies, are detailed in the Budget **Annexure - XVIII**

It is expected that, every year at time of the advance budget preparation, the administration will take necessary care to apply the applicable rates for labour, material supply and other requirements.

The budgetary abstract of different parts is reproduced below

A) The budgetary requirement for basic wildlife management activities like conservation, protection, infrastructure development, habitat restoration and staffing including related logistical support. It is appended as **Annexure –XVIII - Part A**
B) The budgetary requirement for selective of removal teak is appended as **Annexure - XVIII Part B**
C) The budgetary requirement for Staff Salaries and Allowances are at **Annexure - XVIII Part C**
D) Income that is likely to accrue from the selective of removal teak is appended as **Annexure - XVIII Part D**

**Utilisation of Income from Teak plantations and Bamboo working**

This management plan has prescribed the habitat restoration works comprising of thinning of old teak plantations, some over wood removal and bamboo working in detail in the preceding chapters. The forest produce foreseen to be available from these works in the form of timber, firewood and poles of Teak and Non Teak species and bamboo in the form of long bamboo and bamboo bundles will generate earnings from its disposal. As per the law and the orders of the Supreme Court and various directives, of the government there will be no commercial gain but the proceeds would be deposited in a separate account within the Foundation of TATR to be utilized for the management o the sanctuary except salaries. This has been stated at the very beginning of the Plan

This will not flout any laws, regulations or orders. For the purpose a separate ledger account would have to be created within the Tadoba Andhari Tiger Conservation Foundation for the intended appropriation. To make this arrangement operational the sanctuary management would need to moot an appropriate proposal to the competent authority.

Salaries of the managerial force would have to be provided by the government separately.

In the present case the funds that are likely to be received and parked with Tadoba Andhari Tiger Conservation Foundation; the account will be audited annually by the Chartered Accountant from the panel approved by the central government. The audit report will be posted on the website of the foundation for public information.

**Table: 11. - Abstract of Estimated Income from the Selective of Removal Teak and Bamboo Crop as habitat restoration work.**

**(Rs. in Lacs)**

| Sr. No. | Particulars of Forest Produce | Financial Year | | | | | Grand Total |
|---|---|---|---|---|---|---|---|
| | | 2022-23 (1) | 2023-24 (2) | 2024-25 (3) | 2025-26 (4) | 2026-27 (5) | |
| 1 | Timber, Fire wood, Poles | **645.18** | **621.45** | **806.27** | **638.38** | **722.37** | **3433.66** |
| 2a | Long Bamboo | **334.88** | **266.11** | **293.02** | **334.88** | **266.11** | **1495.00** |
| 2b | B.Bundels | **212.80** | **16.91** | **186.20** | **212.80** | **169.10** | **797.81** |
| 2 | Bamboo Total | **547.68** | **283.02** | **479.22** | **547.68** | **435.21** | **2292.81** |
| **3** | **Grand Total** | **1192.86** | **904.47** | **1285.49** | **1186.06** | **1157.58** | **5726.47** |

These earnings bamboo will be deposited in the Tadoba Andhari Tiger Conservation Reserve Foundation for its financial management and will be utilised for the various activities of Kanhargaon sanctuary works excluding salaries of staff, and eco-development activities as and when required.

**11.4 Implementation**

To implement the budgeted work as included in this plan, an Annual Plan of Operations (APO) will be prepared as per the established practice. The APO will be got administratively approved from the CWLW MS or the competent authority, all the estimates will be got technically sanctioned, and administratively approved from the competent authority.

---

## CHAPTER-XII The schedule of operations and Miscellaneous

### 12.1 The Schedule

The schedule of operations for Kanhargaon WLS is spanned over period of 5 years from 2022-23 to 26-27 is stated below

The abstract of Part A of budget for Management Plan Activities is as under and has the following detailed annual budget requirement for five years to be met with. Low grant sanctions and disbursement will hamper the planned works ultimately affecting the envisaged management vision for the sanctuary.

**Table: 12.1 - The abstract of Part A of budget for Management Plan Activities**

| Sr. No. | Management Plan Work Items | Year wise phasing of financial requirements (Rs. In Lacs) | | | | | |
|---|---|---|---|---|---|---|---|
| | | 2022-23 (1) | 2023-24 (2) | 2024-25 (3) | 2025-26 (4) | 2026-27 (5) | Grand Total |
| 1 | Demarcation of Boundaries | 68.50 | 66.40 | 65.81 | 69.47 | 102.46 | 372.66 |
| 2 | Repairs and Maint. of Roads, bridges, Culverts | 130.41 | 130.41 | 130.41 | 130.41 | 130.41 | 652.05 |
| 3 | Repairs and Maint. of Administrative Buildings | 6.00 | 6.00 | 6.00 | 3.00 | 3.00 | 24.00 |
| 4 | Repairs and Maint. of Residential & other Buildings | 9.50 | 3.00 | 9.50 | 0.00 | 0.00 | 22.00 |
| 5 | Construction of New Adm. & other Structures | 279.00 | 226.00 | 160.00 | 0.00 | 0.00 | 665.00 |
| 6 | Construction of New Residential Buildings | 600.00 | 437.00 | 230.00 | 69.00 | 0.00 | 1336.00 |
| 7 | Habitat Development Works | 177.92 | 184.05 | 169.90 | 227.02 | 220.62 | 979.50 |
| 8 | Wildlife Protection Works | 213.00 | 101.20 | 38.00 | 12.00 | 10.00 | 374.20 |
| 9 | Fire Protection | 153.88 | 137.88 | 133.88 | 128.88 | 84.88 | 639.38 |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| | Works | | | | | | |
| 10 | Eco-tourism Development | 18.00 | 18.00 | 18.00 | 18.00 | 18.0 | 90.00 |
| | Village Eco-development | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 500.00 |
| 11 | Research & Monitoring works | 7.90 | 6.40 | 2.60 | 0.00 | 0.00 | 16.90 |
| 12 | Trainings Activities | 21.60 | 11.50 | 11.50 | 11.50 | 11.50 | 67.60 |
| | **Great Grand Total** | **1785.71** | **1427.84** | **1075.60** | **769.28** | **680.87** | **5739.29** |

The more detailed annual physical and financial targets of various works, charges are given in the Budget **Annexure - XVIII Part A.**

The other important management intervention is thinning of old teak plantations as a habitat restoration work. The abstract of schedule of annual works is as under.

**Table: 12.2 - The abstract of thinning of old teak plantations as a habitat restoration work**

**(Rs. In Lacs)**

| **Plan Work Items** | **2022-23 (1)** | **2023-24 (2)** | **2024-25 (3)** | **2025-26 (4)** | **2025-26 (5)** | **Grand Total** |
|---|---|---|---|---|---|---|
| | **Financial** | **Financial** | **Financial** | **Financial** | **Financial** | **Financial** |
| **(1) Thinning and Over wood Removal** | **274.94** | **285.23** | **348.90** | **292.85** | **291.94** | **1493.86** |
| **(2) Bamboo harvesting** | **110.57** | **92.43** | **98.95** | **110.57** | **92.43** | **504.95** |
| **Grand Total** | **385.51** | **377.66** | **447.85** | **403.42** | **384.37** | **1998.81** |

The more detailed annual physical and financial targets of various works, charges are given in the Budget **Annexure - XVIII Part B.**

The Year wise abstract of the Staff salary budget requirement is as under. Salaries of the managerial force would have to be provided by the government separately.

**Table: 12.3 - The abstract of The Staff Salary**

**(Rs. In Lacs)**

| Particulars | 2022-23 (1) | 2023-24 (2) | 2024-25 (3) | 2025-26 (4) | 2025-26 (5) | Grand Total |
|---|---|---|---|---|---|---|
| | Financial | Financial | Financial | Financial | Financial | Financial |
| **Staff salary** | **577.11** | **577.11** | **577.11** | **577.11** | **577.11** | 2885.55 |

The more detailed information of various post required for the management of this PA is given in the Budget **Annexure - XVIII Part C.**

While implementing the plan, the funds may from various sources and channels. The record needs to be kept for them to facilitate future planning in the following format

**Table: 12.4 -** Abstract of total expenditure for the MP period.

| Fund Source | 2022-23 | 2023-24 | 2024-25 | 2025-26 | 2026-27 | Total |
|---|---|---|---|---|---|---|
| State Plan | | | | | | |
| State Non-Plan | | | | | | |
| Centrally sponsored Schemes | | | | | | |
| DPDC | | | | | | |
| Other | | | | | | |
| **Total** | | | | | | |

No recruitment of personnel for the management of the WLS is proposed in this plan as the same would be made available from the reorganisation of the areas that will be swapped with FDCM in lieu of the WLS area elsewhere for which surveys and administrative actions are in progress.

The requirement of salaries of staff and other expenditure are included in the budget.

### 12.2 Record of Deviations and Implemented Targets

The deviations from the sanctioned management plan will be reported to the CWW Maharahstra state along with the detailed reasons and approval sought and kept in the records; which can be used in future for policy, planning, prescription and implementation of the management plan activities.

### 12.3 Record of Employment Potential

The implementation of the sanctioned management plan activities is bound to generate employment for the local villagers in the unskilled works in the form of wages.

Most of the work estimates where labour is used are prepared based on the mandays approved for most of the forestry activities like plantation, protection, harvesting etc.; which gives fair good idea of quantum of the employment generated.

The reports like 20 point programme, budget performance are required to report the mandays generated. The same practice need to be continued.

**12.4 Control Forms**

The Control Forms (1 to 10) to be kept and their formats are described in detail under the chapter of monitoring. (Annexure XVI)

**12.5 Maintenance of Compartment Histories**

The proforma for the Compartment History is shown in Annexure XVI and needs to fill from time to time as it is an important document for revision of the management plan in the future.

**12.6 A Pocket Field Guide for Plan Implementation**

This document is currently lacking in the state and the field officers to get it prepared for the field staff.

---

# Annexure – I

## NOTIFICATION OF KANHARGAON SANCTUARY



| (1) | (2) | (3) | (4) | (5) |
|---|---|---|---|---|
| 11 | Central Chanda Project Division, Ballarshah (FDCM) | 1 | 498.168 | The total area of compt. no. 78A is 272.355 ha. in which Forest Colony, Range Office and Zaran Central Nursery of the Division are situated in 57.20 ha. area. Therefore, excluding the area of 57.20 ha. of compt. no. 78A, remaining 215.155 ha. area has been included in the Sanctuary. |
| 12 | | 2 | 197.082 | |
| 13 | | 3 | 332.652 | |
| 14 | | 16 | 211.651 | |
| 15 | | 17 | 274.377 | |
| 16 | | 18 | 308.775 | |
| 17 | | 19 | 363.003 | |
| 18 | | 20 | 224.601 | |
| 19 | | 21 | 236.741 | |
| 20 | | 22 | 316.869 | |
| 21 | | 23 | 261.022 | |
| 22 | | 25 | 279.233 | |
| 23 | | 30 | 223.791 | |
| 24 | | 31 | 229.861 | |
| 25 | | 32 | 203.962 | |
| 26 | | 33 | 301.086 | |
| 27 | | 35 | 209.222 | |
| 28 | | 36 | 221.363 | |
| 29 | | 37 | 226.219 | |
| 30 | | 38 | 266.283 | |
| 31 | | 39 | 363.003 | |
| 32 | | 40 | 181.299 | |
| 33 | | 41 | 270.735 | |
| 34 | | 42 | 314.441 | |
| 35 | | 43 | 290.564 | |
| 36 | | 44 | 254.952 | |
| 37 | | 46 | 546.326 | |
| 38 | | 47 | 327.795 | |
| 39 | | 48 | 230.266 | |
| 40 | | 49 | 168.349 | |
| 41 | | 50 | 320.916 | |
| 42 | | 51 | 269.116 | |
| 43 | | 52 | 434.632 | |
| 44 | | 53 | 437.465 | |
| 45 | | 54 | 334.270 | |
| 46 | | 55 | 381.214 | |
| 47 | | 56 | 322.534 | |
| 48 | | 57 | 210.841 | |
| 49 | | 58 | 351.672 | |
| 50 | | 59 | 281.257 | |
| 51 | | 60 | 237.550 | |
| 52 | | 61 | 283.280 | |
| 53 | | 62 | 263.046 | |
| 54 | | 63 | 180.490 | |
| 55 | | 64 | 158.637 | |
| 56 | | 65 | 280.852 | |
| 57 | | 66 | 282.471 | |
| 58 | | 67 | 263.046 | |
| 59 | | 68 | 203.556 | |
| 60 | | 69 | 184.941 | |
| 61 | | 70 | 389.713 | |



REVENUE AND FORESTS DEPARTMENT
Madam Cama Marg, Hutatma Rajguru Chowk,

| (1) | (2) | (3) | (4) | (5) |
|---|---|---|---|---|
| 62 | | 72 | 407.128 | |
| 63 | | 73 | 251.714 | |
| 64 | | 74 | 309.180 | |
| 65 | | 75 | 374.334 | |
| 66 | | 78 A | 215.155 | |
| 67 | | 79 | 329.009 | |
| 68 | | 80 | 242.002 | |
| 69 | | 81 | 329.009 | |
| 70 | | 82 B | 147.306 | |
| 71 | | 83 | 168.349 | |
| 72 | | 84 | 226.220 | |
| 73 | | 85 B | 209.627 | |
| 74 | | 86 Pt | 61.512 | |
| 75 | | 102 | 233.099 | |
| 76 | | 103 | 179.279 | |
| 77 | | 104 | 289.350 | |
| 78 | | 105 | 290.969 | |
| 79 | | 106 | 303.919 | |
| 80 | | 107 | 348.435 | |
| 81 | | 108 | 140.830 | |
| 82 | | 111 | 255.357 | |
| 83 | | 113 | 218.530 | |
| 84 | | 114 | 408.732 | |
| 85 | | 115 | 235.932 | |
| 86 | | 116 | 167.945 | |
| 87 | | 117 | 160.256 | |
| 88 | | 118 | 288.541 | |
| 89 | | 120 | 256.976 | |
| 90 | | 121 | 197.487 | |
| 91 | | 122 | 170.777 | |
| 92 | | 123 | 324.963 | |
| 93 | | 124 | 235.122 | |
| 94 | | 128 | 173.610 | |
| 95 | | 129 | 192.631 | |
| 96 | | 130 | 174.824 | |
| 97 | | 131 | 299.063 | |
| 98 | | 132 | 263.046 | |
| 99 | | 133 | 464.984 | |
| 100 | | 134 | 376.358 | |
| 101 | | 139 | 248.073 | |
| 102 | | 140 | 157.018 | |
| 103 | | 141 | 182.918 | |
| 104 | | 142 A | 73.653 | |
| 105 | | 142 B | 149.734 | |
| | | **Total** | **25138.146** | |
| | **Grand Total** | | **26940.211** | |

Total Area of Kanhargaon Wildlife Sanctuary 26940.211 ha. or 269.40 sq. km.

*Boundaries of Kanhargaon Wild life Sanctuary :—*

*North* : Compt. No. D567, 86, 87, D089, Devai Village Boundary.

East : Bhutari Village Boundary, Kimara Village Boundary, Chak Berdi Village Boundary, Compt. No. D555A, D555B, Aksapur Village Boundary, Compt. No. D556, D555, Karanji Village Boundary, D143, D146, D147, D149, D138, Chiwanda Village Boundary, D136, D135, D562C, D562B, D562A, D587A, D587C, Chak Nandgaon Village Boundary and Chak Bapur Village Boundary.

South : Compt. No. D45, Gujari Village Boundary D561, D560B, D560A Wamanpalli, Pardi Village Boundary, Compt. No. D559, Lathi Village Boundary.

West : Sarandi Village Boundary, Compt. No. D558, Wejgaon Village Boundary Compt. No. D557B, 34, 29, 28, 27, 26, 24, D536, D537, 13, Kanhargaon Village Boundary, Compt. No. D76, 77, 77 (Part), 78B, 4, 5, 6, D538B, Katwali Village Boundary, Kothari Village Boundary, Compt. No. D539, D540, D541A,

By order and in the name of the Governor of Maharashtra,

GAJENDRA NARWANE,

Deputy Secretary to Government.

ON BEHALF OF GOVERNMENT PRINTING, STATIONERY AND PUBLICATION, PRINTED AND PUBLISHED BY DIRECTOR, RUPENDRA DINESH MORE, PRINTED AT GOVERNMENT CENTRAL PRESS, 21-A, NETAJI SUBHASH ROAD, CHARNI ROAD, MUMBAI 400 004 AND PUBLISHED AT DIRECTORATE OF GOVERNMENT PRINTING, STATIONERY AND PUBLICATIONS, 21-A, NETAJI SUBHASH ROAD, CHARNI ROAD, MUMBAI 400 004. EDITOR : DIRECTOR, RUPENDRA DINESH MORE.

# ANNEXURE – II

## CHECK LIST OF PLANTS IN SAMPLED 15 COMPARTMENTS IN KANHARGAON SANCTUARY

## (Compartments-2,18,36,40,44,51,58,65,72,104,113,123,128,131,134)

| S. N. | LOCAL NAME | BOTANICAL NAME | FAMILY |
|---|---|---|---|
| 01 | Kanghi | *Abutilon indicum* (L.) Sweet | Malvaceae |
| 02 | Karandi | *Abutilon pannosum* (G. Forst.) Schltdl. | Malvaceae |
| 03 | Kupi/ Khokali | *Acalypha indica* L. | Euphorbiceae |
| 04 | Kuppi | *Acalypha lanceolata* Willd. | Euphorbiceae |
| 05 | Landaga | *Acanthospermum hispidum* DC. | Asteraceae |
| 06 | Aghada | *Achyranthes aspera* Linn. | Amartaceae |
| 07 | Kapurmadhura/ Pashanbhed | *Aerva lanata* (L.) A. L. Juss. ex Schultes. | Amaranthaceae |
| 08 | | *Aeschynomene americana* L. | Fabaceae |
| 09 | Nalabi | *Aeschynomene aspera* L. | Fabaceae |
| 10 | Ghayapat | *Agave Americana* L. | Agavaceae |
| 11 | Dhanbhaji | *Allamnia nodiflora* (L.) R. Br. | Amaranthaceae |
| 12 | | *Alternanthera paronychioides* A.St.-Hil. | Amaranthaceae |
| 13 | | *Alysicarpus bupleurifolius* (L.) DC. | Fabaceae |
| 14 | Shewara | *Alysicarpus longifolius* (Rottler ex Spreng.) Wight & Arn. | |
| 15 | | *Alysicarpus vaginalis* (L.) DC. | Fabaceae |
| 16 | Katemat | *Amaranthus spinosus L.* | Amaranthaceae |
| 17 | Mat | *Amaranthus viridis* L. | Amaranthaceae |
| 18 | Bharjambhul | *Ammannia baccifera* L. | Lytraceae |
| 19 | Pankanis | *Typha angustata* | Typhaceae |
| 20 | Surankand | *Amorphophallus sylvaticus* (Roxb.) Kunth | Araceae |
| 21 | Neel | *Anagallis arvensis* L. | Primulaceae |
| 22 | Bhuineem | *Andrographis paniculata* (Burm. f.) Wall. ex Nees | Acathaceae |
| 23 | Gopali/ Kalabhangra | *Anisomeles indica* (L.) Kuntze | Lamiaceae |
| 24 | Bramhi | *Bacopa monniera* Linn. | Scrophulariaceae |
| 25 | Katekoranti | *Barleria prionitis* L. | Acathaceae |
| 26 | Kumara | *Bidens biternata* (Lour.) Merr. & Sherff | Asteraceae |
| 27 | Lajwanti | *Biophytum sensitivum* DC. | Oxalidaceae |
| 28 | Kangi | *Blainvillea acmella* (L.) Philipson | Asteraceae |
| 29 | Hadsan/ Kolata | *Blepharis maderaspatensis* (L.) B.Heyne ex Roth | Acathaceae |

| | | | |
|---|---|---|---|
| 30 | Lahan Hadsan | *Blepharis repens* (Vahl.) Roth | Acathaceae |
| 31 | Buradi | *Blumea eriantha* DC. | Asteraceae |
| 32 | Gangawan | *Blumea lacera* (Burm.f.) DC. | Asteraceae |
| 33 | Punarnawa | *Boerhaavia diffusa* L. | Nyctaginaceae |
| 34 | Shewal | *Bonnaya antipoda* (L.) Druce | Scrophulariaceae |
| 35 | | *Bonnaya ciliata* (Colsm.) Spreng. | Scrophulariaceae |
| 36 | Kangali | *Breynia retusa* (Dennst.) Alston | Phyllanathaceea |
| 37 | | *Bytnerra herbacea* Roxb. | Malvaceae |
| 38 | Ranbibi | *Caesulia axillaris* Roxb. | Asteraceae |
| 39 | Ukshi, Jilbuli | *Calycopteris floribunda* (Roxb.) Lam. | Combretaceae |
| 40 | Kanthar | *Capparis spinosa* L. | Capparaceae |
| 41 | Waghati | *Capparis zeylanica* L. | Capparaceae |
| 42 | Sankapi/ Chimanchara | *Catharanthus pusilus (Murr.)G. Don.* | Apocyanaceae |
| 43 | Kombada | *Celosia argentea* L. | Amaranthaceae |
| 44 | Sarmal | *Chamaecrista pumila* (Lam.) K.Larsen. | Fabaceae |
| 45 | Safed Musali | *Chlorophytum tuberosum* (Roxb.) Baker | Asperagaceae |
| 46 | Pandhari Tilwan | *Cleome gynandra* L. | Cleomaceae |
| 47 | Taripakshi | *Coldenia procumbens L.* | Boraginaceae |
| 48 | Tupkati | *Corchorus capsularis* Linn. | Tiliaceae |
| 49 | Motichhunchh | *Corchorus olitorius* L. | Tiliaceae |
| 50 | | *Corchorus trilocularis* L. | Tiliaceae |
| 51 | Choti Tilwan | *Corynandra aspera* (J.Koenig ex DC.) Roalson | Cleomaceae |
| 52 | Pan Tilwan | *Corynandra chelidonii* (L.f.) Cochrane & Iltis | Cleomaceae |
| 53 | Piwalitilwan/ Ranmowari | *Corynandra viscosa* (L.) Cochrane & Iltis. | Cleomaceae |
| 54 | Harduli | *Costus speciosus* (J.Koenig) Sm. | Costaceae |
| 55 | Dinghala | *Crotalaria prostrata* auct. non Rottb. | Fabaceae |
| 56 | Ban Tulasi | *Croton bonplandianum* Baill | Euphorbiaceae |

| | | | |
|---|---|---|---|
| 57 | Kali Musali | *Curculigo orchioides* Gaertn. | Hypoxidaceae |
| 58 | Ran Halad | *Curcuma pseudomontana* J.Graham | Zingiberaceae |
| 59 | Salvan | *Desmodium gangeticum* (L.)DC. | Fabaceae |
| 60 | Chipati | *Desmodium triflorum* (L.) DC. | Fabaceae |
| 61 | Kunjar | *Digera muricata* (L.) Mart. | Amaranthaceae |
| 62 | Matalu | *Dioscorea bulbifera* L. | Dioscoreacea |
| 63 | Maka | *Eclipta prostrata* (L.) L. | Asteraceae |
| 64 | Chota Maka | *Eclipta prostrata var. dixitii* An.Kumar & K.K.Khanna | Asteraceae |
| 65 | Nai, Choti Chirayat | *Enicostema axillare (Poir. ex Lam.) A.Raynal* | Gentianaceae |
| 66 | Dudhi, Nagarjuni | *Euphorbia hirta* L. | Euphorbiacea |
| 67 | | *Euphorbia serpens* Kunth. | Euphorbiacea |
| 68 | Vishnukranta/Shankpushpi | *Evolvulus alsinoides* (L.) L. | Convolvulaceae |
| 69 | Nimulwel | *Evolvulus nummularius* (L.)L. | Convolvulacae |
| 70 | Dhikamali | *Gardenia resinifera* Roth | Rubiaceae |
| 71 | Vilayati Mehandi | *Dodonaea viscosa (L.) Jacq.* | Sapindaceae |
| 72 | | *Geodorum laxiflorum* Griff | Orchidaceae |
| 73 | Zarasi | *Glinus oppositifolius* (L.) Aug. DC. | Molluginaceae |
| 74 | Karkari/ Kalalavi | *Gloriosa superba* L. | Colchicaceae |
| 75 | | *Gomphrena serrata* L. | Amaranthaceae |
| 76 | | *Grewia flavescence* | Tiliaceae |
| 77 | Kharoti, Ambati | *Grewia hirsuta* Vahl. | Tilianaceae |
| 78 | Muralsheng | *Helicteres isora* L. | Sterculiaceae |
| 79 | Bhurundi | *Heliotropium ovalifolium* Forrsk. | Boraginaceae |
| 80 | Lahan Jaswand | *Hibiscus lobatus* (Murray) Kuntze | Malvaceae |
| 81 | Ratan purush | *Hybanthus enneaspermus* (L) F.Muell. | Violacaeae |
| 82 | Katesarua/Talimkhana | *Hygrophila auriculata* (K. Schum.) Heine | Acanthaceae |

| | | | |
|---|---|---|---|
| 83 | Ran Tulas, Bhutganjya | *Hyptis suaveolens* (L.) Poit. | Lamiaceae |
| 84 | Godhadi | *Indigofera cordifolia* Roth | Fabaceae |
| 85 | Neel | *Indigofera linnaei* Ali. | Fabaceae |
| 86 | Jangali Methi | *Indigofera trifoliata* L. | Fabaceea |
| 87 | Jambhale Bhuchakra | *Iphigenia indica* (L.) A.Gray ex Kunth | Colchicaceae |
| 88 | Kunda | *Jasminum multiflorum* (Burm.f.) Andrews | Oleaceae |
| 89 | Ratan Jyot/ Chandra jyoti | *Jatropha curcas* L. | Euphorbiaceae |
| 90 | | *Jatropha gossypiifolia* L. | Euphorbiaceae |
| 91 | | *Justicia glauca* Rottl. | Acathaceae |
| 92 | | *Justicia procumbens* L. | Acathaceae |
| 93 | Jarwad | *Lagascea mollis* Cav. | Asteraceae |
| 94 | Ghaneri/Raymonia /Madhumalati/Gan gutai | *Lantana camera* L. | Verbenaceae |
| 95 | Deepmal | *Leonotis neptifolia (L) Less* | Compositeae |
| 96 | Bhui genda | *Lepidagathis cristata* Willd. | Acathaceae |
| 97 | Dronpushpa | *Leucas aspera* (Willd.) Link | Lamiaceae |
| 98 | Pan Lawang | *Ludwigia perennis* L. | Onagraceae |
| 99 | Wan Bhindi | *Malachra capitata* (L.) L. | Malvaceae |
| 100 | Chandiri | *Malvastrum coromandelianum* (L.) Garcke | Malvaceae |
| 101 | Waghnakhi | *Martynia annua L.* | Martymiaceae |
| 102 | Sadamandi | *Emilia sonchifolia* (L.) DC. ex Wight | Asteraceae |
| 103 | Bharati | *Maytenus emarginata* (Willd.) Ding Hou | Celastraceae |
| 104 | Makardana | *Mecardonia procumbens* (Mill.) Small | Plantaginaceae |
| 105 | Chitrabeej/ Lahan Methuri | *Melochia corchorifolia* L. | Sterculiaceae |
| 106 | Gophan | *Merremia emarginata* (Burm.f.) Hallier f. | Convolvulaceae |
| 107 | Chilati | *Mimosa hamata* Willd. | Mimosaceae |

| | | | |
|---|---|---|---|
| 108 | | *Mollugo pentaphylla* L. | Molluginaceae |
| 109 | | *Monochoria vaginalis* (Burm.f.) C.Presl | Pontederiaceae |
| 110 | Lajalu | *Neptunia triquetra* Benth. | Mimosaceae |
| 111 | Ashta | *Ocimum americanum* L. | Lamiaceae |
| 112 | Haratfari | *Olax scandens* Roxb. | Olacaceae |
| 113 | Pittapapada | *Oldenlandia corymbosa* L. | Rubiaceae |
| 114 | | *Oldenlandia umbellata* L. | Rubiaceae |
| 115 | Dimenjar | *Orthosiphon pallidus* Royle ex Benth. | |
| 116 | | *Orthosiphon rubicundus* (D.Don)Benth. | Lamiaceae |
| 117 | Amothi/Ambushi | *Oxalis comiculata* L. | Oxalidaeae |
| 118 | Gajar Gawat | *Parthenium hysterophorus* L. | Asteraceae |
| 119 | Sugantdhbala | *Pavonia odorata* Willd. | Malvaceae |
| 120 | Kakjangha | *Peristrophe paniculata* (Forssk.) R.K. Brummitt | Acathaceae |
| 121 | Sheral | *Persicaria glabra* (Willd.) M.Gómez | Polygonaceae |
| 122 | Ranmug | *Phaseolus radiotus* L. | Papilionataeae |
| 123 | GourMundi | *Phyla nodiflora* (L.) Greene | Verbenaceae |
| 124 | Bhiawali/ kachori | *Phyllanthus maderaspatensis* L | Phyllanthaceea |
| 125 | Bhui Aowla | *Phyllanthus virgatus forest* f. | Phyllanthaceae |
| 126 | Popati | *Physalis angulata* L. | Solanaceae |
| 127 | Popati/Phoundi | *Physalis minima* L. | Solanaceae |
| 128 | Phutani | *Polygala arvensis Willd.* | Polygalaceae |
| 129 | | *Polygala elongata* Klein ex Willd. | Polygalaceae |
| 130 | | *Polygala erioptera* DC. | Polygalaceae |
| 131 | Gulabi Godhadi | *Polygonum plebeium* R.Br. | Polygonaceae |
| 132 | Ghol | *Portulaca oleracea* L. | Portulacaceae |
| 133 | Devbabhul | *Prosopis juliflora* (Sw.) DC | Fabaceae |

| | | | |
|---|---|---|---|
| 134 | | *Rhynchosia minima* (L.) DC. | |
| 135 | | *Rungia repens* (L.)Nees. | Acanthaceae |
| 136 | Ghoda Tulasi | *Scoparia dulcis* L. | Plantaginaceae |
| 137 | Ran Arand, Bhui Arand | *Sebastiania chamaelea* (Linn.) Müll. Arg. | Euphorbiaceae |
| 138 | Pithwa, Pitundi | *Securinega virosa* (Roxb)Baill. | Euphorbiaceae |
| 139 | Shimai Agase | *Senna absus* (L.) Roxb. | Fabaceae |
| 140 | Tarwad | *Senna auriculata* (L.) Roxb. | Fabaceae |
| 141 | Tarota | *Senna tora* (L.) Roxb. | Fabaceae |
| 142 | | *Senna uniflora* (Mill.) H.S.Irwin & Barneby. | Fabaceae |
| 143 | Ran Shewara | *Sesbania bispinosa* W. F. Wight | Fabaceae |
| 144 | Chikana/ Bala | *Sida acuta* Burm. f. | Malvaceae |
| 145 | Bhuibala | *Sida cordata* (Burm.f.)Borss.Waalk. | Malvaeae |
| 146 | Bala, Baladhya | *Sida cordifolia* L. | Malvaceae |
| 147 | Tupkadi | *Sida rhombifolia* | Malvaceae |
| 148 | | *Sida sivarajanii* Tambde, Sardesai & A.K. Pandey | Malvaceae |
| 149 | Makai, Kamuni | *Solanum americanum* Mill. | Solanceae |
| 150 | Kate Korati | *Solanum xanthocarpum* Schrad. | Solanaceae |
| 151 | Tarakadal | *Spermacoce pumila* (Span.) Boerl. | Rubiaceae |
| 152 | Gorakhmundi | *Sphaeranthus indicus* Linn | Asteraceae |
| 153 | Akkalkadha | *Spilanthes paniculata* Wall. ex DC. | Asteraceae |
| 154 | | *Synedrella nodiflora* (L.) Gaertn. | Asteraceae |
| 155 | Dukkarkand | *Tacca leontopetaloides* (L.) Kuntze | Taccaceae |
| 156 | | *Tarenna asiatica* (L.) Kuntze ex K.Schum. | Rubiaceae |
| 157 | | *Tephrosia alba* Du Puy & Labat | Fabaceae |
| 158 | Diwali/ Unhali | *Tephrosia purpurea* (L.)Pers. | Fabaceae |
| 159 | | *Tephrosia strigosa* (Dalzell) Santapau & Maheshw. | Fabaceae |

| | | | |
|---|---|---|---|
| 160 | | *Tephrosia villosa* (L.) Pers. | Fabaceae |
| 161 | Kochai | *Theriophonum indicum* (Dalz.) Engler. | Araceae |
| 162 | Pandhara Ghawana | *Trichodesma inaequale* Edgew. | Boraginaceae |
| 163 | Nila Ghawana | *Trichodesma indicum* (L.) R. Br. | Boraginaceae |
| 164 | Kambarmodi | *Tridax procumbens* L. | Asteraceae |
| 165 | Tupkati,Lendhi | *Triumfetta rotundifolia* Lam. | Tiliaceae |
| 166 | Tupkati | *Triumphetta rhomboidea* Jacq. | Malvaceae |
| 167 | Atibala/Rankapasi | *Urnea lobata* L. | Malvaeae |
| 168 | Sahadevi | *Vernonia cinerea* (L.) Less. | Asteraceae |
| 169 | Sonkadi | *Vicoa indica* (L.) DC. | Asteraceae |
| 170 | Ran Mung | *Vigna radiata var. sublobata* (Roxb.) Verdc. | Fabaceae |
| 171 | | *Walthera indica* L. | Sterculiaceae |
| 172 | Dhayati | *Woodfordia fruticosa* (L.) Kurz | Lythraceae |
| 173 | Gokharu | *Xanthium strumarium* L. | Asteraceae |
| 174 | Aroni | *Zizipus oenoplia* (L.)Mill. | Rhamanaceae |
| 175 | Jodpani | *Zornia diphylla* (L.) Pers. | Fabaceae |
| 176 | Bhuiawala | *Phyllanthus amarus* Schumach. & Thonn. | Phyllanthaceae |
| 177 | Adders Tounge | *Ophioglossum costatum* R. Br. | Ophioglossaceae |
| 178 | | *Vincetoxicum fasciculatum* (Buch.-Ham. ex Wight) Kuntze | Apocyanceae |

## C. CLIMBERS

### List of Climber other than The Compartments observed

| S.N. | LOCAL NAME | BOTANICAL NAME | FAMILY |
|---|---|---|---|
| 33 | Phaswel | *Rivea hypocrateriformis* (Desr.) Choisy | Convolvulaceae |
| 34 | Palasvel | *Butea superba* Roxb. | Fabaceae |
| 35 | Dhiwarwel | *Ichnocarpus frutescens* (L.) W. T. Aiton | Apocyanaceae |
| 36 | Ganesh Vel | *Ipomoea quamoclit* L. | Convolvulaceae |
| 37 | Kajkuri | *Mucuna pruriens* (L.) DC. | Fabaceae |

| | | | |
|---|---|---|---|
| 38 | Nishottar | *Operculina turpethum* (Linn.) Silva Manso | Convolvulaceae |
| 39 | Utaran | *Pergularia daemia* (Forsskal) Chiov. | Apocyanaceae |
| 40 | Gulvel | *Tinospora cordifolia* (Willd.) Hook. f. and Thoms | Menispermaceae |

## D. Parasites other than sampled compartments

| S.N. | LOCAL NAME | BOTANICAL NAME | FAMILY |
|---|---|---|---|
| 01 | Banda | *Viscum articulatum* Burm. f. | Santalaceae |

## F. BAMBOO

| S.N. | LOCAL NAME | BOTANICAL NAME | FAMILY |
|---|---|---|---|
| 01 | Bamboo-karka | *Dendrocalamusstrictus(Roxb* | Poaceae |

## A-TREES

| S.N. | LOCAL NAME | BOTANICAL NAME | FAMILY |
|---|---|---|---|
| 01 | Ali | *Morinda tomentosa* B.Heyne ex Roth | Rubiaceae |
| 02 | Amaltas/Bahava | *Cassia fistula* Linn. | Fabaceae |
| 03 | Anjan | *Hardwickia binata* Roxb. | Caesalpinaceae |
| 04 | Aonla | *Phyllanthus emblica* L. | Euphorbiaceae |
| 05 | Apta Sahara | *Bauhinia racemosa* Lamk. | Fabaceae |
| 06 | Babhul | *Acacia nilotica* Linn.[*Vachellia nilotica* (L.) P.Hurter & Mabb. | Mimosaceae[Fabaceae] |
| 07 | Beheda | *Terminalia bellirica* Gaertn. | Combreataceae |
| 08 | Bel | *Aegle marmelos* (L) Correa | Rutaceae |
| 09 | Bhirra | *Chloroxylon swietenia* (Roxb.) DC. | Rutaceae |
| 10 | Biba/Bhilwa | *Semecarpusanacardium* Linn. | Anancardiaceae |
| 11 | Bija | *Pterocarpus marsupium*Roxb. | Fabaceae |
| 12 | Char | *Buchanania lanzan* Spreng. | Anacardiaceae |
| 13 | Chichwa | *Albizia odoratissima* Roxb. | Fabaceae |

| | | | |
|---|---|---|---|
| 14 | Choti Karai | *Huberantha cerasoides* (Roxb.) Chaowasku | Annonaceae |
| 15 | Dev Bhabhul | *Prosopis juliflora* (Sw.) DC. | Fabaceae |
| 16 | Dhaman | *Grewia tiliifolia* Vahl. | Tiliaceae |
| 17 | Dhawada | *Anogeissus latifolia* (Roxb. ex DC) Wall. ex Bedd. | Combretaceae |
| 18 | Dhoban/Dhobin/ Phansi | *Dalbergia paniculata* Roxb. | Fabaceae |
| 19 | Dikamali | *Gardenia resinifera* Roth. | Rubiaceae |
| 20 | Dudhi/Kala Kuda | *Wrightia tincotoria* Roxb. | Apocynaeae |
| 21 | Garadi | *Cleistanthus collinus* (Roxb.)Benth. ex Hook.f | Euphorbiaceae |
| 22 | Ghogar/papda/ Ghoghurli | *Gardenia latifolia* Ait. | Rubiaceae |
| 23 | Ghoti Bor/ Ghati Bor | *Ziziphus xylopyrus* (Retz.)Willd. | |
| 24 | Hinganbet | *Balanites aegyptica* (L) Del. | Balanitaceae |
| 25 | Hirda/Harra | *Terminalia chebula* Retz. | Combretaceae |
| 26 | Hiwar | *Acacia leucophloea* (Roxb) Wild. [*Vachellia leucophloea* (Roxb.) Maslin, Seigler & Ebinger] | Mimosaceae[Fabaceae] |
| 27 | Imli/Chinch | *Tamarindus indica* L. | Caesalpinanceae [Fabaceae] |
| 28 | Jambhul/Jamanun | *Syzigiumcumini* Linn. | Myrtaceae |
| 29 | Kakad | *Garuga pinnata* Roxb. | Burseraceae |
| 30 | Kakai | *Flacourtia indica* (Burn.f)Merr. | Salicaceae |
| 31 | Kala fetra | *Gardenia turgid* Roxb. | Rubiacae |
| 32 | Kala Kuda | *Wrightiat tinctoria* R.Br. | Apoeynaceae |
| 33 | Kalamb/Karam | *Mitragyna parviflora* (Roxb.)Korth. | Rubiaceae |
| 34 | Karai | *Miliusa tomentosa* (Roxb.)Sinclair | Annonaceae |
| 35 | Katayin/Kasai | *Birdelia retusa* (L.)Spreng. | Euphorbiaceae |
| 36 | Kawath | *Limonia acidissima*Lorr. | Rutaceae |

| | | | |
|---|---|---|---|
| 37 | Kawathi | *Naringi crenulata* (Roxb.) Nicolson | Rutaceae |
| 38 | Khair | *Acacia catechu* (L.f.)Willd. [*Senegalia catechu (L.f.)P.J.H.Hurter & Mabb.* | Mimosaceae[Fabaceae] |
| 39 | Khirani | *Manilkara hexandra* (Roxb.) Dubard. | Sapotaceae |
| 40 | Kuda/Pandhara Kuda | *Holarrhenaantidysenterica* (Roth.)Wall. ex A.DC. | Apocynaceae |
| 41 | Kudurasi | *Diospyros chloroxylon* Roxb. | Ebenaceae |
| 42 | Kullu/Karu | *Sterculia urens* Roxb. | Sterculieceae |
| 43 | Kumbhi | *Careya arborea* Roxb. | Lecythidiaceae |
| 44 | Kusum | *Schleicheraoleosa* (Lour)Merr. | Sapindaceae |
| 45 | Lendia/Sinhana/ Sena | *Lagerstromia parviflora* Roxb. | Lytraceae |
| 46 | Lokhandi | *Ixora arborea* Roxb. | Rubiaceae |
| 47 | Makadi Char | *Buchanania axillaris* (Desr.) Ramam. | Annonaceae |
| 48 | Medshing | *Dolichandrone falcata* (Wall. ex DC.)Seem. | Bignoniaceae |
| 49 | Moha/Mahuwa | *Madhuca longifolia* (Koen.)Macb. | Sapotaceae |
| 50 | Mokha | *Schrebera swietenoides* Roxb. | Oleaceae |
| 51 | Mowai | *Lannea coromandelica* (Houtt) Merr. | Annacardiaceae |
| 52 | Neem | *Azadirachta indica* A.Juss. | Meliaceae |
| 53 | Nirmali/ Kawi | *Strychnospotaterum* Linn. | Loganiaceae |
| 54 | Padar/Padal | *Stereospermum suaveolens DC* | Bignoniaceae |
| 55 | Pakar/ Pakad | *Ficus virens* W.T. Aiton | Moraceae |
| 56 | Palas | *Butea monosperma* Lamk. | Fabaceae |
| 57 | Phetra | *Tamilnadia uliginosa* (Retz.) Tirveng.&Sastre. | Rubiaceae |
| 58 | Rohan | *Soymida febrifuga* (Roxb.)A.Juss | Meliaceae |

| | | | |
|---|---|---|---|
| 59 | Sagwan | *Tectona grandis* Linn. | Verbenceae |
| 60 | Saja/ Ain,Asan | *Terminalia tomentosa* Roxb.(ex DC)Wight & Arn. | Combretaceae |
| 61 | Salai | *Boswellia serrata* Roxb. | Burseraceae |
| 62 | Semal | *Bombax ceiba* L. | Bombaceae |
| 63 | Shami | *Bauhinia malabarica* Roxb. | Fabaceae |
| 64 | Shisam | *Dalbergia latifolia* Roxb. | Fabaceae |
| 65 | Shivan | *Gmelina arborea* Linn. | Verbenaceae |
| 66 | Siras-black | *Albizia lebbek* (L.) Benth. | Mimosaceae [Fabaceae] |
| 67 | Siras-white/Kinhi | *Albizia procera* (Roxb.) Benth. | Mimosaceae [Fabaceae] |
| 68 | Shindi | *Phoenix sylvestris* Roxb. | Arecaeae |
| 69 | Surya | *Xylia xylocarpa* (Roxb.)Taub. | Mimosaceae [Fabaceae] |
| 70 | Tendu | *Diospyros melanoxylon* Roxb. | Ebenaceae |
| 71 | Vekand | *UNKNOWN* | |
| 72 | Goraj | *UNKNOWN* | |
| 73 | Choti Karai | *Polyalthia cerasoides* (Roxb.) Hook.f. & Thomson | Annonaceae |

**List of Trees found in Kangargaon Sanctuary other than this Compartments.**

| Sr. No. | Local Name | Botanical Name | Family |
|---|---|---|---|
| 01 | Sitaphal | *Annona squamosa L.* | Annonacae |
| 02 | Umbar/Gular | *Ficus recemosa Linn* | Moreaceae |
| 03 | Bud/Wad | *Ficus bengalenisi, Linn* | Moraceae |
| 04 | Kala-umber | *Ficus hispida L. f* | Moraceae |
| 05 | Pipal | *Ficus religiosa* L. | |
| 06 | Jangali Badam | *Sterculia foetida* L. | Sterculiacae |
| 07 | Bilwa/ Varaun | *Crateva religiosa G. Forst.* | Capparaceae |
| 08 | Tattu | *Oroxylum indicum (L.)Kurtz.* | Bignoniaceae |
| 09 | Karanj | *Pongamia pinnata* (L) Pierre | Fabaceae |
| 10 | Ashok | *Polyalthia longifolia* Thw. | Annonaceae |
| 11 | Amba | *Mangifera indica* L. | Anacardiaceae |
| 12 | Ankol | *Alangium salvifolium* (Linn. F.)Wang. | Alangiaceae |
| 13 | Kapok | Ceiba pentandra (L.) Gaerth. | Bombacaeae |
| 14 | Bottle Brush | *Callistemon citrinus* (Curtis) Skeels. | Myrtaceae |

# Annexure-III

As a part of preparing the Management plan of Kanhargaon Sanctuary, a study of the birds and butterflies was assessed by two different agencies namely, Shri. Abhay Ujagare and his team and Dr. Jayant Wadatkar and his team. Boradly, the assessment made by Shri. Abhay Ujagare is accepted by Dr. Jayant Wadatkar with few changes. The study tour was conducted for total 5 days from September 2 to 6, 2021 by Dr. Jayant Wadatkar. A total of 100 avian species were reported during the study. The list also includes the species listed by Mr. Abhay Ujagare and his team. Only few bird species (like Slaty-headed Parakeet, Created Hawk Eagle, Brown Shrike, Rosy Minivet, Blue-tailed Bee eater) were not included in updated list because there sighting is doubtful. Now this list has reached upto 128 species.

The list of Avian fauna of Kanhargaon Sanctuary with their status is as follows**.**

| Sr. No. | Common Name | Scientific name | Status | R/M |
|---|---|---|---|---|
| 01 | Lesser Whistling-duck (Teal) | *Dendrocygna javanica* | C | R |
| 02 | Spot-billed Duck | *Anas poecilorhyncha* | C | R |
| 03 | Cotton Pigmy Goose | *Nettapus coromandelianus* | C | M |
| 04 | Little Grebe (Dabchick) | *Tachybaptus ruficollis* | C | R |
| 05 | Great Cormorant | *Phalacrocorax carbo* | R | R |
| 06 | Indian Cormorant | *Phalacrocorax fuscicollis* | R | R |
| 07 | Little Cormorant | *Phalacrocorax niger* | C | R |
| 08 | Cattle Egret | *Bubulcus ibis* | VC | R |
| 09 | Little Egret | *Egretta garzetta* | C | R |
| 10 | Intermediate Egret | *Mesophoyx intermedia* | R | R |
| 11 | Painted Stork | *Mycteria leucocephala* | R | R |
| 12 | Asian Openbill | *Anastomus oscitans* | R | M |
| 13 | Woolly-necked Stork | *Ciconia episcopus* | C | R |
| 14 | Indian Pond Heron | *Ardeola grayii* | C | R |
| 15 | Cinnamon Bittern | *Ixobrychus Cinnamomeus* | VR | R |
| 16 | Bronze-winged Jacana | Metopidius indicus | R | R |
| 17 | Pheasant- tailed Jacana | *Hydrophasianus chirurgus* | C | R |
| 18 | Black Ibis | *Pseudibis papillosa* | R | R |
| 19 | White Eye Buzzard | *Butastur teesa* | R | R |
| 20 | Oriental Honey Buzzard | Pernis ptilorhynchus | VR | R |
| 21 | Crested-serpent Eagle | *Spilornis cheela* | VR | R |
| 22 | Black-shouldered Kite | *Elanus caeruleus* | C | R |
| 23 | Shikra | *Accipiter badius* | C | R |
| 24 | Grey Francolin | *Francolinus pondicerianus* | R | R |

| | | | | |
|---|---|---|---|---|
| 25 | Common Quail | *Coturnix coturnix* | R | R |
| 26 | Rain Quail | *Coturnix coromandelica* | R | R |
| 27 | Jungle Bush Quail | *Perdicula asiatica* | C | R |
| 28 | Grey Jungle Fowl | *Gallus sonneratti* | C | R |
| 29 | Indian Peafowl | *Pavo cristatus* | C | R |
| 30 | White-breasted Waterhen | *Amaurornis phoenicurus* | C | R |
| 31 | Common Moorhen | *Gallinula chloropus* | R | R |
| 32 | Common Coot | *Fulica atra* | C | R |
| 33 | Red-wattled Lapwing | *Vanellus indicus* | C | R |
| 34 | Eurasian Thicknee (Stone Curlue) | Burhinus oedicnemus | VR | R |
| 35 | Common Sandpiper | *Actitis hypoleucos* | C | M |
| 36 | Little Stint | *Calidris minuta* | C | M |
| 37 | River Tern | *Sterna aurantia* | R | R |
| 38 | Yellow-footed Green Pigeon | *Treron phoenicopterus* | C | R |
| 39 | Eurasian Collared Dove | *Streptopelia decaocto* | C | R |
| 40 | Red Collared Dove | *Streptopelia tranquebarica* | R | R |
| 41 | Laughing Dove | *Streptopelia senegalensis* | VC | R |
| 42 | Spotted Dove | *Streptopelia chinensis* | C | R |
| 43 | Plum-headed Parakeet | *Psittacula cyanocephala* | VC | R |
| 44 | Rose ringed Parakeet | *Psittacula krameri* | VC | R |
| 45 | Alexandrine Parakeet | *Psittacula eupatria* | R | R |
| 46 | Jacobin (Pied) Cuckoo | *Clamator jacobinus* | C | BM |
| 47 | Common Hawk Cuckoo | *Cuculus varius* | VC | R |
| 48 | Eurasian Cuckoo | *Cuculus canorus* | M | BM |
| 49 | Indian Cuckoo | *Cuculus micropterus* | M | BM |
| 50 | Grey-bellied Cuckoo | *Cacomantis sonneratii* | M | BM |
| 51 | Asian Koel | *Eudynamys scolopaceus* | C | R |
| 52 | Greater Coucal | *Centropus sinensis* | C | R |
| 53 | Barn Owl | *Tyto alba* | R | R |
| 54 | Spotted Owlet | *Athene brama* | C | R |
| 55 | Indian Eagle Owl | *Bubo (bubo) bengalensis* | VR | R |
| 56 | Indian Nightjar | *Caprimulgus asiaticus* | C | R |
| 57 | Jungle Nightjar | Caprimulgus indicus | R | R |
| 58 | Asian Palm Swift | Cypsiurus balasiensis | C | R |
| 59 | House Swift | *Apus affinis* | C | R |
| 60 | Crested Tree Swift | *Hemiprocne coronate* | R | R |
| 61 | Pied (Lesser Pied) Kingfisher | *Ceryle rudis* | R | R |

| | | | | |
|---|---|---|---|---|
| 62 | Common Kingfisher | *Alcedo atthis* | C | R |
| 63 | White-throated Kingfisher | *Halcyon smyrnensis* | VC | R |
| 64 | Green Bee-eater | *Merops orientalis* | VC | R |
| 65 | Indian Roller | *Coracias benghalensis* | C | R |
| 66 | Indian Grey Hornbill | *Ocyceros birostris* | R | R |
| 67 | Coppersmith Barbet | *Megalaima haemacephala* | C | R |
| 68 | Black-rumped Flameback (Woodpecker) | *Dinopium benghalense* | R | R |
| 69 | Common Flameback (Woodpacker) | *Chrysocolaptes javensis* | C | R |
| 70 | Indian Pitta | Pitta brachyuran | C | BM |
| 71 | Small Minivet | *Pericrocotus cinnamomeus* | R | R |
| 72 | Indian Bushlark | *Mirafra erythroptera* | C | R |
| 73 | Ashy-crowned Sparrow Lark | *Eremopterix griseus* | R | R |
| 74 | Greater Short-toed Lark | *Calandrella bruchydactyla* | M | R |
| 75 | Rufous-tailed Lark | *Ammomanes phoenicura* | C | R |
| 76 | Oriental Skylark | *Alauda gulgula* | R | R |
| 77 | Paddy field Pipit | Anthus rufulus | C | R |
| 78 | Asian House Martin | Delichon dasypus | C | R |
| 79 | Dusky Crag Martin | *Hirundo concolor* | C | R |
| 80 | Wire-tailed Swallow | *Hirundo smithii* | C | R |
| 81 | Red-rumped Swallow | *Hirundo daurica* | C | R |
| 82 | Streak-throated Swallow | *Petrochelidon fulvicola* | VC | R |
| 83 | Barn Swallow | *Hirundo rustica* | C | M |
| 84 | Bay-backed Shrike | *Lanius vittatus* | C | R |
| 85 | Long-tailed Shrike | *Lanius schach* | C | R |
| 86 | Eurasian Golden Oriole | *Oriolus oriolus* | C | R |
| 87 | Black-hooded Oriole | Oriolus xanthornus | R | R |
| 88 | Black Drongo | *Dicrurus macrocercus* | VC | R |
| 89 | White-bellied Drongo | Dicrurus caerulescens | R | R |
| 90 | Greater Racket-tailed Drongo | Dicrurus paradiseus | VR | R |
| 91 | Common Myna | *Acridotheres tristis* | VC | R |
| 92 | Bramhani Starling | *Sturnia pagodarum* | C | R |
| 93 | Pied Starling | Pericrocotus cinnamomeus | C | R |
| 94 | Rufous (Indian) Treepie | *Dendrocitta vagabunda* | VC | R |
| 95 | House Crow | *Corvus splendens* | R | R |
| 96 | Common Woodshrike | *Tephrodornis pondicerianus* | C | R |
| 97 | Common Iora | *Aegithina tiphia* | R | R |

| | | | | |
|---|---|---|---|---|
| 98 | Red-vented Bulbul | *Pycnonotus cafer* | VC | R |
| 99 | Yellow-eyed Babbler | *Chrysomma sinense* | R | R |
| 100 | Common Babbler | *Turdoides caudate* | C | R |
| 101 | Jungle Babbler | *Turdoides striata* | VC | R |
| 102 | Large grey Babbler | Argya malcolmi | C | R |
| 103 | Tawny-bellied Babbler | Dumetia hyperythra | R | R |
| 104 | White-browed fantail | *Rhipidura aureola* | C | R |
| 105 | White-throated Fantail | *Rhipidura albicollis* | R | R |
| 106 | Asian Paradise-flycatcher | *Terpsiphone paradise* | R | R |
| 107 | Black-naped Monarch | *Hypothymisazurea* | R | R |
| 108 | Tickells Blue Flycatcher | Cyornis tickelliae | R | M |
| 109 | Jerdons Leaf Bird | Chloropsis jerdoni | R | R |
| 110 | Great Tit | *Parus major* | R | R |
| 112 | Plain Prinia | *Prinia inornata* | C | R |
| 113 | Ashy Prinia | *Prinia socialis* | VC | R |
| 114 | Grey-brested Prinia | *Prinia hodgsonii* | C | R |
| 115 | Common Tailorbird | *Orthotomus sutorius* | VC | R |
| 116 | Indian Robin | *Saxicoloides fulicatus* | VC | R |
| 117 | Oriental Magpie Robin | *Copsychus saularis* | C | R |
| 118 | Common Stonechat | *Saxicola torquata* | R | R |
| 119 | Pied Bushchat | *Saxicola caprata* | C | R |
| 120 | Purple-rumped Sunbird | *Leptocoma zeylonica* | R | R |
| 121 | Purple Sunbird | *Cinnyris asiaticus* | C | R |
| 122 | Oriental White-Eye | *Zosterops palpebrosus* | C | R |
| 123 | House Sparrow | *Passer domesticus* | C | R |
| 124 | Chestnut-shouldered Petronia | *Petronia xanthocollis* | C | R |
| 125 | Baya Weaver | *Ploceus philippinus* | VC | R |
| 126 | Red Avadavat (Red Munia) | *Amandava amandava* | R | R |
| 127 | Scaly-breasted Munia | *Lonchura punctulata* | C | R |
| 128 | Indian (Common) Silverbill | *Lonchura malabarica* | C | R |

Status- VR- Very Rare, R-Rare, C-Common, VC- Very Common
Residential Status -LM – Local Migrant, M – Migrant, BM- Breeding Migrant, R- Resident

**1.11.2 Insects and Butterflies: -**

A total number of 59 species of butterflies were recorded during the study. The list also includes the species listed by Mr. Abhay Ujagare and his team. Now this list has reached up to 65 species.

Due to the rainy weather, the population of butterflies was less. The list of butterfly species of Kanhargaon Sanctuary with their status is as follows

**List of Butterflies from Kanhargaon Wildlife Sanctuary**

| Sr. No | Common name | Scientific Name | Status |
|---|---|---|---|
| **Family : Hesperiidae** | | | |
| 1 | Indian Palm Bob | *Status gremius* | VR |
| 2 | Rice swift | *Borbocinnara* | VC |
| 3 | Paint brush Swift | *Baoris farri* | R |
| 4 | Great Swift | *Pelopidas assamensis* | R |
| 5 | Small Branded Swift | *Pelopidas mathias* | R |
| **Family : Papilionidae** | | | |
| 6 | Common Mormon | *Papilio polytes* | NR |
| 7 | Lime Butterfly | *Papilio demoleus* | VC |
| 8 | Common Rose | *Pachliopta arstolochiae* | VR |
| 9 | Crimson Rose | *Pachilopta hactor* | VR |
| 10 | Spot Swordtail | *Graphium nomius* | VR |
| 11 | Tailed Jay | *Graphuam Agamemnon* | C |
| **Family : Pieridae** | | | |
| 12 | Lemon Emigrant | *Catopsilia Pomona* | C |
| 13 | Mottled Emigrant | *Otopsilia pyranthe* | VC |
| 14 | Small grass yellow | *Eurema brigitta* | VC |
| 15 | Common grass yellow | *Eurema hecabe* | VC |
| 16 | Spotless Grass yellow | *Eurema laeta* | C |
| 17 | Common Albatross | *Appias albino* | VR |
| 18 | Common Jezebel | *Delis eucharis* | R |
| 19 | Pioneer | *Anaphaeis aurota* | R |
| 20 | Common Gull | *Ceporanerissa* | R |
| 21 | White orange tip | *Lxias Marianne* | R |
| 22 | Small Orange Tip | *Calotis etrida* | R |
| 23 | Plain Orange Tip | *Calotis eucharis* | R |
| 24 | Crimson Tip | *Calotis danae* | R |
| 25 | Small Salmon Arab | *Calotis amata* | R |
| **Family : Lycaenidae** | | | |
| 26 | Tiny Grass Blue | *Zizula hylax* | C |
| 27 | Dark Grass Blue | *Zizeeria karsandra* | C |

| | | | |
|---|---|---|---|
| 28 | Grass Jewel | *Freyeria trochylus* | C |
| 29 | Common Line Blue | *Prosotas nora* | VR |
| 30 | Tailless Line Blue | *Prosotas dubiosa* | C |
| 31 | Small Cupid | *Chilades parrhasius* | C |
| 32 | Gram Blue | *Euchrysops cnejus* | R |
| 33 | Lime blue | *Chilades laius* | R |
| 34 | Zebra blue | *Leptotes plinius* | C |
| 35 | Bright Babul Blue | *Azanus ubaldus* | R |
| 36 | Rounded Pierrot | *Tarucus nara* | VC |
| 37 | Common Pierrot | *Castalius rosimon* | C |
| 38 | Angled Pierrot | *Caleta caleta* | R |
| 39 | Plains Cupid | *Chilades pandava* | C |
| 40 | Western Centaur Oakblue | *Arhopala pseudocentaurus* | R |
| 41 | Indian Oakblue | *Arhopala atrax* | VR |
| **Family : Nymphalidae** | | | |
| 42 | Common Evening Brown | *Melanitis leda* | VC |
| 43 | Common Bushbrown | *Mycalesis perseus* | R |
| 44 | Pachmari Bushbrown | *Mycalesis mercea* | VR |
| 45 | Common Treebrown | *Lethe rohria* | R |
| 46 | Common Three Ring | *Yptluma asterope* | C |
| 47 | Yellow Pansy | *Junonia hierta* | VC |
| 48 | Lemon Pansy | *Junonia lemonias* | VC |
| 49 | Blue Pansy | *Junonia orithya* | VC |
| 50 | Chocolate Pansy | *Precis iphita* | VR |
| 51 | Plain Tiger | *Danaus chrysippus* | VC |
| 52 | Striped Tiger | *Danaus genutia* | C |
| 53 | Blue Tiger | *Tirumala limniace* | C |
| 54 | Common Leopard | *Phalantha* | VC |
| 55 | Baronet | *Enthalia nais* | R |
| 56 | Common Sailor | *Common Sailer* | C |
| 57 | Joker | *Byblia ilithyia* | R |
| 58 | Tawny Coster | *Acraea violae* | C |
| 59 | Common Castor | *Ariadne merione* | C |
| 60 | Angled Castor | *Ariadne ariadne* | R |

| | | | |
|---|---|---|---|
| 61 | Painted Laby | *Cynthia ariadne* | C |
| 62 | Common Indian Crow | *Euploea core* | VC |
| 63 | Danaid Eggfly | *Hypolamnas misippus* | R |
| 64 | Great Eggfly | *Hypolamnas bolina* | C |
| **Family : Riodinidae** | | | |
| 65 | Plum Judy | *Abisara eucherius* | C |

# Annexure IV

## APPENDIX NO XLVIII

## STATEMENT SHOWING YEARWISE THINNING SCHDULE OF CENTRAL CHANDA DIVISION

| Sr. no | Com No | Year of Plantation | I | II | III | IV | V | VI | VII | VIII | IX | X | XI | XII | XIII | XIV | XV/ Final | Total |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 |
| **Thining year 2020-21** | | | | | | | | | | | | | | | | | | |
| 1 | 19 | 1966 | | | | | | | | | | 40.467 | | | | | | 40.467 |
| 2 | 19 | 1971 | | | | | | | | | 72.000 | | | | | | | 72.000 |
| 3 | 70 | 1941 | | | | | | | | | | | | | | | 2.023 | 2.023 |
| 4 | 74 | 2011 | 18.500 | | | | | | | | | | | | | | | 18.500 |
| 5 | 14 | 1981 | | | | | | | 103.386 | | | | | | | | | 103.386 |
| 6 | 14 | 2006 | | 24.000 | | | | | | | | | | | | | | 24.000 |
| 7 | 8 | 2011 | 26.000 | | | | | | | | | | | | | | | 26.000 |
| 8 | 11 | 2011 | 36.000 | | | | | | | | | | | | | | | 36.000 |
| 9 | 12 | 1981 | | | | | | | 5.000 | | | | | | | | | 5.000 |
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 |
| 10 | 13 | 1981 | | | | | | | 179.052 | | | | | | | | | 179.052 |
| 11 | 20 | 1971 | | | | | | | | | 162.200 | | | | | | | 162.200 |
| 12 | 21 | 1971 | | | | | | | | | 73.000 | | | | | | | 73.000 |
| 13 | 12 | 2011 | 11.300 | | | | | | | | | | | | | | | 11.300 |
| 14 | 65 | 2011 | 30.000 | | | | | | | | | | | | | | | 30.000 |
| 15 | 68 | 2006 | | 29.000 | | | | | | | | | | | | | | 29.000 |
| 16 | 132 | 1981 | | | | | | | 85.678 | | | | | | | | | 85.678 |
| 17 | 70 | 1961 | | | | | | | | | | | 16.187 | | | | | 16.187 |
| 18 | 70 | 1986 | | | | | | 19.677 | | | | | | | | | | 19.677 |
| 19 | 130 | 1986 | | | | | | 18.708 | | | | | | | | | | 18.708 |
| 20 | 130 | 2006 | | 19.360 | | | | | | | | | | | | | | 19.360 |
| 21 | 131 | 1981 | | | | | | | 24.000 | | | | | | | | | 24.000 |

| | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 22 | 131 | 1966 | | | | | | | | | 20.234 | | | | | | 20.234 |
| 23 | 141 | 1986 | | | | | | 31.283 | | | | | | | | | 31.283 |
| 24 | 146 | 2006 | | 96.000 | | | | | | | | | | | | | 96.000 |
| 25 | 149 | 2011 | 72.750 | | | | | | | | | | | | | | 72.750 |
| 26 | 72 | 1961 | | | | | | | | | | 6.070 | | | | | 6.070 |
| 27 | 72 | 1971 | | | | | | | | | 8.094 | | | | | | 8.094 |
| 28 | 72 | 1976 | | | | | | | | 6.000 | | | | | | | 6.000 |
| 29 | 2 | 1981 | | | | | | | 88.000 | | | | | | | | 88.000 |
| 30 | 75 | 1986 | | | | | | 25.623 | | | | | | | | | 25.623 |
| 31 | 79 | 1961 | | | | | | | | | | 8.094 | | | | | 8.094 |
| 32 | 81 | 1986 | | | | | | 52.800 | | | | | | | | | 52.800 |
| 33 | 81 | 2006 | | 9.500 | | | | | | | | | | | | | 9.500 |
| 34 | 84 | 2011 | 10.000 | | | | | | | | | | | | | | 10.000 |
| 35 | 103 | 1966 | | | | | | | | | 30.000 | | | | | | 30.000 |
| 36 | 104 | 1981 | | | | | | | 20.000 | | | | | | | | 20.000 |
| 37 | 105 | 2011 | 25.400 | | | | | | | | | | | | | | 25.400 |
| 38 | 115 | 1986 | | | | | | 38.200 | | | | | | | | | 38.200 |
| 39 | 123 | 2011 | 15.000 | | | | | | | | | | | | | | 15.000 |
| 40 | 123 | 1986 | | | | | | 32.000 | | | | | | | | | 32.000 |
| 41 | 41 | 1981 | | | | | | | 7.000 | | | | | | | | 7.000 |
| 42 | 42 | 2011 | 46.330 | | | | | | | | | | | | | | 46.330 |
| 43 | 43 | 1981 | | | | | | | 50.500 | | | | | | | | 50.500 |
| 44 | 44 | 1981 | | | | | | | 10.174 | | | | | | | | 10.174 |
| 45 | 46 | 2011 | 33.215 | | | | | | | | | | | | | | 33.215 |
| 46 | 133 | 1966 | | | | | | | | | 40.469 | | | | | | 40.469 |
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 |
| 47 | 133 | 1981 | | | | | | | 10.000 | | | | | | | | 10.000 |
| 48 | 133 | 2011 | 20.000 | | | | | | | | | | | | | | 20.000 |
| 49 | 62 | 2011 | 20.500 | | | | | | | | | | | | | | 20.500 |
| 50 | 134 | 1986 | | | | | | 53.500 | | | | | | | | | 53.500 |
| 51 | 60 | 2011 | 31.500 | | | | | | | | | | | | | | 31.500 |

| | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 52 | 51 | 2011 | 25.650 | | | | | | | | | | | | | | | 25.650 |
| 53 | 30 | 2011 | 10.000 | | | | | | | | | | | | | | | 10.000 |
| 54 | 22 | 1976 | | | | | | | | 117.000 | | | | | | | | 117.000 |
| 55 | 25 | 1976 | | | | | | | | 10.000 | | | | | | | | 10.000 |
| 56 | 40 | 1981 | | | | | | | 12.000 | | | | | | | | | 12.000 |
| 57 | 31 | 2006 | | 18.800 | | | | | | | | | | | | | | 18.800 |
| 58 | 33 | 1961 | | | | | | | | | | | 4.046 | | | | | 4.046 |
| 59 | 33 | 1976 | | | | | | | | 30.000 | | | | | | | | 30.000 |
| 60 | 34 | 1976 | | | | | | | | 20.000 | | | | | | | | 20.000 |
| 61 | 56 | 1976 | | | | | | | | 7.000 | | | | | | | | 7.000 |
| 62 | 56 | 2011 | 21.350 | | | | | | | | | | | | | | | 21.350 |
| 63 | 28 | 2011 | 27.400 | | | | | | | | | | | | | | | 27.400 |
| 64 | 30 | 2006 | | 19.200 | | | | | | | | | | | | | | 19.200 |
| 65 | 36 | 1976 | | | | | | | | 50.000 | | | | | | | | 50.000 |
| 66 | 49 | 1976 | | | | | | | | 45.000 | | | | | | | | 45.000 |
| 67 | 49 | 2011 | 17.375 | | | | | | | | | | | | | | | 17.375 |
| 68 | 39 | 1981 | | | | | | | 20.000 | | | | | | | | | 20.000 |
| 69 | 39 | 2011 | 10.000 | | | | | | | | | | | | | | | 10.000 |
| 70 | 24 | 1976 | | | | | | | | 2.950 | | | | | | | | 2.950 |
| 71 | 26 | 1976 | | | | | | | | 4.250 | | | | | | | | 4.250 |
| 72 | 48 | 2006 | | 50.000 | | | | | | | | | | | | | | 50.000 |
| | | **Total** | **508.270** | **265.860** | **0.000** | **0.000** | **0.000** | **271.791** | **614.790** | **292.200** | **315.294** | **131.170** | **34.397** | **0.000** | **0.000** | **0.000** | **2.023** | **2435.795** |

| **Thining year 2021-22** | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 16 | 1967 | | | | | | | | | 40.468 | | | | | | 40.468 |
| 2 | 5 | 1977 | | | | | | | | 89.673 | | | | | | | 89.673 |
| 3 | 6 | 1977 | | | | | | | | 138.764 | | | | | | | 138.764 |
| 4 | 14 | 1962 | | | | | | | | | | 6.140 | | | | | 6.140 |
| 5 | 14 | 2012 | 40.000 | | | | | | | | | | | | | | 40.000 |
| 6 | 11 | 2007 | | 28.000 | | | | | | | | | | | | | 28.000 |
| 7 | 17 | 1982 | | | | | | | 160.609 | | | | | | | | 160.609 |

| 8 | 65 | 2012 | 30.000 | | | | | | | | | | | | | | | 30.000 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 |
| 9 | 68 | 1967 | | | | | | | | | | 10.117 | | | | | | 10.117 |
| 10 | 132 | 1982 | | | | | | | 42.766 | | | | | | | | | 42.766 |
| 11 | 70 | 1962 | | | | | | | | | | | 12.140 | | | | | 12.140 |
| 12 | 70 | 1942 | | | | | | | | | | | | | | | 2.023 | 2.023 |
| 13 | 105 | 1942 | | | | | | | | | | | | | | | 2.023 | 2.023 |
| 14 | 78 | 1942 | | | | | | | | | | | | | | | 0.809 | 0.809 |
| 15 | 129 | 2012 | 35.000 | | | | | | | | | | | | | | | 35.000 |
| 16 | 128 | 1987 | | | | | | 6.135 | | | | | | | | | | 6.135 |
| 17 | 131 | 1982 | | | | | | | 1.500 | | | | | | | | | 1.500 |
| 18 | 141 | 1987 | | | | | | 6.000 | | | | | | | | | | 6.000 |
| 19 | 69 | 2002 | | | 40.000 | | | | | | | | | | | | | 40.000 |
| 20 | 152 | 2012 | 78.961 | | | | | | | | | | | | | | | 78.961 |
| 21 | 72 | 1962 | | | | | | | | | | | 6.070 | | | | | 6.070 |
| 22 | 72 | 1967 | | | | | | | | | | 6.070 | | | | | | 6.070 |
| 23 | 72 | 1972 | | | | | | | | | 6.070 | | | | | | | 6.070 |
| 24 | 72 | 1977 | | | | | | | | 20.000 | | | | | | | | 20.000 |
| 25 | 1 | 2012 | 10.000 | | | | | | | | | | | | | | | 10.000 |
| 26 | 1 | 2007 | | 42.000 | | | | | | | | | | | | | | 42.000 |
| 27 | 4 | 1982 | | | | | | | 66.132 | | | | | | | | | 66.132 |
| 28 | 75 | 2012 | 19.000 | | | | | | | | | | | | | | | 19.000 |
| 29 | 76 | 1982 | | | | | | | 40.000 | | | | | | | | | 40.000 |
| 30 | 79 | 1967 | | | | | | | | | | 4.047 | | | | | | 4.047 |
| 31 | 81 | 1962 | | | | | | | | | | | 8.094 | | | | | 8.094 |
| 32 | 81 | 2012 | 25.000 | | | | | | | | | | | | | | | 25.000 |
| 33 | 83 | 2007 | | 20.000 | | | | | | | | | | | | | | 20.000 |
| 34 | 105 | 2007 | | 27.000 | | | | | | | | | | | | | | 27.000 |
| 35 | 105 | 2012 | 24.035 | | | | | | | | | | | | | | | 24.035 |
| 36 | 107 | 2007 | | 19.800 | | | | | | | | | | | | | | 19.800 |
| 37 | 116 | 1987 | | | | | | 2.900 | | | | | | | | | | 2.900 |

| | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 38 | 116 | 2007 | | 8.200 | | | | | | | | | | | | | | 8.200 |
| 39 | 121 | 2007 | | 20.000 | | | | | | | | | | | | | | 20.000 |
| 40 | 79 | 2007 | | 12.000 | | | | | | | | | | | | | | 12.000 |
| 41 | 123 | 1987 | | | | | | 3.800 | | | | | | | | | | 3.800 |
| 42 | 124 | 1962 | | | | | | | | | | | 12.140 | | | | | 12.140 |
| 43 | 124 | 2012 | 12.000 | | | | | | | | | | | | | | | 12.000 |
| 44 | 41 | 1982 | | | | | | | 12.500 | | | | | | | | | 12.500 |
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 |
| 45 | 42 | 2012 | 20.000 | | | | | | | | | | | | | | | 20.000 |
| 46 | 43 | 1982 | | | | | | | 15.000 | | | | | | | | | 15.000 |
| 47 | 46 | 1982 | | | | | | | 23.062 | | | | | | | | | 23.062 |
| 48 | 46 | 2012 | 30.000 | | | | | | | | | | | | | | | 30.000 |
| 49 | 133 | 1967 | | | | | | | | | | 20.234 | | | | | | 20.234 |
| 50 | 133 | 2007 | | 21.978 | | | | | | | | | | | | | | 21.978 |
| 51 | 136 | 1982 | | | | | | | 12.000 | | | | | | | | | 12.000 |
| 52 | 62 | 1967 | | | | | | | | | | 20.234 | | | | | | 20.234 |
| 53 | 62 | 2012 | 23.300 | | | | | | | | | | | | | | | 23.300 |
| 54 | 55 | 1977 | | | | | | | | 104.622 | | | | | | | | 104.622 |
| 55 | 51 | 1982 | | | | | | | 31.325 | | | | | | | | | 31.325 |
| 56 | 52 | 2012 | 31.000 | | | | | | | | | | | | | | | 31.000 |
| 57 | 54 | 1977 | | | | | | | | 85.480 | | | | | | | | 85.480 |
| 58 | 22 | 2007 | | 17.250 | | | | | | | | | | | | | | 17.250 |
| 59 | 24 | 1972 | | | | | | | | | 104.584 | | | | | | | 104.584 |
| 60 | 64 | 1972 | | | | | | | | | 36.900 | | | | | | | 36.900 |
| 61 | 59 | 1972 | | | | | | | | | 149.257 | | | | | | | 149.257 |
| 62 | 31 | 2007 | | 13.750 | | | | | | | | | | | | | | 13.750 |

| | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 63 | 58 | 1972 | | | | | | | | | 15.000 | | | | | | | 15.000 |
| 64 | 33 | 2007 | | 16.000 | | | | | | | | | | | | | | 16.000 |
| 65 | 56 | 1977 | | | | | | | | 70.165 | | | | | | | | 70.165 |
| 66 | 56 | 2012 | 18.000 | | | | | | | | | | | | | | | 18.000 |
| 67 | 28 | 1987 | | | | | | 4.840 | | | | | | | | | | 4.840 |
| 68 | 35 | 2007 | | 15.650 | | | | | | | | | | | | | | 15.650 |
| 69 | 49 | 2012 | 10.000 | | | | | | | | | | | | | | | 10.000 |
| 70 | 50 | 2012 | 40.000 | | | | | | | | | | | | | | | 40.000 |
| 71 | 40 | 2012 | 12.000 | | | | | | | | | | | | | | | 12.000 |
| 72 | 23 | 1972 | | | | | | | | | 154.220 | | | | | | | 154.220 |
| 73 | 55 | 2007 | | 23.500 | | | | | | | | | | | | | | 23.500 |
| 74 | 24 | 2007 | | 10.750 | | | | | | | | | | | | | | 10.750 |
| 75 | 74 | 1947 | | | | | | | | | | | | | | 6.070 | | 6.070 |
| | | **Total** | **458.296** | **295.878** | **40.000** | **0.000** | **0.000** | **23.675** | **404.894** | **508.704** | **466.031** | **101.170** | **44.584** | **0.000** | **0.000** | **6.070** | **4.855** | **2354.157** |
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 |

| **Thining year 2022-23** | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 16 | 1983 | | | | | | | 0.800 | | | | | | | | | 0.800 |
| 2 | 19 | 1963 | | | | | | | | | | | 20.234 | | | | | 20.234 |
| 3 | 73 | 1983 | | | | | | | 43.100 | | | | | | | | | 43.100 |
| 4 | 4 | 1943 | | | | | | | | | | | | | | | 0.809 | 0.809 |
| 5 | 5 | 2013 | 25.000 | | | | | | | | | | | | | | | 25.000 |
| 6 | 6 | 1978 | | | | | | | | 16.000 | | | | | | | | 16.000 |
| 7 | 14 | 1963 | | | | | | | | | | | 4.281 | | | | | 4.281 |
| 8 | 14 | 2013 | 40.000 | | | | | | | | | | | | | | | 40.000 |
| 9 | 7 | 1978 | | | | | | | | 177.590 | | | | | | | | 177.590 |
| 10 | 9 | 1978 | | | | | | | | 192.824 | | | | | | | | 192.824 |
| 11 | 17 | 1983 | | | | | | | 2.540 | | | | | | | | | 2.540 |

| | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 12 | 67 | 1983 | | | | | | | 22.370 | | | | | | | | | 22.370 |
| 13 | 69 | 1963 | | | | | | | | | | | 16.187 | | | | | 16.187 |
| 14 | 66 | 2008 | | 10.000 | | | | | | | | | | | | | | 10.000 |
| 15 | 68 | 2013 | 31.500 | | | | | | | | | | | | | | | 31.500 |
| 16 | 131 | 1943 | | | | | | | | | | | | | | | 4.047 | 4.047 |
| 17 | 105 | 1943 | | | | | | | | | | | | | | | 4.047 | 4.047 |
| 18 | 132 | 1983 | | | | | | | 2.750 | | | | | | | | | 2.750 |
| 19 | 129 | 2013 | 35.000 | | | | | | | | | | | | | | | 35.000 |
| 20 | 131 | 1983 | | | | | | | 3.000 | | | | | | | | | 3.000 |
| 21 | 72 | 1958 | | | | | | | | | | | | 6.070 | | | | 6.070 |
| 22 | 72 | 1963 | | | | | | | | | | | 6.070 | | | | | 6.070 |
| 23 | 72 | 1968 | | | | | | | | | | 6.070 | | | | | | 6.070 |
| 24 | 72 | 1978 | | | | | | | | 6.000 | | | | | | | | 6.000 |
| 25 | 72 | 1988 | | | | | | 15.000 | | | | | | | | | | 15.000 |
| 26 | 65 | 2013 | 18.500 | | | | | | | | | | | | | | | 18.500 |
| 27 | 65 | 1983 | | | | | | | 42.120 | | | | | | | | | 42.120 |
| 28 | 121 | 2008 | | 10.000 | | | | | | | | | | | | | | 10.000 |
| 29 | 1 | 2013 | 23.000 | | | | | | | | | | | | | | | 23.000 |
| 30 | 79 | 1983 | | | | | | | 80.000 | | | | | | | | | 80.000 |
| 31 | 81 | 2013 | 20.000 | | | | | | | | | | | | | | | 20.000 |
| 32 | 83 | 2008 | | 25.000 | | | | | | | | | | | | | | 25.000 |
| 33 | 103 | 1978 | | | | | | | | 20.000 | | | | | | | | 20.000 |
| 34 | 124 | 2003 | | | 50.700 | | | | | | | | | | | | | 50.700 |
| 35 | 105 | 2008 | | 30.000 | | | | | | | | | | | | | | 30.000 |
| 36 | 107 | 2008 | | 25.000 | | | | | | | | | | | | | | 25.000 |
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 |
| 37 | 76 | 2013 | 20.000 | | | | | | | | | | | | | | | 20.000 |
| 38 | 42 | 2013 | 10.000 | | | | | | | | | | | | | | | 10.000 |
| 39 | 46 | 2013 | 14.150 | | | | | | | | | | | | | | | 14.150 |
| 40 | 47 | 1983 | | | | | | | 60.361 | | | | | | | | | 60.361 |

| | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 41 | 133 | 2008 | | 25.000 | | | | | | | | | | | | | | 25.000 |
| 42 | 136 | 2013 | 19.400 | | | | | | | | | | | | | | | 19.400 |
| 43 | 53 | 2013 | 24.050 | | | | | | | | | | | | | | | 24.050 |
| 44 | 55 | 1978 | | | | | | | | 3.500 | | | | | | | | 3.500 |
| 45 | 57 | 1963 | | | | | | | | | | | 12.141 | | | | | 12.141 |
| 46 | 57 | 1973 | | | | | | | | | 120.622 | | | | | | | 120.622 |
| 47 | 60 | 1978 | | | | | | | | 71.995 | | | | | | | | 71.995 |
| 48 | 52 | 1983 | | | | | | | 51.300 | | | | | | | | | 51.300 |
| 49 | 64 | 2008 | | 16.000 | | | | | | | | | | | | | | 16.000 |
| 50 | 31 | 1973 | | | | | | | | | 43.500 | | | | | | | 43.500 |
| 51 | 48 | 1978 | | | | | | | | 18.970 | | | | | | | | 18.970 |
| 52 | 32 | 1973 | | | | | | | | | 117.028 | | | | | | | 117.028 |
| 53 | 32 | 2008 | | 10.000 | | | | | | | | | | | | | | 10.000 |
| 54 | 58 | 1973 | | | | | | | | | 55.000 | | | | | | | 55.000 |
| 55 | 33 | 2008 | | 12.500 | | | | | | | | | | | | | | 12.500 |
| 56 | 56 | 2013 | 10.000 | | | | | | | | | | | | | | | 10.000 |
| 57 | 28 | 2008 | | 25.000 | | | | | | | | | | | | | | 25.000 |
| 58 | 29 | 2013 | 35.650 | | | | | | | | | | | | | | | 35.650 |
| 59 | 37 | 1978 | | | | | | | | 17.060 | | | | | | | | 17.060 |
| 60 | 37 | 2008 | | 16.500 | | | | | | | | | | | | | | 16.500 |
| 61 | 50 | 2013 | 10.000 | | | | | | | | | | | | | | | 10.000 |
| 62 | 38 | 1978 | | | | | | | | 88.170 | | | | | | | | 88.170 |
| 63 | 84 | 2003 | | | 14.000 | | | | | | | | | | | | | 14.000 |
| 64 | 11 | 2003 | | | 52.350 | | | | | | | | | | | | | 52.350 |
| 65 | 48 | 2013 | 23.100 | | | | | | | | | | | | | | | 23.100 |
| | | **Total** | **359.350** | **205.000** | ###### | **0.000** | **0.000** | **15.000** | **308.341** | **612.109** | **336.150** | **6.070** | **58.913** | **6.070** | **0.000** | **0.000** | **8.903** | **2032.956** |

| **Thining year 2023-24** | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 16 | 2004 | | | 56.390 | | | | | | | | | | | | | 56.390 |
| 2 | 19 | 1964 | | | | | | | | | | | 20.234 | | | | | 20.234 |
| 3 | 74 | 1984 | | | | | | | 117.464 | | | | | | | | | 117.464 |

| 4 | 5 | 2014 | 15.500 | | | | | | | | | | | | | | | 15.500 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 5 | 14 | 2014 | 23.400 | | | | | | | | | | | | | | | 23.400 |
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 |
| 6 | 7 | 1979 | | | | | | | | 3.750 | | | | | | | | 3.750 |
| 7 | 8 | 1979 | | | | | | | | 127.341 | | | | | | | | 127.341 |
| 8 | 9 | 1979 | | | | | | | | 5.500 | | | | | | | | 5.500 |
| 9 | 10 | 1979 | | | | | | | | 145.802 | | | | | | | | 145.802 |
| 10 | 17 | 1969 | | | | | | | | | | 20.234 | | | | | | 20.234 |
| 11 | 67 | 2014 | 48.000 | | | | | | | | | | | | | | | 48.000 |
| 12 | 67 | 1944 | | | | | | | | | | | | | | | 2.023 | 2.023 |
| 13 | 79 | 1944 | | | | | | | | | | | | | | | 4.047 | 4.047 |
| 14 | 18 | 1944 | | | | | | | | | | | | | | | 2.047 | 2.047 |
| 15 | 69 | 1984 | | | | | | | 45.500 | | | | | | | | | 45.500 |
| 16 | 63 | 1979 | | | | | | | | 21.368 | | | | | | | | 21.368 |
| 17 | 66 | 1984 | | | | | | | 32.760 | | | | | | | | | 32.760 |
| 18 | 68 | 1984 | | | | | | | 90.000 | | | | | | | | | 90.000 |
| 19 | 132 | 1969 | | | | | | | | | | 14.164 | | | | | | 14.164 |
| 20 | 70 | 1984 | | | | | | | 42.652 | | | | | | | | | 42.652 |
| 21 | 142 | 2009 | | 25.000 | | | | | | | | | | | | | | 25.000 |
| 22 | 147 | 2009 | | 30.000 | | | | | | | | | | | | | | 30.000 |
| 23 | 72 | 1959 | | | | | | | | | | | | 10.117 | | | | 10.117 |
| 24 | 72 | 1964 | | | | | | | | | | | 6.070 | | | | | 6.070 |
| 25 | 72 | 1969 | | | | | | | | | | 6.070 | | | | | | 6.070 |
| 26 | 72 | 1974 | | | | | | | | | 6.000 | | | | | | | 6.000 |
| 27 | 72 | 1979 | | | | | | | | 6.000 | | | | | | | | 6.000 |
| 28 | 72 | 1989 | | | | | | 63.000 | | | | | | | | | | 63.000 |
| 29 | 20 | 2014 | 19.350 | | | | | | | | | | | | | | | 19.350 |
| 30 | 3 | 2014 | 20.000 | | | | | | | | | | | | | | | 20.000 |
| 31 | 79 | 1964 | | | | | | | | | | | 2.023 | | | | | 2.023 |
| 32 | 80 | 1984 | | | | | | | 40.000 | | | | | | | | | 40.000 |
| 33 | 81 | 2014 | 20.000 | | | | | | | | | | | | | | | 20.000 |

| | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 34 | 83 | 2009 | | 11.200 | | | | | | | | | | | | | | 11.200 |
| 35 | 84 | 1964 | | | | | | | | | | | 29.000 | | | | | 29.000 |
| 36 | 84 | 2004 | | | 20.000 | | | | | | | | | | | | | 20.000 |
| 37 | 103 | 1979 | | | | | | | | 34.000 | | | | | | | | 34.000 |
| 38 | 104 | 1979 | | | | | | | | 70.000 | | | | | | | | 70.000 |
| 39 | 104 | 1964 | | | | | | | | | | | 9.105 | | | | | 9.105 |
| 40 | 104 | 1964 | | | | | | | | | | | 2.023 | | | | | 2.023 |
| 41 | 105 | 2009 | | 25.000 | | | | | | | | | | | | | | 25.000 |
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 |
| 42 | 106 | 2004 | | | 40.000 | | | | | | | | | | | | | 40.000 |
| 43 | 118 | 2009 | | 25.225 | | | | | | | | | | | | | | 25.225 |
| 44 | 122 | 1959 | | | | | | | | | | | | 8.094 | | | | 8.094 |
| 45 | 122 | 2004 | | | 58.000 | | | | | | | | | | | | | 58.000 |
| 46 | 43 | 2014 | 25.000 | | | | | | | | | | | | | | | 25.000 |
| 47 | 47 | 2014 | 15.250 | | | | | | | | | | | | | | | 15.250 |
| 48 | 133 | 2009 | | 12.000 | | | | | | | | | | | | | | 12.000 |
| 49 | 136 | 2014 | 10.500 | | | | | | | | | | | | | | | 10.500 |
| 50 | 41 | 2004 | | | 35.000 | | | | | | | | | | | | | 35.000 |
| 51 | 61 | 1979 | | | | | | | | 11.000 | | | | | | | | 11.000 |
| 52 | 62 | 1979 | | | | | | | | 32.515 | | | | | | | | 32.515 |
| 53 | 53 | 1984 | | | | | | | 30.000 | | | | | | | | | 30.000 |
| 54 | 53 | 2014 | 15.000 | | | | | | | | | | | | | | | 15.000 |
| 55 | 55 | 1979 | | | | | | | | 4.046 | | | | | | | | 4.046 |
| 56 | 22 | 1974 | | | | | | | | | 45.000 | | | | | | | 45.000 |
| 57 | 22 | 1979 | | | | | | | | 3.000 | | | | | | | | 3.000 |
| 58 | 59 | 2009 | | 11.350 | | | | | | | | | | | | | | 11.350 |
| 59 | 58 | 1964 | | | | | | | | | | | 20.234 | | | | | 20.234 |
| 60 | 58 | 1974 | | | | | | | | | 10.000 | | | | | | | 10.000 |
| 61 | 58 | 2009 | | 17.300 | | | | | | | | | | | | | | 17.300 |
| 62 | 26 | 1974 | | | | | | | | | 65.750 | | | | | | | 65.750 |
| 63 | 27 | 1974 | | | | | | | | | 10.000 | | | | | | | 10.000 |

| | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 64 | 28 | 2009 | | 23.000 | | | | | | | | | | | | | | 23.000 |
| 65 | 29 | 2014 | 29.700 | | | | | | | | | | | | | | | 29.700 |
| 66 | 30 | 1974 | | | | | | | | | 50.000 | | | | | | | 50.000 |
| 67 | 25 | 1974 | | | | | | | | | 76.001 | | | | | | | 76.001 |
| 68 | 37 | 1979 | | | | | | | | 20.000 | | | | | | | | 20.000 |
| 69 | 50 | 2014 | 12.300 | | | | | | | | | | | | | | | 12.300 |
| 70 | 48 | 2014 | 18.000 | | | | | | | | | | | | | | | 18.000 |
| | | Total | **272.000** | **180.075** | **######** | **0.000** | **0.000** | **63.000** | **398.376** | **484.322** | **262.751** | **40.468** | **88.689** | **18.211** | **0.000** | **0.000** | **8.117** | **2025.399** |

| **Thining year 2024-25** | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 16 | 2015 | 2.023 | | | | | | | | | | | | | | | 2.023 |
| 2 | 19 | 1965 | | | | | | | | | | | 24.281 | | | | | 24.281 |
| 3 | 19 | 1970 | | | | | | | | | | 147.710 | | | | | | 147.710 |
| 4 | 5 | 2015 | 25.000 | | | | | | | | | | | | | | | 25.000 |
| 5 | 14 | 2015 | 29.000 | | | | | | | | | | | | | | | 29.000 |
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 |
| 6 | 14 | 1945 | | | | | | | | | | | | | | | 2.426 | 2.426 |
| 7 | 11 | 1980 | | | | | | | | 60.840 | | | | | | | | 60.840 |
| 8 | 12 | 1980 | | | | | | | | 148.185 | | | | | | | | 148.185 |
| 9 | 13 | 2005 | | | 15.500 | | | | | | | | | | | | | 15.500 |
| 10 | 20 | 2015 | 24.200 | | | | | | | | | | | | | | | 24.200 |
| 11 | 20 | 1945 | | | | | | | | | | | | | | | 4.047 | 4.047 |
| 12 | 67 | 2015 | 36.000 | | | | | | | | | | | | | | | 36.000 |
| 13 | 70 | 1985 | | | | | | | 11.236 | | | | | | | | | 11.236 |
| 14 | 130 | 1985 | | | | | | | 15.500 | | | | | | | | | 15.500 |
| 15 | 131 | 1980 | | | | | | | | 63.717 | | | | | | | | 63.717 |
| 16 | 131 | 1960 | | | | | | | | | | | | 8.094 | | | | 8.094 |
| 17 | 131 | 1965 | | | | | | | | | | | 20.234 | | | | | 20.234 |
| 18 | 140 | 2005 | | | 43.500 | | | | | | | | | | | | | 43.500 |
| 19 | 142 | 2010 | | 20.000 | | | | | | | | | | | | | | 20.000 |

| | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 20 | 148 | 2010 | | 106.040 | | | | | | | | | | | | | | 106.040 |
| 21 | 72 | 1960 | | | | | | | | | | | | 6.070 | | | | 6.070 |
| 22 | 75 | 1985 | | | | | | | 30.090 | | | | | | | | | 30.090 |
| 23 | 72 | 1965 | | | | | | | | | | | 6.070 | | | | | 6.070 |
| 24 | 72 | 1970 | | | | | | | | | | 6.070 | | | | | | 6.070 |
| 25 | 72 | 1975 | | | | | | | | | 6.000 | | | | | | | 6.000 |
| 26 | 72 | 1980 | | | | | | | | 6.000 | | | | | | | | 6.000 |
| 27 | 72 | 1990 | | | | | | 123.000 | | | | | | | | | | 123.000 |
| 28 | 10 | 2015 | 27.000 | | | | | | | | | | | | | | | 27.000 |
| 29 | 1 | 1960 | | | | | | | | | | | | 22.140 | | | | 22.140 |
| 30 | 3 | 1980 | | | | | | | | 60.000 | | | | | | | | 60.000 |
| 31 | 3 | 2005 | | | 70.000 | | | | | | | | | | | | | 70.000 |
| 32 | 3 | 2015 | 20.000 | | | | | | | | | | | | | | | 20.000 |
| 33 | 76 | 2015 | 20.000 | | | | | | | | | | | | | | | 20.000 |
| 34 | 80 | 1985 | | | | | | | 1.300 | | | | | | | | | 1.300 |
| 35 | 80 | 1965 | | | | | | | | | | | 12.140 | | | | | 12.140 |
| 36 | 80 | 2010 | | 12.100 | | | | | | | | | | | | | | 12.100 |
| 37 | 81 | 1985 | | | | | | | 58.750 | | | | | | | | | 58.750 |
| 38 | 81 | 2015 | 20.000 | | | | | | | | | | | | | | | 20.000 |
| 39 | 102 | 2015 | 10.000 | | | | | | | | | | | | | | | 10.000 |
| 40 | 104 | 1975 | | | | | | | | | 68.000 | | | | | | | 68.000 |
| 41 | 105 | 2010 | | 23.000 | | | | | | | | | | | | | | 23.000 |
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 |
| 42 | 106 | 2015 | 15.000 | | | | | | | | | | | | | | | 15.000 |
| 43 | 107 | 2010 | | 14.500 | | | | | | | | | | | | | | 14.500 |
| 44 | 116 | 1965 | | | | | | | | | | | 12.140 | | | | | 12.140 |
| 45 | 122 | 2010 | | 13.000 | | | | | | | | | | | | | | 13.000 |
| 46 | 123 | 2005 | | | 12.940 | | | | | | | | | | | | | 12.940 |
| 47 | 124 | 1960 | | | | | | | | | | | | 8.094 | | | | 8.094 |
| 48 | 43 | 2015 | 20.000 | | | | | | | | | | | | | | | 20.000 |
| 49 | 47 | 2015 | 17.850 | | | | | | | | | | | | | | | 17.850 |

| | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 50 | 133 | 1980 | | | | | | | | 5.000 | | | | | | | | 5.000 |
| 51 | 133 | 2010 | | 20.000 | | | | | | | | | | | | | | 20.000 |
| 52 | 61 | 2010 | | 10.000 | | | | | | | | | | | | | | 10.000 |
| 53 | 62 | 1980 | | | | | | | | 29.270 | | | | | | | | 29.270 |
| 54 | 134 | 1985 | | | | | | | 31.250 | | | | | | | | | 31.250 |
| 55 | 53 | 2015 | 15.000 | | | | | | | | | | | | | | | 15.000 |
| 56 | 60 | 2010 | | 16.000 | | | | | | | | | | | | | | 16.000 |
| 57 | 51 | 2005 | | | 15.000 | | | | | | | | | | | | | 15.000 |
| 58 | 51 | 2010 | | 11.700 | | | | | | | | | | | | | | 11.700 |
| 59 | 54 | 2015 | 10.000 | | | | | | | | | | | | | | | 10.000 |
| 60 | 135 | 2005 | | | 20.000 | | | | | | | | | | | | | 20.000 |
| 61 | 33 | 1960 | | | | | | | | | | | | 4.046 | | | | 4.046 |
| 62 | 33 | 1975 | | | | | | | | | 72.000 | | | | | | | 72.000 |
| 63 | 34 | 1975 | | | | | | | | | 50.094 | | | | | | | 50.094 |
| 64 | 26 | 1965 | | | | | | | | | | | 10.234 | | | | | 10.234 |
| 65 | 26 | 1075 | | | | | | | | | 80.000 | | | | | | | 80.000 |
| 66 | 28 | 2010 | | 19.550 | | | | | | | | | | | | | | 19.550 |
| 67 | 29 | 2015 | 31.425 | | | | | | | | | | | | | | | 31.425 |
| 68 | 35 | 1975 | | | | | | | | | 55.000 | | | | | | | 55.000 |
| 69 | 36 | 1975 | | | | | | | | | 60.587 | | | | | | | 60.587 |
| 70 | 37 | 2010 | | 14.000 | | | | | | | | | | | | | | 14.000 |
| 71 | 49 | 2010 | | 18.000 | | | | | | | | | | | | | | 18.000 |
| 72 | 50 | 2015 | 20.000 | | | | | | | | | | | | | | | 20.000 |
| 73 | 39 | 1980 | | | | | | | | 40.000 | | | | | | | | 40.000 |
| 74 | 39 | 2010 | | 28.000 | | | | | | | | | | | | | | 28.000 |
| 75 | 40 | 1980 | | | | | | | | 45.000 | | | | | | | | 45.000 |
| 76 | 40 | 2005 | | | 24.000 | | | | | | | | | | | | | 24.000 |
| 77 | 48 | 2005 | | | 10.000 | | | | | | | | | | | | | 10.000 |
| 78 | 26 | 2005 | | | 9.000 | | | | | | | | | | | | | 9.000 |
| 79 | 37 | 1980 | | | | | | | | 6.000 | | | | | | | | 6.000 |
| 80 | 48 | 2015 | 13.575 | | | | | | | | | | | | | | | 13.575 |

| | | Total | **356.073** | **325.890** | ###### | **0.000** | **0.000** | **123.000** | **148.126** | **464.012** | **391.681** | **153.780** | **85.099** | **48.444** | **0.000** | **0.000** | **6.473** | **2322.518** |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 |
| **Thining year 2025-26** | | | | | | | | | | | | | | | | | | |
| 1 | 19 | 1971 | | | | | | | | | | 72.000 | | | | | | 72.000 |
| 2 | 19 | 1966 | | | | | | | | | | | 40.467 | | | | | 40.467 |
| 3 | 74 | 2011 | | 18.500 | | | | | | | | | | | | | | 18.500 |
| 4 | 14 | 1981 | | | | | | | | 103.386 | | | | | | | | 103.386 |
| 5 | 14 | 2006 | | | 24.000 | | | | | | | | | | | | | 24.000 |
| 6 | 8 | 2011 | | 26.000 | | | | | | | | | | | | | | 26.000 |
| 7 | 11 | 2011 | | 36.000 | | | | | | | | | | | | | | 36.000 |
| 8 | 12 | 1981 | | | | | | | | 5.000 | | | | | | | | 5.000 |
| 9 | 12 | 2011 | | 11.300 | | | | | | | | | | | | | | 11.300 |
| 10 | 13 | 1981 | | | | | | | | 179.052 | | | | | | | | 179.052 |
| 11 | 20 | 1971 | | | | | | | | | | 162.200 | | | | | | 162.200 |
| 12 | 21 | 1971 | | | | | | | | | | 73.000 | | | | | | 73.000 |
| 13 | 65 | 2011 | | 30.000 | | | | | | | | | | | | | | 30.000 |
| 14 | 132 | 1981 | | | | | | | | 85.678 | | | | | | | | 85.678 |
| 15 | 68 | 2006 | | | 29.000 | | | | | | | | | | | | | 29.000 |
| 16 | 70 | 1961 | | | | | | | | | | | | 16.19 | | | | 16.187 |
| 17 | 70 | 1986 | | | | | | | 19.677 | | | | | | | | | 19.677 |
| 18 | 130 | 1986 | | | | | | | 18.708 | | | | | | | | | 18.708 |
| 19 | 130 | 2006 | | | 19.360 | | | | | | | | | | | | | 19.360 |
| 20 | 131 | 1981 | | | | | | | | 24.000 | | | | | | | | 24.000 |
| 21 | 131 | 1966 | | | | | | | | | | | 20.234 | | | | | 20.234 |
| 22 | 141 | 1986 | | | | | | | 31.283 | | | | | | | | | 31.283 |
| 23 | 146 | 2006 | | | 96.000 | | | | | | | | | | | | | 96.000 |
| 24 | 149 | 2011 | | 72.750 | | | | | | | | | | | | | | 72.750 |
| 25 | 72 | 1961 | | | | | | | | | | | | 6.070 | | | | 6.070 |
| 26 | 72 | 1971 | | | | | | | | | | 8.094 | | | | | | 8.094 |
| 27 | 72 | 1976 | | | | | | | | | 6.000 | | | | | | | 6.000 |

| | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 28 | 2 | 1981 | | | | | | | | 88.000 | | | | | | | | 88.000 |
| 29 | 75 | 1986 | | | | | | | 25.623 | | | | | | | | | 25.623 |
| 30 | 79 | 1961 | | | | | | | | | | | | 8.094 | | | | 8.094 |
| 31 | 81 | 1986 | | | | | | | 52.800 | | | | | | | | | 52.800 |
| 32 | 81 | 2006 | | | 9.500 | | | | | | | | | | | | | 9.500 |
| 33 | 84 | 2011 | | 10.000 | | | | | | | | | | | | | | 10.000 |
| 34 | 103 | 1966 | | | | | | | | | | | 30.000 | | | | | 30.000 |
| 35 | 104 | 1981 | | | | | | | | 20.000 | | | | | | | | 20.000 |
| 36 | 105 | 2011 | | 25.400 | | | | | | | | | | | | | | 25.400 |
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 |
| 37 | 115 | 1986 | | | | | | | 38.200 | | | | | | | | | 38.200 |
| 38 | 123 | 1986 | | | | | | | 32.000 | | | | | | | | | 32.000 |
| 39 | 123 | 2011 | | 15.000 | | | | | | | | | | | | | | 15.000 |
| 40 | 41 | 1981 | | | | | | | | 7.000 | | | | | | | | 7.000 |
| 41 | 42 | 2011 | | 46.330 | | | | | | | | | | | | | | 46.330 |
| 42 | 43 | 1981 | | | | | | | | 50.500 | | | | | | | | 50.500 |
| 43 | 44 | 1981 | | | | | | | | 10.174 | | | | | | | | 10.174 |
| 44 | 46 | 2011 | | 33.215 | | | | | | | | | | | | | | 33.215 |
| 45 | 133 | 1966 | | | | | | | | | | | 40.469 | | | | | 40.469 |
| 46 | 133 | 1981 | | | | | | | | 10.000 | | | | | | | | 10.000 |
| 47 | 133 | 2011 | | 20.000 | | | | | | | | | | | | | | 20.000 |
| 48 | 62 | 2011 | | 20.500 | | | | | | | | | | | | | | 20.500 |
| 49 | 134 | 1986 | | | | | | | 53.500 | | | | | | | | | 53.500 |
| 50 | 60 | 2011 | | 31.500 | | | | | | | | | | | | | | 31.500 |
| 51 | 51 | 2011 | | 25.650 | | | | | | | | | | | | | | 25.650 |
| 52 | 22 | 1976 | | | | | | | | | 117.000 | | | | | | | 117.000 |
| 53 | 31 | 2006 | | | 18.800 | | | | | | | | | | | | | 18.800 |
| 54 | 33 | 1961 | | | | | | | | | | | | 4.046 | | | | 4.046 |
| 55 | 33 | 1976 | | | | | | | | | 30.000 | | | | | | | 30.000 |
| 56 | 34 | 1976 | | | | | | | | | 20.000 | | | | | | | 20.000 |
| 57 | 56 | 1976 | | | | | | | | | 7.000 | | | | | | | 7.000 |

| | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 58 | 56 | 2011 | | 21.350 | | | | | | | | | | | | | | 21.350 |
| 59 | 28 | 2011 | | 27.400 | | | | | | | | | | | | | | 27.400 |
| 60 | 30 | 2006 | | | 19.200 | | | | | | | | | | | | | 19.200 |
| 61 | 30 | 2011 | | 10.000 | | | | | | | | | | | | | | 10.000 |
| 62 | 36 | 1976 | | | | | | | | | 50.000 | | | | | | | 50.000 |
| 63 | 49 | 1976 | | | | | | | | | 45.000 | | | | | | | 45.000 |
| 64 | 49 | 2011 | | 17.375 | | | | | | | | | | | | | | 17.375 |
| 65 | 39 | 1981 | | | | | | | | 20.000 | | | | | | | | 20.000 |
| 66 | 26 | 1976 | | | | | | | | | 4.250 | | | | | | | 4.250 |
| 67 | 24 | 1976 | | | | | | | | | 2.950 | | | | | | | 2.950 |
| 68 | 25 | 1976 | | | | | | | | | 10.000 | | | | | | | 10.000 |
| 69 | 40 | 1981 | | | | | | | | 12.000 | | | | | | | | 12.000 |
| 70 | 48 | 2006 | | | 50.000 | | | | | | | | | | | | | 50.000 |
| 71 | 39 | 2011 | | 10.000 | | | | | | | | | | | | | | 10.000 |
| 72 | 3 | 2016 | 20.000 | | | | | | | | | | | | | | | 20.000 |
| 73 | 76 | 2016 | 20.000 | | | | | | | | | | | | | | | 20.000 |
| 74 | 103 | 2016 | 20.000 | | | | | | | | | | | | | | | 20.000 |
| 75 | 106 | 2016 | 15.000 | | | | | | | | | | | | | | | 15.000 |
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 |
| 76 | 14 | 2016 | 10.000 | | | | | | | | | | | | | | | 10.000 |
| 77 | 9 | 2016 | 10.000 | | | | | | | | | | | | | | | 10.000 |
| 78 | 69 | 2016 | 50.000 | | | | | | | | | | | | | | | 50.000 |
| 79 | 63 | 2016 | 15.000 | | | | | | | | | | | | | | | 15.000 |
| 80 | 131 | 2016 | 25.000 | | | | | | | | | | | | | | | 25.000 |
| 81 | 132 | 2016 | 25.000 | | | | | | | | | | | | | | | 25.000 |
| 82 | 29 | 2016 | 25.000 | | | | | | | | | | | | | | | 25.000 |
| 83 | 50 | 2016 | 30.000 | | | | | | | | | | | | | | | 30.000 |
| 84 | 48 | 2016 | 20.000 | | | | | | | | | | | | | | | 20.000 |
| 85 | 43 | 2016 | 10.000 | | | | | | | | | | | | | | | 10.000 |
| 86 | 47 | 2016 | 10.000 | | | | | | | | | | | | | | | 10.000 |
| | | **Total** | **305.000** | **508.270** | ###### | **0.000** | **0.000** | **0.000** | **271.791** | **614.790** | **292.200** | **315.294** | ##### | **34.397** | **0.000** | **0.000** | **0.000** | **2738.772** |

## Annexure V

Average number of Plants per ha. in Teak Plantation working circle

| SN | Species | Girth Class wise No. of Trees per ha | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 15-30 | 31-45 | 46-60 | 61-75 | 76-90 | 91-105 | 106-120 | 121-135 | 136-150 | 151 over | Total |
| 1 | Teak | 134 | 92 | 51 | 21 | 5 | 3 | 2 | 2 | 2 | 1 | **313** |
| 2 | Ain | 6 | 3 | 2 | 1 | 0 | 1 | 0 | 1 | 1 | 0 | **15** |
| 3 | Bija | 2 | 3 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | **6** |
| 4 | Haldoo | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | **1** |
| 5 | Kalam | 3 | 1 | 2 | 0 | 1 | 1 | 0 | 2 | 0 | 0 | **10** |
| 6 | Shisam | 4 | 3 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | **8** |
| 7 | Khair | 5 | 6 | 2 | 2 | 3 | 0 | 0 | 0 | 0 | 0 | **18** |
| 8 | Dhawada | 6 | 1 | 2 | 2 | 0 | 0 | 1 | 1 | 0 | 0 | **13** |
| 9 | Others | 109 | 33 | 9 | 7 | 3 | 2 | 4 | 3 | 0 | 0 | **170** |
| | **TOTAL** | **270** | **142** | **69** | **34** | **12** | **7** | **7** | **9** | **3** | **1** | **554** |

## Annexure VI

Details of Plantations in various Working Circle in FDCM

| Sr.no | Type of plantation | Area in Ha. |
|---|---|---|
| 1 | Plantation raised by FD during 1938 to 2012 | 1471.603 |
| 2 | Teak plantations raised by FDB & FDCM Ltd @2mx2m during 1970 to 1987 | 9275.217 |
| 3 | Plantations raised under various models of Maharashtra Forestry Project 1993 to 1998 | 3655.000 |
| 4 | Plantations raised under Massive Afforestation Programme 1988 to 1994 | 5881.000 |
| 5 | Mandatory (OWR) Plantations raised during 2002-03to 2015-16 | 3402.457 |
| 6 | Teak plantations raised 2020 Rains | 260.020 |
| 7 | Plantations of Teak under Reboisement W.C 2015,2016,2018. | 787.992 |
| 8 | Mixed plantation raised in2015,2016,2018 rains. | 161.000 |
| 9 | Medicinal plantations raised 2015 & 2018 | 50.000 |
| 10 | Balcova bamboo plantation raised in2015 | 7.500 |
| 11 | Tree plantation under 50 Cr drive | 331.250 |
| 12 | Teak and Non-Teak Kothari range of Central Chanda Forest Division from 1986 to 2012 | 290.00 |
| | **Total** | **25773.239** |

# Annexure VII

# Abstract of Thinning Data of Worked Plantations

## Teak Trees Harvested During Thinning in Central Chanda Division of FDCM in 2018-2019

| No. of Sites | Comptt. Nos. | Area (ha.) | Plantation Year | Thinning No. | Girth Class in cms. | | | | | | | | No. of Trees per ha. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | Under 30 | >30 - 45 | >45 – 60 | >60 - 75 | >75 - 90 | >90 - 105 | >105 | Total | |
| 1 | 132 | 14.164 | 1971 | 9th | 13 | 26 | 20 | 16 | 6 | 3 | 0 | 84 | 5.930 |
| 1 | 72 | 6.000 | 1974 | 8th | 133 | 48 | 91 | 52 | 16 | 6 | 1 | 347 | 57.833 |
| 4 | 72, 57, 103, 104 | 130.00 | 1974 | 7th | 2062 | 2573 | 864 | 379 | 59 | 17 | 7 | 5961 | 45.853 |
| 1 | 55 | 4.064 | 1975 | 7th | 41 | 66 | 6 | 1 | - | - | - | 114 | 28.051 |
| 4 | 61, 30, 104 | 61.000 | 1976 | 7th & 8th | 607 | 540 | 454 | 217 | 100 | 27 | 1 | 1946 | 31.901 |
| 1 | 62 | 15.000 | 1978 | 7th | 9 | 132 | 166 | 51 | 6 | 1 | - | 365 | 24.333 |
| 2 | 74, 80 | 109.068 | 1984 | 6th | 993 | 823 | 329 | 40 | 4 | - | - | 2189 | 20.070 |
| 3 | 9, 10, 63 | 172.670 | 1981 | 7th | 2941 | 5044 | 1750 | 1014 | 273 | 83 | 11 | 11116 | 64.377 |
| 1 | 72 | 6.070 | 1969 | 9th | 49 | 29 | 73 | 47 | 21 | 4 | - | 223 | 36.738 |
| 18 | - | 518.036 | - | - | 6848 | 9281 | 3753 | 1817 | 485 | 141 | 20 | 22345 | 43.134 |
| Avg. trees harvested per ha. in each girth class | | | | | 13.219 | 17.916 | 7.245 | 3.507 | 0.936 | 0.272 | 0.039 | 43.134 | say 43 per ha. |

## 2019-20

| No. of Sites | Comptt. Nos. | Area (ha.) | Plantation Year | Thinning No. | Girth Class in cms. | | | | | | | | No. of Trees per ha. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | Under 30 | >30 - 45 | >45 – 60 | >60 - 75 | >75 - 90 | >90 - 105 | >105 | Total | |
| 4 | 72, 19, 20, 21 | 169.294 | 1971 | 9th | 2360 | 2426 | 3344 | 2784 | 1369 | 398 | 84 | 12765 | 75.401 |
| 6 | 72, 20, 24, 25, 36, 56 | 192.950 | 1976 | 8th | 451 | 443 | 1170 | 907 | 406 | 179 | 91 | 3647 | 18.901 |
| 12 | 14, 132, 41, 44, 133, 43, 131, 13, 2, 104, 39, 40 | 670.290 | 1981 | 7th | 4694 | 5680 | 6239 | 4683 | 2327 | 1208 | 374 | 25205 | 37.603 |
| 7 | 141,184, 75, 70, 75, 115, 123 | 225.906 | 1986 | 6th | 4175 | 3852 | 2648 | 628 | 106 | 13 | 3 | 11425 | 50.574 |
| 29 | - | 1258.440 | - | - | 11680 | 12401 | 13401 | 9002 | 4208 | 1798 | 552 | 53042 | 42.149 |
| Avg. trees harvested per ha. in each girth class | | | | | 9.281 | 9.854 | 10.648 | 7.153 | 3.343 | 1.428 | 0.438 | 42.149 | say 42 per ha. |

# Annexure VIII

**Details of Medicinal plantations under Ex-situ Conservation**

| Sr. No. | Range | Year of Plantation | Compt. No. | Area In Ha. | Source of Fund |
|---|---|---|---|---|---|
| 1 | Zaran | 2011 | 106 | 15.00 | 13th Finance |
| 2 | "_" | 2013 | 123 | 7.50 | "_" |
| 3 | "_" | 2015 | 111 | 25.00 | National Medicinal Plant Board |
| 4 | Kanhargaon | 2015 | 21 | 25.00 | "_" |
| | **TOTAL** | | | **72.50** | |

**The details of in-situ conservation area**

| Sr. No | Range | Year | Compt. No. | Area in Ha. | Source of Fund |
|---|---|---|---|---|---|
| 1 | Zaran | 2011 | 106 | 150.00 ha. | 13th Finance |
| 2 | "_" | 2013 | 123 | 75.00 ha. | "_" |
| 3 | "_" | 2015 | 111 | 150 | National Medicinal Plant Board |
| 4 | "_" | 2015 | 117 | 50 | "_" |
| | **Total** | | | **425** | |

# Annexure IX

**List of proposed Water bodies**

| Sr.No | Range | Comptt.No | Proposed Water Body |
|---|---|---|---|
| **1** | Zaran | 1,2,76,81,83,114, 122,123 | 8 |
| **2** | Kanhargaon | 16,19,21,67,68, 70,127 | 7 |
| **3** | Dhaba | 32,38,41,42,46,47,50, 51, 53, 134 | 10 |
| | Total | | **25** |

# Annexure X
## List of Wildlife Observation Tower (20 feet Height)

| Sr.No. | Comptt.No/Spot | No | Remarks |
|---|---|---|---|
| 1 | 102/Dewai Talav | 1 | Facility of Toilet/ Bathroom shall be made |
| 2 | 53/Dhaba Talav | 1 | |
| 3 | 38/Nala | 1 | |
| 4 | 32/Camp IV | 1 | |
| 5 | 3/Chichbodi Nala | 1 | |
| 6 | 22/Forest Pond | 1 | |
| 7 | 41/Jaitul Doh | 1 | |
| 8 | 55/Bhivkund | 1 | |
| 9 | 132/Ambe Nala | 1 | |
| | Total | 9 | |

# Annexure XI
## List of Roads

| Sr.No. | Range | Details of Road | Distance in Km. |
|---|---|---|---|
| 1 | Zaran | Comptt.No.106 to 108<br>Comptt.No.82 to 103<br>Comptt.No.78 to 104Dewai | 8.0<br>9.50<br>10.0 |
| 2 | Kanhargaon | Comptt.No.21 Borewel to Chiwanda<br>Kanhargaon to Comptt.No.21<br>Kanhargaon to Chiwanda<br>Comptt.No.20 to Chiwanda Road | 9.72<br>12.0<br>8.0<br>5.10 |
| 3 | Dhaba | Gujari village to Comptt.No 47-52<br>Camp IV to Comptt. No.54<br>Chiwanda to Comptt. No.62<br>Tohogaon to Camp.No.III<br>Wamanplii to Tower<br>Tower to Camp IV | 9.0<br>7.0<br>7.0<br>10.0<br>10.0<br>4.0 |
| | | **Total** | **109.32** |

# Annexure XII

## Details of Fire Lines

| Name of Range | Comptt. No | Width of Fire line | Length of fire line (In Km.) |
|---|---|---|---|
| Zaran | 1 to 3,79 to 86 to112, 114 to121 | 6 Mtr.<br>3 Mtr. | 29.519<br>111.430 |
| Kanhargaon (Old Kanhargaon 1+ Kanhargaon 2) | 16 to 23, 25, 58,59,60, 62 to 75,122 to 130, 140,141,142 A,142 B | 6 Mtr.<br>3 Mtr. | 54.98<br>74.218 |
| Dhaba (Old Dhaba +Tohogaon) | 30 to 33, 35 to 44, 46 to 57,61, 131to 134,139 | 6 Mtr.<br>3 Mtr. | 101.932<br>68.239 |
| **Total** | | **6 Mtr.**<br>**3 Mtr.** | **186.431**<br>**253.887** |

# Annexure XIII

## List of proposed Protection Camps

| Sr.No. | Compartment No. |
|---|---|
| 1 | 38 |
| 2 | 50 |
| 3 | 58 |
| 4 | 105 |
| 5 | 70 |

# Annexure XIV

## List of Proposed Check-Post

| Sr.No | Comptt.No | Location |
|---|---|---|
| 1. | 1 | Dewai village Approch Road on Ballarshah-Alapalli Highway |
| 2 | 122 | Aksapur- Bhatari Road on Ballarshah-Alapalli Highway |
| 3 | 115 | Aksapur to Dewai Joint |
| 4 | 41 | Wamanpalli |
| 5 | 31 | Entry Gate/Tohogaon |
| 6 | 53 | Entry Gate /Dhaba |
| 7 | 44 | Exit Gate/Gujari village Joint |

**Annexure XV**
**Details of Field Staff Quarters**

| Sr. No | Range Officers | Quarter Status | Round Officers | Quarter Status | Beat Guards | Quqrter Status |
|---|---|---|---|---|---|---|
| 1 | Kanhargaon | Available | Zaran1 | Available | Zaran1 | Available |
| 2 | | | Aksapur at Zaran | Available | Zaran 2 | Available |
| 3 | | | Kothari | Not Available | Zaran3 | Available |
| 4 | | | Dewai | Not Available | Aksapur 1 | Not Available |
| 5 | | | | Not Available | Aksapur 2 | Not Available |
| 6. | | | | Not Available | Bhatari | Not Available |
| 7. | | | Kothari | Not Available | Kothari 1 | Not Available |
| 8. | | | | Not Available | Kothari 2 | Not Available |
| 9. | | | Dewai | Not Available | Dewai 1 | Not Available |
| 10. | | | | Not Available | Dewai 2 | Not Available |
| 11 | Tohogaon | Available | Kanhargaon 1 | Available | Kanhargaon 1 | Not Available |
| 12 | | | | Not Available | Karanji 1 | Not Available |
| 13 | | | Kanhargaon 2 | Available | Kanhargaon 2 | Not Available |
| 14 | | | | Not Available | Pachgaon | Not Available |
| 15 | | | Tohogaon Camp IV | Not Available | Tohogaon Camp IV | Not Available |
| 16 | | | | Not Available | Tohogaon Camp IV(a) | Not Available |
| 17 | | | | Not Available | Arvi | Not Available |
| 18 | | | Lathi | Not Available | Wejgaon | Not Available |
| 19 | | | | Not Available | Sarandi | Not Available |
| 20 | Dhaba | Not Available | Watrana | Not Available | Kanhargaon-3 (Chiwanda) | Not Available |
| 21 | | | | Not Available | Chiwanda 1 | Not Available |
| 22 | | | Chiwanda (Dhaba) | Not Available | Chiwanda 2 (Chiwanda) | Not Available |
| 23 | | | | Not Available | Camp IV(b) (Dhaba) | Not Available |
| 24 | | | Karanji | Not Available | Karanji 2 (Karanji) | Not Available |
| 25 | | | | Not Available | Karanji 3 (Karanji) | Not Available |
| 26 | | | Dhaba (Dhaba) | Not Available | Dhaba (Dhaba) | Not Available |
| 27 | | | | Not Available | Kuda (Kuda) | Not Available |
| 28 | | | Wamanpalli (Lathi) | Not Available | Wamanpalli (S. | Not Available |

| | | | | | | |
|---|---|---|---|---|---|---|
| | | | | | Deshpande) | |
| 29 | | | | Not Available | Gujari 1 (Gujari) | Not Available |
| 30 | | | | Not Available | Gujari 2 (Gujari) | Not Available |

# Annexure XVI

## Control Forms

## Forest Department: Maharashtra

## State Control Form No. 1

## Control Form for I/5th Boundary Demarcation

| **Prescribed operation vide para :** | | | | |
|---|---|---|---|---|
| **Appendix -** | | | **Range-** | |
| **Year** | **Location of boundary (Name of beat)** | **Target for the year (Length)Km.** | **Short/ Excess + in Red - in Blue** | **Total Cairns repaired.** |
| **1** | 2 | **3** | 4 | 5 |
| | | | | |
| | | | | |
| | | | | |

# FOREST DEPARTMENT MAHARASTHRA STATE

## Control Form Number 2

## Control Form for Fire Protection

| Prescribed Operation Vide Para | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Appendix | | | | Range | | | Accidental fires | | | Number of Fire watchers | | | Total Expenditure | Remark |
| Year | Range | Length of fire lines to be cut | Length of fire lines cut & burnt during the year | Expenditure Incurred | Short fall | Reasons for short fall | Area burnt due to accidental fires | Nature of Damage | Expenditure Incurred | Prescribed | Actually appointed | Expenditure incurred | Remarks | Remarks |
| | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | |

# FOREST DEPARTMENT MAHARASTHRA STATE

## Control Form Number 3

## Control Form for Water Sources and their Distrubution

| Prescribed Operation | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Appendix | | | Availability of water | | | | Presence of saltlick | Presence of wallow groud |
| Sr No | C/No | Water Source | Jully-Sept | July-Dec | July-March | July-June | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |

Each compartment will be surveyed 4 times in a year to assess seasonal availablitiy of water. This information will be used to map water sources. This form will also give information on salt licks and wallow ground

## Forest Department: Maharashtra State
## Control Form No. 4
## Control Form for Road Side Animal Monitoring

| Prescribed operation | | | | | |
|---|---|---|---|---|---|
| Appendix - | | | | | |
| Km. Segment | Species | Animal Number | Side Left/Right | Sex | Perpendicular sighting distance (Mtr.) |
| **1** | 2 | 3 | **4** | 5 | 6 |
| | | | | | |
| | | | | | |

Time of start & time of End is noted. This form will help to find animal abudance, density and sex ratio.

## Forest Department : Maharashtra State
## Control Form No. 5
## Control Form for Habitat.Improvement

| Prescribed operation | | | | |
|---|---|---|---|---|
| Appendix - | | | | |
| Year | Area tackled | Expenditure incurred | Observation area used by wildlife | Remarks |
| 1 | **2** | 3 | 4 | 5 |
| | | | | |
| | | | | |
| | | | | |

# Forest Department: Maharashtra State
## Control Form No. 6
## Control Form for Animal Disease

| Prescribed operation | | | | | | |
|---|---|---|---|---|---|---|
| Appendix - | | | | | | |
| S.No. | Name of Animal Species | Symptoms of Disease | Disease Diagnosis | Cause of Disease | Remedial measures taken | Mortality |
| 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| | | | | | | |
| | | | | | | |
| | | | | | | |

# Forest Department: Maharashtra State
## Control Form No. 7
## Control Form for Soil and Moisture Conservation

| Prescribed operation | | | |
|---|---|---|---|
| Appendix - | | | |
| Year | Name of Nala Tackled | Expenditure incurred | Remarks. |
| 1 | 2 | 3 | 4 |
| | | | |
| | | | |
| | | | |

# Forest Department: Maharashtra State

## Control Form No. 8

## Control Form for Illicit Cutting.

| Prescribed operation | | | | | | |
|---|---|---|---|---|---|---|
| Appendix | | | | | | |
| S.No. | C/No. | Illicit cutting Timber/ Bamboo | Species cut. | Implements used | Date | Case No. and punishment |
| 1 | 2 | 3 | 4 | **5** | **6** | **7** |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |

‘

# Forest Department: Maharashtra State

## Control Form No. 9

## Control Form for Crop Damage.

| Prescribed operation | | | | | |
|---|---|---|---|---|---|
| | | | | | |
| S.No. | Name of Village | Type of Crop | Extent of damage(ha) | Causes of damage | Remarks. |
| 1 | 2 | 3 | 4 | 5 | 6 |
| | | | | | |
| | | | | | |

# Forest Department: Maharashtra State

## Control Form No. 10

## Control Form for Eco-development Works.

| Prescribed operation | | | | | |
|---|---|---|---|---|---|
| | | | | | |
| S.No. | Name of Village | Year | Type of works | Expenditure incurred | Remarks. |
| 1 | 2 | 3 | 4 | 5 | 6 |
| | | | | | |
| | | | | | |

# Annexure XVII

## The Proforma of Wildlife Compartment History Form

| | | | |
|---|---|---|---|
| | Areas in Hectares : | Date : | |
| | 1. | Location : | |
| | 2. | Boundaries : | |
| | | a) North : | |
| | | b) South | |
| | | c) East : | |
| | | d) West : | |
| | 3. | A status of Boundaries : | |
| | 4. | Permanent features : | |
| | 5. | Topographical features :<br>(Give altitudinal variation, aspect and slope) | |
| | | Geology and Rock , : | |
| . | 6 | Soil :<br>(Give type, texture, clolur, depth, humus and drainage) | |
| | 7. | Vegetation (Champion and Seth Category) | |
| | | Top Canopy, Middle Canopy, Shrub layer | Grasses |
| | | c) Average Height | |

Name of the Protected Area : Range:

Round :

Name of the Beat: Compartment number :

8. a) Regeneration of key species :

Name of species Natural Regeneration Artificial Regeneration

Seeding Coppice

b) State whether all age classes ore represented :

c) State whether regeneration is adequate to restock the area :

9. Plantations : Yes /No

10. Water availability :

| | | | |
|---|---|---|---|
| | a) Sources : None | Artificial | Natural |
| | b) Seasonal availability : | : July-Sept. / July-Dee. / July-March / July-June | |

| | | | |
|---|---|---|---|
| 11. | Salt Licks : None | Artificial | Natural |
| 12. | Weeds : | Yes/ No. | |
| | | Species | Low/Medium/Fligh |
| | | None | Low/Medium/High |
| 13. | Illicit Cutting : | | |
| | | None | Low/Medium/High |
| 14. | Non Timber Forest Produce Collection : | | |
| | Name of the produce, | Time of Collection | Extent of Collection |

15. Fire incidence : Yes / No

Time Period Low/Midium/High

16. Soil Erosion : (Give Type and Extent)

17. Wildlife Use :

a) Name of the species :

b) Relative abundance of each species

Specie Rare/Occasional/Common/ Abundant

c) Presence of indirect evidences :

(Pug-marks, Dung, Pellets, Antler, rubbing, Wallows)

d) Presence of species-specific habitat:

(Nests, Dense, Caves, Cliffs, Talus)

18.. Human Settlements : Yes /No

Name Number of dwellings

<10 10-25 25-50 50

Name Number of cattle units

19. Any other information of special interest:

Range Forest Officer

## Annexure - XVIII

### Part (A)

## Budget for Management Plan Works in Kanhargaon WLS

## Physical and Financial plan for the period 2022-23 to 2026-27

(1) Financial figures are in Rs. In Lacs.

(2) Daily wage rate taken as Rs. 403 per day (i.e. 0.00403 lacs)

(3) Rate mentioned as per rates applicable currently and will be required to be revised every year at the then prevailing rates in the forest dept.

(4) No escalation of cost is provided over the plan period.

# Budget for 1st Year FY 2022-23

| Sr. Nos. | Work Particulars | Work Unit | Rate (Rs. In Lacs) | FY - 2022-23 (1) | |
|---|---|---|---|---|---|
| | | | | Phy. | Fin. |
| **1** | **Demarcation of Boundaries** | | | | |
| 1 | Demarcation of outer boundaries 3 ranges, 10 rounds and 28 beats boundaries in Notified WLS with Type - I Pillars including fixing. Ave. length 9 km /beat @10 pillars /Km.@Rs.4860 /pillar =Total Rs. 4.40 Lacs per beat | Beat Nos | 4.40 | 5 | 22.00 |
| 2 | 1/5 th Boundary Demarcation Programme with Type - I Pillars including fixing at 50 M. apart i.e. 20 Nos/per Km. cost of Class I pillar Rs. 9600 each = Total Rs.1.92 Lacs per Km. | Kms | 1.920 | 24.220 | 46.50 |

| | | | | | |
|---|---|---|---|---|---|
| | Total Length = 129.925 km | | | | |
| | **Total** | | | | **68.50** |
| **2** | **Repairs and Maintenance of Roads and Culverts, bridges** | | | | |
| 1 | Repairs and Maintenance of Roads - 9 Roads -111.7 kms | Kms | 0.99 | 111.7 | 110.41 |
| 2 | Repairs and Maintenance of Culverts | LS | 10.00 | 1 | 10.00 |
| 3 | Repairs and Maintenance of bridges | LS | 10.00 | 1.00 | 10.00 |
| | **Total** | | | | **130.41** |
| 3 | **Repairs and Maintenance of Administrative Buildings** | | | | |
| 1 | Range Offices -1 Nos | Nos | 3.00 | 1 | 3.00 |
| 2 | Forest Rest House @ Kanhargaon | Nos. | 3.00 | 1 | 3.00 |
| | **Total** | | | | **6.00** |
| **4** | **Repairs and Maintenance of Residential & other Buildings** | | | | |
| 1 | Type-III - 2 Nos. (RFO Qtr.) | Nos. | 2.50 | 1 | 2.50 |
| 2 | Type-II -2 No.(Forester Qtr.) | Nos. | 2.00 | 2 | 4.00 |
| 3 | Type-I -9 Nos. (FG Qtr.) | Nos. | 1.00 | 3 | 3.00 |
| | **Total** | | | | **9.50** |

| | | | | | |
|---|---|---|---|---|---|
| 5 | **Construction of New Administrative and other Structures** | | | | |
| 1 | Division office -1 No | Nos | 96.00 | 1 | 96.00 |
| 2 | Range Office - 2 Nos. | Nos. | 48.00 | 1 | 48.00 |
| 3 | Library Unit - 3 Nos | Nos. | 48.00 | 1 | 48.00 |
| 4 | Interpretation Centre -2 Nos | Nos. | 48.00 | | 0.00 |
| 5 | Stores and Godowns-5 Nos | Nos. | 5.00 | 3 | 15.00 |
| 6 | Other bldgs- Vehicle Garage-10 Nos. | Nos. | 4.00 | 4 | 16.00 |
| 7 | Fire Watch Towers- 60 M. high - 4 Nos | Nos. | 50.00 | 1 | 50.00 |
| 8 | WL observation Towers-9 Nos | Nos. | 2.00 | 3 | 6.00 |
| | **Total** | | | | **279.00** |
| **6** | **Construction of New Residential Buildings** | | | | |
| 1 | Type - V (DCF/DFO) -1 No. | Nos. | 50.00 | 1 | 50.00 |
| 2 | Type - IV (ACF) - 2 Nos. | Nos. | 40.00 | 2 | 80.00 |
| 3 | Type-III - 3 Nos (RFO Qtr.) | Nos. | 33.00 | 2 | 66.00 |
| 4 | Type-II -12 (Foresters Qtr.) | Nos. | 29.00 | 6 | 174.00 |
| 5 | Type-I - 33 Nos. (FG Qtr.) | Nos | 23.00 | 10 | 230.00 |
| | **Total** | | | | **600.00** |

| | | | | | |
|---|---|---|---|---|---|
| | **Habitat Development** | | | | |
| **7** | **Fodder and grass planting in blanks (Model-9 under MREGS)** | | | | |
| 1 | PPO/PYO | Ha. | 0.619 | 150 | 92.92 |
| 2 | FYO | Ha. | 0.247 | | |

| | | | | | |
|---|---|---|---|---|---|
| 3 | SYO | Ha. | 0.195 | | |
| 4 | TYO | Ha. | 0.168 | | |
| 5 | IV YO | Ha. | 0.161 | | |
| 6 | V YO | Ha. | 0.161 | | |
| | **Total** | | | | **92.92** |
| **8** | **planting of evergreen and fruit tress along water courses and water holes.** | | | | |
| 1 | PPO/PYO | LS - 1 job | 30.000 | 1 | 30.00 |
| 2 | FYO | LS - 1 job | 20.000 | 1 | 20.00 |
| 3 | SYO | LS - 1 job | 15.000 | 1 | 15.00 |
| 4 | TYO | LS - 1 job | 10.000 | 1 | 10.00 |
| 5 | IV YO | LS - 1 job | 5.000 | 1 | 5.00 |
| 6 | V YO | LS - 1 job | 5.000 | 1 | 5.00 |
| | **Total** | | | | **85.00** |
| **2** | **Grand Total (7+8)** | | | | **177.92** |
| **9** | **Wildlife Protection - Infrastructure , vehicles, equipments etc.** | | | | |
| 1 | Construction of Protection Huts with Solar Powered Bore well - 10 Nos | Nos. | 8.00 | 5 | 40.00 |
| 2 | Purchase of New Jeeps - 8 Nos.4WD jeeps | Nos. | 10.00 | 8 | 80.00 |
| 3 | Purchase of New Mini bus -2 Nos. (15 seater) | Nos | 20.00 | 1 | 20.00 |
| 4 | Construction of Check posts 9 Nos. | Nos. | 2.800 | 9 | 25.20 |
| 5 | Patrolling Path creation | Kms | 0.200 | 50 | 10.00 |

| | | | | | |
|---|---|---|---|---|---|
| 6 | Setting up of wireless communication in 10 Protection hut, 8 check posts and 3 range HQs and 1 Division office = Total 22 stations | Nos. | 3.000 | 8 | 24.00 |
| 7 | Purchase of walkie-Talkie handsets for Beat guards - 28 Nos.+2 Reserve sets | Nos. | 0.200 | 14 | 2.80 |
| 8 | Purchase of walkie-Talkie wireless sets for jeeps - 8 Nos. | Nos. | 0.500 | 8 | 4.00 |
| | **Total-** | | | | **206.00** |
| **10** | **Quick Response Team Accessories** | | | | |
| 1 | Purchase of Net Gun, Tranq. Guns, trap cages, treatment cages, Fibre sticks, | Lumpsum | 5.000 | 1 | 5.00 |
| 2 | Purchase of Equip. Sets and accessories Teledarts, blowpipes, safety gears, drugs, ropes, ladder, Snake tongs & Hooks etc. | Lumpsum | 2.000 | 1 | 2.00 |
| | **Total-** | | | | **7.00** |
| | **Total-( 9+10)** | | | | **213.00** |

| | | | | | |
|---|---|---|---|---|---|
| **11** | **Fire Protection Works Fire lines** | | | | |
| | **Recurring Costs** | | | | 0.00 |
| **A** | **Cutting and burning of fire lines** | | | | |
| 1 | Cutting and burning of fire lines - 3 M wide Length-202 Km. @4.5 Mdays @Rs. 403 per day = 1814/Km | Kms | 0.018 | 202.00 | 3.66 |

| | | | | | |
|---|---|---|---|---|---|
| 2 | Cutting and burning of fire lines - 6 M wide Length-177 Km. = Rs. 2380?Km | Kms | 0.024 | 177.00 | 4.21 |
| | **Cutting and burning of fire lines-Total A** | | | | **7.88** |
| **B** | **General Fire Protection** | | | | |
| 1 | Hotshot Crew / Fire fighting squad -One squad of 6 persons per round for 10 rounds for period of 4 months with 26 working days per month. Wages @ Rs. 403 per day Total Mandays = 6240 | Mandays | 0.00403 | 6240 | 25.15 |
| 2 | Fire watchers for Beats - 3 Watcher/Beat for 28 Beats, with 26 working days p.m for 4 months. Total - 8736 MD | Mandays | 0.00403 | 8736 | 35.21 |
| 3 | Watchers for Watchtower -3 Fire watchers per tower for -9 Watch towers, 26 days per month for 4 month. Total Mandays- 2808 | Mandays | 0.00403 | 2808 | 11.32 |
| 4 | Blower maintenance -@Rs.1100 per Blower for 30 Blowers (1 Blower per beat) | Blowers. | 0.0110 | 30 | 0.33 |
| | **General Fire Protection Cost -B Total** | | | | **72.00** |
| | **Total Recurring Cost -A+B** | | | | **79.88** |
| | **Non recurring expenditure** | | | | 0.00 |
| **C** | **Procurement of Fire fighting Equipments** | | | | |
| 1 | Purchase of New Blowers 1 per beat - Total 30 nos. | Nos | 0.50 | 30 | 15.00 |

| | | | | | |
|---|---|---|---|---|---|
| 2 | Purchase of Drone Camera-- 1 per Range for 3 Ranges | Nos. | 4.00 | 1 | 4.00 |
| 3 | Establishing New Fire Watch Towers @ 4sites 45 M height. | Nos. | 45.00 | 1 | 45.00 |
| 4 | Fire Extinguishing sets - Tanker 3000 lit. and pump sets -1 no. /range, 3 Nos. | Nos. | 2.50 | 2 | 5.00 |
| 5 | First Aid Boxes | L.S. | 1.00 | 1 | 1.00 |
| 6 | Training of staff in Wildlife management techniques and awareness of other stake holders, villagers etc. | LS | 4.00 | 1 | 4.00 |
| | **Non-Recurring Cost - Total C** | | | | **74.00** |
| | **Grand Total =(Recurring + Non Recurring) (A+B+C)** | | | | **153.88** |

| | | | | | |
|---|---|---|---|---|---|
| **12** | **Eco-tourism Development and Village Eco-development** | | | | |
| 1 | Training of staff and villagers in ecotourism management- 1 course/year =5 courses | Nos. | 3.00 | 1 | 3.00 |
| 2 | Training to stakeholders 1 course/year =5 Nos. of courses | Course | 5.00 | 1 | 5.00 |
| 3 | Village Eco-development -10 villages | Village | 50.00 | 2 | 100.00 |
| 4 | Establishing administrative infrastructure of Eco-tourism like website, online booking software, operation and maint. 5 packages | Packages | 10.00 | 1 | 10.00 |

| | | | | | |
|---|---|---|---|---|---|
| | **Grand Total** | | | | **118.00** |
| **13** | **Research & Monitoring** | | | | |
| **A** | **Digitization** | | | | |
| 1 | GPS Instruments | 46+4=50 | 0.20 | 20 | 4.00 |
| 2 | Laptop for Ranges & ACFs | 3 | 0.50 | 3 | 1.50 |
| 3 | Display Board at Range offices | 5 | 0.30 | 5 | 1.50 |
| 4 | Display Board at Division Office | 1 | 0.40 | 1 | 0.40 |
| **B** | **Software development** | | | | |
| 1 | MSTriPES & | 46 | 0 | | 0.00 |
| 2 | Digitised Information Flora, Fauna & Area | 1 Job | 0.50 | 1 | 0.50 |
| 3 | Software formats /Google forms | 5 | 0.20 | | 0.00 |
| **C** | **Library books/Periodicals** | | | | 0.00 |
| 1 | Range office - Nos. 3 | 3 | 0.50 | 0 | 0.00 |
| 2 | Division Office 1 | 1 | 0.50 | 0 | 0.00 |
| | **Research & Monitoring -Total** | | | | **7.90** |
| **14** | **Training** | | | | |
| **A** | **Field Staff Training ( at local level)** | | | | 0.00 |
| 1 | Up to RFO 5 Trainings | 5 Trainings | 1.00 | 5 | 5.00 |
| 2 | ACF & DCF - 3 Trainings | 3 | 0.50 | 3 | 1.50 |
| 3 | Stakeholders - 1 Training per year for all ranges- Total -5 Trainings | 5 | 2.00 | 1 | 2.00 |
| 4 | Capacity building - 1 Training per range per year - Total -15Trainings | 3 | 1.00 | 3 | 3.00 |
| B | **Kits & other M.S.** | | | | 0.00 |
| 1 | Investigation kits | 46 | 0.10 | 46 | 4.60 |
| 2 | Seal Mark | 50 | 0.01 | 50 | 0.50 |

| | | | | | |
|---|---|---|---|---|---|
| 3 | Binoculars | 50 | 0.10 | 50 | 5.00 |
| | **Trainings - Total** | | | | **21.60** |
| | **Research, Monitoring and Trainings -Grand Total** | | | | **29.50** |
| | **Great Grand Total** | | | | **1785.71** |

# Budget for 2nd Year FY 2023-24

| Sr. Nos. | Work Particulars | Work Unit | Rate (Rs. In Lacs) | FY - 2023-24 (2) | |
|---|---|---|---|---|---|
| | | | | Phy. | Fin. |
| **1** | **Demarcation of Boundaries** | | | | |
| 1 | Demarcation of outer boundaries 3 ranges, 10 rounds and 28 beats boundaries in Notified WLS with Type - I Pillars including fixing. Ave. length 9 km /beat @10 pillars /Km.@Rs. 4860 /pillar =Total Rs. 4.40 / beat | Beat Nos | 4.40 | 5.00 | 22.00 |
| 2 | 1/5 th Boundary Demarcation Programme with Type - I Pillars including fixing at 50 M. apart i.e. 20 Nos/per Km. cost of Class I pillar Rs. 9600 each = Total Rs.1.92 Lacs per Km. Total Length = 129.925 km | Kms | 1.920 | 23.127 | 44.40 |
| | **Total** | | | | **66.40** |
| **2** | **Repairs and Maintenance of Roads and Culverts, bridges** | | | | |
| 1 | Repairs and Maintenance of | Kms | 0.99 | 111.7 | 110.41 |

| | | | | | |
|---|---|---|---|---|---|
| | Roads-9 Nos -111.7 kms | | | | |
| 2 | Repairs and Maintenance of Culverts | LS | 10.00 | 1 | 10.00 |
| 3 | Repairs and Maintenance of bridges | LS | 10.00 | 1 | 10.00 |
| | **Total** | | | | **130.41** |
| 3 | **Repairs and Maintenance of Administrative Buildings** | | | | |
| 1 | Range Offices -1 Nos | Nos | 3.00 | 1 | 3.00 |
| 2 | Forest Rest House @ Kanhargaon | Nos. | 3.00 | 1 | 3.00 |
| | **Total** | | | | **6.00** |
| **4** | **Repairs and Maintenance of Residential & other Buildings** | | | | |
| 1 | Type-III - 2 Nos. (RFO Qtr.) | Nos. | 2.50 | | 0.00 |
| 2 | Type-II -2 No.(ForesterQtr.) | Nos. | 2.00 | | 0.00 |
| 3 | Type-I -9 Nos. (FG Qtr.) | Nos. | 1.00 | 3 | 3.00 |
| | **Total** | | | | **3.00** |
| 5 | **Construction of New Administrative and other Structures** | | | | |
| 1 | Division office -1 No | Nos | 96.00 | | |
| 2 | Range Office - 2 Nos. | Nos. | 48.00 | 1 | 48.00 |
| 3 | Library Unit - 3 Nos | Nos. | 48.00 | 1 | 48.00 |
| 4 | Interpretation Centre-2 Nos | Nos. | 48.00 | 1 | 48.00 |
| 5 | Stores and Godowns-5Nos | Nos. | 5.00 | 2 | 10.00 |
| 6 | Other bldgs- Vehicle Garage-10 Nos. | Nos. | 4.00 | 4 | 16.00 |

| | | | | | |
|---|---|---|---|---|---|
| 7 | Fire Watch Towers- 60 M. high - 4 Nos | Nos. | 50.00 | 1 | 50.00 |
| 8 | WL observation Towers-9 Nos | Nos. | 2.00 | 3 | 6.00 |
| | **Total** | | | | **226.00** |
| **6** | **Construction of New Residential Buildings** | | | | |
| 1 | Type - V (DCF/DFO) -1 No. | Nos. | 50.00 | | |
| 2 | Type - IV (ACF) - 2 Nos. | Nos. | 40.00 | | |
| 3 | Type-III - 3 Nos (RFO Qtr.) | Nos. | 33.00 | 1 | 33.00 |
| 4 | Type-II -12 (Foresters Qtr.) | Nos. | 29.00 | 6 | 174.00 |
| 5 | Type-I - 33 Nos. (FG Qtr.) | Nos | 23.00 | 10 | 230.00 |
| | **Total** | | | | **437.00** |
| | **Habitat Development** | | | | |
| **7** | **Fodder and grass planting in blanks (Model-9 under MREGS)** | | | | |
| 1 | PPO/PYO | Ha. | 0.619 | 100 | 61.94 |
| 2 | FYO | Ha. | 0.247 | 150 | 37.10 |
| 3 | SYO | Ha. | 0.195 | | |
| 4 | TYO | Ha. | 0.168 | | |
| 5 | IV YO | Ha. | 0.161 | | |
| 6 | V YO | Ha. | 0.161 | | |
| | **Total** | | | | **99.05** |
| **8** | **planting of evergreen and fruit tress along water courses and water holes.** | | | | |
| 1 | PPO/PYO | LS - 1 job | 30.000 | 1 | 30.00 |
| 2 | FYO | LS - 1 job | 20.000 | 1 | 20.00 |
| 3 | SYO | LS - 1 job | 15.000 | 1 | 15.00 |

| | | | | | |
|---|---|---|---|---|---|
| 4 | TYO | LS - 1 job | 10.000 | 1 | 10.00 |
| 5 | IV YO | LS - 1 job | 5.000 | 1 | 5.00 |
| 6 | V YO | LS - 1 job | 5.000 | 1 | 5.00 |
| | **Total** | | | | **85.00** |
| **2** | **Grand Total (7+8)** | | | | **184.05** |
| **9** | **Wildlife Protection - Infrastructure , vehicles, equipments etc.** | | | | |
| 1 | Construction of Protection Huts with Solar Powered Bore well - 10 Nos | Nos. | 8.00 | 5 | 40.00 |
| 2 | Purchase of New Jeeps - 8 Nos.4WD jeeps | Nos. | 10.00 | 0 | 0.00 |
| 3 | Purchase of New Mini bus -2 Nos. (15 seater) | Nos | 20.00 | 1 | 20.00 |
| 4 | Construction of Check posts 9 Nos. | Nos. | 2.800 | 0 | 0.00 |
| 5 | Patrolling Path creation | Kms | 0.200 | 50 | 10.00 |
| 6 | Setting up of wireless communication in 10 Protection hut, 8 check posts and 3 range HQs and 1 Division office = Total 22 stations | Nos. | 3.000 | 7 | 21.00 |
| 7 | Purchase of walkie-Talkie handsets for Beat guards - 28 Nos.+2 Reserve sets | Nos. | 0.200 | 16 | 3.20 |
| 8 | Purchase of walkie-Talkie wireless sets for jeeps - 8 Nos. | Nos. | 0.500 | | 0.00 |
| | **Total-** | | | | **94.20** |
| **10** | **Quick Response Team Accessories** | | | | |

| | | | | | |
|---|---|---|---|---|---|
| 1 | Purchase of Net Gun, Tranq. Guns, trap cages, treatment cages, Fibre sticks, | Lumpsum | 5.000 | 1 | 5.00 |
| 2 | Purchase of Equip. Sets and accessories Teledarts, blowpipes, safety gears, drugs, ropes, ladder, Snake tongs & Hooks etc. | Lumpsum | 2.000 | 1 | 2.00 |
| | **Total-** | | | | **7.00** |
| | **Total-( 9+10)** | | | | **101.20** |

| | | | | | |
|---|---|---|---|---|---|
| **11** | **Fire Protection Works Fire lines** | | | | |
| | **Recurring Costs** | | | | 0.00 |
| **A** | **Cutting and burning of fire lines** | | | | |
| 1 | Cutting and burning of fire lines - 3 M wide Length-202 Km. @4.5 Mdays @Rs. 403 per day = 1814/Km | Kms | 0.018 | 202.00 | 3.66 |
| 2 | Cutting and burning of fire lines - 6 M wide Length-177 Km. = Rs. 2380/Km | Kms | 0.024 | 177.00 | 4.21 |
| | **Cutting and burning of fire lines-Total A** | | | | **7.88** |
| **B** | **General Fire Protection** | | | | |
| 1 | Hotshot Crew / Fire fighting squad -One squad of 6 persons per round for 10 rounds for period of 4 months with 26 working days per month. Wages @ Rs. 403 per day Total Mandays = 6240 | Mandays | 0.00403 | 6240 | 25.15 |

| | | | | | |
|---|---|---|---|---|---|
| 2 | Fire watchers for Beats - 3 Watcher per Beat for 28 Beats, with 26 working days per month for 4 months. Total Mandays- 8736 | Mandays | 0.00403 | 8736 | 35.21 |
| 3 | Watchers for Watchtower -3 Fire watchers per tower for -9 Watch towers, 26 days per month for 4 month. Total Mandays- 2808 | Mandays | 0.00403 | 2808 | 11.32 |
| 4 | Blower maintenance -@Rs.1100 per Blower for 30 Blowers (1 Blower per beat) | Blowers. | 0.0110 | 30 | 0.33 |
| | **General Fire Protection Cost -B Total** | | | **17814.00** | **72.00** |
| | **Total Recurring Cost -A+B** | | | | **79.88** |
| | **Non recurring expenditure** | | | | 0.00 |
| **C** | **Procurement of Fire fighting Equipments** | | | | |
| 1 | Purchase of New Blowers 1 per beat - Total 30 nos. | Nos | 0.50 | | 0.00 |
| 2 | Purchase of Drone Camera-- 1 per Range for 3 Ranges | Nos. | 4.00 | 1 | 4.00 |
| 3 | Establishing New Fire Watch Towers @ 4sites 45 M height. | Nos. | 45.00 | 1 | 45.00 |
| 4 | Fire Extinguishing sets - Tanker 3000 lit. and pump sets -1 no. /range, 3 Nos. | Nos. | 2.50 | 2 | 5.00 |
| 5 | First Aid Boxes | L.S. | 1.00 | 0 | 0.00 |
| 6 | Training of staff in Wildlife management techniques and awareness of other stake | LS | 4.00 | 1 | 4.00 |

| | | | | | |
|---|---|---|---|---|---|
| | holders, villagers etc. | | | | |
| | **Non-Recurring Cost - Total C** | | | | **58.00** |
| | **Grand Total =(Recurring + Non Recurring) (A+B+C)** | | | | **137.88** |

| | | | | | |
|---|---|---|---|---|---|
| **12** | **Eco-tourism Development and Village Eco-development** | | | | |
| 1 | Training of staff and villagers in ecotourism management- 1 course/year =5 courses | Nos. | 3.00 | 1 | 3.00 |
| 2 | Training to stakeholders 1 course/year =5 Nos. of courses | Course | 5.00 | 1 | 5.00 |
| 3 | Village Eco-development -10 villages | Village | 50.00 | 2 | 100.00 |
| 4 | Establishing administrative infrastructure of Eco-tourism like website, online booking software, operation and maint. 5 packages | Packages | 10.00 | 1 | 10.00 |
| | **Grand Total** | | | **5.00** | **118.00** |
| **13** | **Research & Monitoring** | | | | |
| **A** | **Digitization** | | | | |
| 1 | GPS Instruments | 46+4=50 | 0.20 | 20 | 4.00 |
| 2 | Laptop for Ranges & ACFs | 3 | 0.50 | | 0.00 |
| 3 | Display Board at Range offices | 5 | 0.30 | | 0.00 |
| 4 | Display Board at Division Office | 1 | 0.40 | | 0.00 |
| **B** | **Software development** | | | | |

| | | | | | |
|---|---|---|---|---|---|
| 1 | MSTriPES & | 46 | 0 | | 0.00 |
| 2 | Digitised Information Flora, Fauna & Area | 1 Job | 0.50 | | 0.00 |
| 3 | Software formats /Google forms | 5 | 0.20 | 2 | 0.40 |
| **C** | **Library books/Periodicals** | | | | 0.00 |
| 1 | Range office - Nos. 3 | 3 | 0.50 | 3 | 1.50 |
| 2 | Division Office 1 | 1 | 0.50 | 1 | 0.50 |
| | **Research & Monitoring -Total** | | | | **6.40** |
| **14** | **Training** | | | | |
| **A** | **Field Staff Training ( at local level)** | | | | 0.00 |
| 1 | Up to RFO 5 Trainings | 5 Nos | 1.00 | 5 | 5.00 |
| 2 | ACF & DCF - 3 Trainings | 3 | 0.50 | 3 | 1.50 |
| 3 | Stakeholders - 1 Training per year for all ranges- Total -5 | 5 | 2.00 | 1 | 2.00 |
| 4 | Capacity building - 1 Training per range per year -Total -15 Nos | 3 | 1.00 | 3 | 3.00 |
| B | **Kits & other M.S.** | | | | 0.00 |
| 1 | Investigation kits | 46 | 0.10 | 0 | 0.00 |
| 2 | Seal Mark | 50 | 0.01 | 0 | 0.00 |
| 3 | Binoculars | 50 | 0.10 | 0 | 0.00 |
| | **Trainings - Total** | | | | **11.50** |
| | **Research, Monitoring & Trainings -Grand Total** | | | | **17.90** |
| | **Great Grand Total** | | | **5.00** | **1427.84** |

# Budget for 3rd Year FY 2024-25

| Sr. Nos. | Work Particulars | Work Unit | Rate (Rs. In Lacs) | FY - 2024-25 (3) | |
|---|---|---|---|---|---|
| | | | | Phy. | Fin. |
| **1** | **Demarcation of Boundaries** | | | | |
| 1 | Demarcation of outer boundaries 3 ranges, 10 rounds and 28 beats boundaries in Notified WLS with Type - I Pillars including fixing. Ave. length 9 km /beat @10 pillars /Km.@Rs. 4860 /pillar =Total Rs. 4.40 Lacs per beat | Beat Nos | 4.40 | 5.00 | 22.00 |
| 2 | 1/5 th Boundary Demarcation Programme with Type - I Pillars including fixing at 50 M. apart i.e. 20 Nos/per Km. cost of Class I pillar Rs. 9600 each =Total Rs.1.92 Lacs / Km. Total Length = 129.925 km | Kms | 1.920 | 22.820 | 43.81 |
| | **Total** | | | | **65.81** |
| **2** | **Repairs and Maintenance of Roads and Culverts, bridges** | | | | |
| 1 | Repairs and Maintenance of Roads - 9 Roads - 111.7 kms | Kms | 0.99 | 111.7 | 110.41 |
| 2 | Repairs and Maintenance of Culverts | LS | 10.00 | 1 | 10.00 |
| 3 | Repairs and Maintenance of bridges | LS | 10.00 | 1 | 10.00 |
| | **Total** | | | | **130.41** |
| 3 | **Repairs and Maintenance of Administrative Buildings** | | | | |
| 1 | Range Offices -1 Nos | Nos | 3.00 | 1.00 | 3.00 |
| 2 | Forest Rest House @ Kanhargaon | Nos. | 3.00 | 1 | 3.00 |
| | **Total** | | | | **6.00** |

| | | | | | |
|---|---|---|---|---|---|
| **4** | **Repairs and Maintenance of Residential & other Buildings** | | | | |
| 1 | Type-III - 2 Nos. (RFO Qtr.) | Nos. | 2.50 | 1 | 2.50 |
| 2 | Type-II -2 No. (Forester Qtr.) | Nos. | 2.00 | 2 | 4.00 |
| 3 | Type-I -9 Nos. (FG Qtr.) | Nos. | 1.00 | 3 | 3.00 |
| | **Total** | | | | **9.50** |
| 5 | **Construction of New Administrative and other Structures** | | | | |
| 1 | Division office -1 No | Nos | 96.00 | | |
| 2 | Range Office - 2 Nos. | Nos. | 48.00 | | 0.00 |
| 3 | Library Unit - 3 Nos | Nos. | 48.00 | 1 | 48.00 |
| 4 | Interpretation Centre - 2 Nos | Nos. | 48.00 | 1 | 48.00 |
| 5 | Stores and Godowns- 5 Nos | Nos. | 5.00 | | 0.00 |
| 6 | Other bldgs-Vehicle Garage-10Nos. | Nos. | 4.00 | 2 | 8.00 |
| 7 | Fire Watch Towers-60 M. high -4Nos | Nos. | 50.00 | 1 | 50.00 |
| 8 | WL observation Towers - 9 Nos | Nos. | 2.00 | 3 | 6.00 |
| | **Total** | | | | **160.00** |
| **6** | **Construction of New Residential Buildings** | | | | |
| 1 | Type - V (DCF/DFO) -1 No. | Nos. | 50.00 | | |
| 2 | Type - IV (ACF) - 2 Nos. | Nos. | 40.00 | | |
| 3 | Type-III - 3 Nos (RFO Qtr.) | Nos. | 33.00 | | 0.00 |
| 4 | Type-II -12 (Foresters Qtr.) | Nos. | 29.00 | | 0.00 |
| 5 | Type-I - 33 Nos. (FG Qtr.) | Nos | 23.00 | 10 | 230.00 |
| | **Total** | | | | **230.00** |

| | | | | | |
|---|---|---|---|---|---|
| | **Habitat Development** | | | | |
| **7** | **Fodder and grass planting in blanks (Model-9 under MREGS)** | | | | |
| 1 | PPO/PYO | Ha. | 0.619 | 50 | 30.97 |
| 2 | FYO | Ha. | 0.247 | 100 | 24.74 |
| 3 | SYO | Ha. | 0.195 | 150 | 29.19 |
| 4 | TYO | Ha. | 0.168 | | 0.00 |
| 5 | IV YO | Ha. | 0.161 | | |
| 6 | V YO | Ha. | 0.161 | | |
| | **Total** | | | | **84.90** |
| **8** | **planting of evergreen and fruit tress along water courses and water holes.** | | | | |
| 1 | PPO/PYO | LS - 1 job | 30.000 | 1 | 30.00 |
| 2 | FYO | LS - 1 job | 20.000 | 1 | 20.00 |
| 3 | SYO | LS - 1 job | 15.000 | 1 | 15.00 |
| 4 | TYO | LS - 1 job | 10.000 | 1 | 10.00 |
| 5 | IV YO | LS - 1 job | 5.000 | 1 | 5.00 |
| 6 | V YO | LS - 1 job | 5.000 | 1 | 5.00 |
| | **Total** | | | | **85.00** |
| **2** | **Grand Total (7+8)** | | | | **169.90** |
| **9** | **Wildlife Protection - Infrastructure , vehicles, equipments etc.** | | | | |
| 1 | Construction of Protection Huts with Solar Powered Bore well - 10 Nos | Nos. | 8.00 | | 0.00 |
| 2 | Purchase of New Jeeps - 8 Nos.4WD jeeps | Nos. | 10.00 | | 0.00 |

| | | | | | |
|---|---|---|---|---|---|
| 3 | Purchase of New Mini bus -2 Nos. (15 seater) | Nos | 20.00 | | 0.00 |
| 4 | Construction of Check posts 9 Nos. | Nos. | 2.800 | | 0.00 |
| 5 | Patrolling Path creation | Kms | 0.200 | 50 | 10.00 |
| 6 | Setting up of wireless communication in 10 Protection hut, 8 check posts and 3 range HQs and 1 Division office = Total 22 stations | Nos. | 3.000 | 7 | 21.00 |
| 7 | Purchase of walkie-Talkie handsets for Beat guards - 28 Nos.+2 Reserve sets | Nos. | 0.200 | | 0.00 |
| 8 | Purchase of walkie-Talkie wireless sets for jeeps - 8 Nos. | Nos. | 0.500 | | 0.00 |
| | **Total-** | | | | **31.00** |
| **10** | **Quick Response Team Accessories** | | | | |
| 1 | Purchase of Net Gun, Tranq. Guns, trap cages, treatment cages, Fibre sticks, | Lumpsum | 5.000 | 1 | 5.00 |
| 2 | Purchase of Equip. Sets and accessories Teledarts, blowpipes, safety gears, drugs, ropes, ladder, Snake tongs & Hooks etc. | Lumpsum | 2.000 | 1 | 2.00 |
| | **Total-** | | | | **7.00** |
| | **Total-( 9+10)** | | | | **38.00** |

| | | | | | |
|---|---|---|---|---|---|
| **11** | **Fire Protection Works Fire lines** | | | | |
| | **Recurring Costs** | | | | 0.00 |

| | | | | | |
|---|---|---|---|---|---|
| **A** | **Cutting and burning of fire lines** | | | | |
| 1 | Cutting and burning of fire lines - 3 M wide Length-202 Km. @4.5 Mdays @Rs. 403 per day = 1814/Km | Kms | 0.018 | 202.00 | 3.66 |
| 2 | Cutting and burning of fire lines - 6 M wide Length-177 Km. = Rs. 2380?Km | Kms | 0.024 | 177.00 | 4.21 |
| | **Cutting and burning of fire lines-Total A** | | | | **7.88** |
| **B** | **General Fire Protection** | | | | |
| 1 | Hotshot Crew / Fire fighting squad -One squad of 6 persons per round for 10 rounds for period of 4 months with 26 working days per month. Wages @ Rs. 403 per day Total Mandays = 6240 | Mandays | 0.00403 | 6240 | 25.15 |
| 2 | Fire watchers for Beats - 3 Watcher per Beat for 28 Beats, with 26 working days per month for 4 months. Total Mandays- 8736 | Mandays | 0.00403 | 8736 | 35.21 |
| 3 | Watchers for Watchtower -3 Fire watchers per tower for -9 Watch towers, 26 days per month for 4 month. Total Mandays- 2808 | Mandays | 0.00403 | 2808 | 11.32 |
| 4 | Blower maintenance -@Rs.1100 per Blower for 30 Blowers (1 Blower per beat) | Blowers. | 0.0110 | 30 | 0.33 |
| | **General Fire Protection Cost -B Total** | | | | **72.00** |
| | **Total Recurring Cost -A+B** | | | | **79.88** |
| | **Non recurring expenditure** | | | | 0.00 |
| **C** | **Procurement of Fire fighting Equipments** | | | | |
| 1 | Purchase of New Blowers 1 per beat - Total 30 nos. | Nos | 0.50 | | 0.00 |

| | | | | | |
|---|---|---|---|---|---|
| 2 | Purchase of Drone Camera- 1 per Range for 3 Ranges | Nos. | 4.00 | 1.00 | 4.00 |
| 3 | Establishing New Fire Watch Towers @ 4 sites 45 m. height | Nos. | 45.00 | 1.00 | 45.00 |
| 4 | Fire Extinguishing sets - Tanker 3000 lit. and pump sets -1 no./range, 3 Nos. | Nos. | 2.50 | 0.00 | 0.00 |
| 5 | First Aid Boxes | L.S. | 1.00 | 1 | 1.00 |
| 6 | Training of staff in Wildlife management techniques and awareness of other stake holders, villagers etc. | LS | 4.00 | 1 | 4.00 |
| | **Non-Recurring Cost - Total C** | | | | **54.00** |
| | **Grand Total =(Recurring + Non Recurring) (A+B+C)** | | | | **133.88** |

| | | | | | |
|---|---|---|---|---|---|
| **12** | **Eco-tourism Development and Village Ecodevelopment** | | | | |
| 1 | Training of staff and villagers in ecotourism management- 1 course/year =5 Nos. of courses | Nos. | 3.00 | 1 | 3.00 |
| 2 | Training to stakeholders 1 course/year =5 Nos. of courses | Course | 5.00 | 1 | 5.00 |
| 3 | Village Eco-development -10 villages | Village | 50.00 | 2 | 100.00 |
| 4 | Establishing administrative infrastructure of Eco-tourism like website, online booking software, operation and maint. 5 packages | Packages | 10.00 | 1 | 10.00 |
| | **Grand Total** | | | **5.00** | **118.00** |
| **13** | **Research & Monitoring** | | | | |
| **A** | **Digitization** | | | | |
| 1 | GPS Instruments | 46+4=50 | 0.20 | 10 | 2.00 |

| | | | | | |
|---|---|---|---|---|---|
| 2 | Laptop for Ranges & ACFs | 3 | 0.50 | | 0.00 |
| 3 | Display Board at Range offices | 5 | 0.30 | | 0.00 |
| 4 | Display Board at Division Office | 1 | 0.40 | | 0.00 |
| **B** | **Software development** | | | | |
| 1 | MSTriPES & | 46 | 0 | | 0.00 |
| 2 | Digitised Information Flora, Fauna & Area | 1 Job | 0.50 | | 0.00 |
| 3 | Software formats /Google forms | 5 | 0.20 | 3 | 0.60 |
| **C** | **Library books/Periodicals** | | | | 0.00 |
| 1 | Range office - Nos. 3 | 3 | 0.50 | | 0.00 |
| 2 | Division Office 1 | 1 | 0.50 | | 0.00 |
| | **Research & Monitoring -Total** | | | | **2.60** |
| **14** | **Training** | | | | |
| **A** | **Field Staff Training ( at local level)** | | | | 0.00 |
| 1 | Up to RFO 5 Trainings | 5 | 1.00 | 5 | 5.00 |
| 2 | ACF & DCF - 3 Trainings | 3 | 0.50 | 3 | 1.50 |
| 3 | Stakeholders - 1 Training per year for all ranges- Total -5 Trainings | 5 | 2.00 | 1 | 2.00 |
| 4 | Capacity building - 1 Training per range per year - Total -15Trainings | 3 | 1.00 | 3 | 3.00 |
| B | **Kits & other M.S.** | | | | 0.00 |
| 1 | Investigation kits | 46 | 0.10 | 0 | 0.00 |
| 2 | Seal Mark | 50 | 0.01 | 0 | 0.00 |
| 3 | Binoculars | 50 | 0.10 | 0 | 0.00 |
| | **Trainings - Total** | | | | **11.50** |
| | **Research, Monitoring and Trainings -** | | | | **14.10** |

| | | | | | |
|---|---|---|---|---|---|
| | **Grand Total** | | | | |
| | **Great Grand Total** | | | **5.00** | **1075.60** |

# Budget for 4th Year FY 2025-26

| Sr. Nos. | Work Particulars | Work Unit | Rate (Rs. In Lacs) | FY - 2025-26 (4) | |
|---|---|---|---|---|---|
| | | | | Phy. | Fin. |
| **1** | **Demarcation of Boundaries** | | | | |
| 1 | Demarcation of outer boundaries 3 ranges, 10 rounds and 28 beats boundaries in Notified WLS with Type - I Pillars including fixing. Ave. length 9 km /beat @10 pillars /Km.@Rs. 4860 /pillar =Total Rs. 4.40 Lacs per beat | Beat Nos | 4.40 | 5 | 22.00 |
| 2 | 1/5 th Boundary Demarcation Programme with Type - I Pillars including fixing at 50 M. apart i.e. 20 Nos/per Km. cost of Class I pillar Rs. 9600 each = Total Rs.1.92 Lacs per Km. Total Length = 129.925 km | Kms | 1.920 | 24.725 | 47 |
| | **Total** | | | | **69.47** |
| **2** | **Repairs and Maintenance of Roads and Culverts, bridges** | | | | |
| 1 | Repairs and Maintenance of Roads - 9 Roads - 111.7 kms | Kms | 0.99 | 111.7 | 110 |
| 2 | Repairs and Maintenance of Culverts | LS | 10.00 | 1 | 10.00 |
| 3 | Repairs and Maintenance of bridges | LS | 10.00 | 1 | 10.00 |

| | | | | | |
|---|---|---|---|---|---|
| | **Total** | | | | **130.41** |
| 3 | **Repairs and Maintenance of Administrative Buildings** | | | | |
| 1 | Range Offices -1 Nos | Nos | 3.00 | | 0 |
| 2 | Forest Rest House @ Kanhargaon | Nos. | 3.00 | 1 | 3.00 |
| | **Total** | | | | **3.00** |
| **4** | **Repairs and Maintenance of Residential & other Buildings** | | | | |
| 1 | Type-III - 2 Nos. (RFO Qtr.) | Nos. | 2.50 | | 0 |
| 2 | Type-II -2 No. (Forester Qtr.) | Nos. | 2.00 | | 0 |
| 3 | Type-I -9 Nos. (FG Qtr.) | Nos. | 1.00 | | 0 |
| | **Total** | | | | **0.00** |
| 5 | **Construction of New Administrative and other Structures** | | | | |
| 1 | Division office -1 No | Nos | 96.00 | | |
| 2 | Range Office - 2 Nos. | Nos. | 48.00 | | 0 |
| 3 | Library Unit - 3 Nos | Nos. | 48.00 | | 0 |
| 4 | Interpretation Centre - 2 Nos | Nos. | 48.00 | | 0 |
| 5 | Stores and Godowns- 5 Nos | Nos. | 5.00 | | 0 |
| 6 | Other bldgs-Vehicle Garage-10Nos. | Nos. | 4.00 | | 0 |
| 7 | Fire Watch Towers- 60 M. high -4 Nos | Nos. | 50.00 | | 0 |
| 8 | WL observation Towers - 9 Nos | Nos. | 2.00 | | 0 |
| | **Total** | | | | **0.00** |
| **6** | **Construction of New Residential Buildings** | | | | |
| 1 | Type - V (DCF/DFO) -1 No. | Nos. | 50.00 | | |
| 2 | Type - IV (ACF) - 2 Nos. | Nos. | 40.00 | | |

| | | | | | |
|---|---|---|---|---|---|
| 3 | Type-III - 3 Nos (RFO Qtr.) | Nos. | 33.00 | | 0 |
| 4 | Type-II -12 (Foresters Qtr.) | Nos. | 29.00 | | 0 |
| 5 | Type-I - 33 Nos. (FG Qtr.) | Nos | 23.00 | 3 | 69.00 |
| | **Total** | | | | **69.00** |
| | **Habitat Development** | | | | |

| | | | | | |
|---|---|---|---|---|---|
| **7** | **Fodder and grass planting in blanks (Model-9 under MREGS)** | | | | |
| 1 | PPO/PYO | Ha. | 0.619 | | 0 |
| 2 | FYO | Ha. | 0.247 | 50 | 12.37 |
| 3 | SYO | Ha. | 0.195 | 100 | 19.46 |
| 4 | TYO | Ha. | 0.168 | 150 | 25.19 |
| 5 | IV YO | Ha. | 0.161 | | |
| 6 | V YO | Ha. | 0.161 | | |
| | **Total** | | | | **57.02** |
| **8** | **planting of evergreen and fruit tress along water courses and water holes.** | | | | |
| 1 | PPO/PYO | LS - 1 job | 30.000 | 2 | 60 |
| 2 | FYO | LS - 1 job | 20.000 | 2 | 40 |
| 3 | SYO | LS - 1 job | 15.000 | 2 | 30 |
| 4 | TYO | LS - 1 job | 10.000 | 2 | 20 |
| 5 | IV YO | LS - 1 job | 5.000 | 2 | 10 |
| 6 | V YO | LS - 1 job | 5.000 | 2 | 10 |
| | **Total** | | | | **170.00** |
| **2** | **Grand Total (7+8)** | | | | **227.02** |

| | | | | | |
|---|---|---|---|---|---|
| **9** | **Wildlife Protection - Infrastructure , vehicles, equipments etc.** | | | | |
| 1 | Construction of Protection Huts with Solar Powered Bore well - 10 Nos | Nos. | 8.00 | | 0 |
| 2 | Purchase of New Jeeps - 8 Nos.4WD jeeps | Nos. | 10.00 | | 0 |
| 3 | Purchase of New Mini bus -2 Nos. (15 seater) | Nos | 20.00 | | 0 |
| 4 | Construction of Check posts 9 Nos. | Nos. | 2.800 | | 0 |
| 5 | Patrolling Path creation | Kms | 0.200 | 50 | 10.00 |
| 6 | Setting up of wireless communication in 10 Protection hut, 8 check posts and 3 range HQs and 1 Division office = Total 22 stations | Nos. | 3.000 | | 0.00 |
| 7 | Purchase of walkie-Talkie handsets for Beat guards - 28 Nos.+2 Reserve sets | Nos. | 0.200 | | 0.00 |
| 8 | Purchase of walkie-Talkie wireless sets for jeeps - 8 Nos. | Nos. | 0.500 | | 0.00 |
| | **Total-** | | | | **10.00** |
| **10** | **Quick Response Team Accessories** | | | | |
| 1 | Purchase of Net Gun, Tranq. Guns, trap cages, treatment cages, Fibre sticks, | Lumpsum | 5.000 | | 0.00 |
| 2 | Purchase of Equip. Sets and accessories Teledarts, blowpipes, safety gears, drugs, ropes, ladder, Snake tongs & Hooks etc. | Lumpsum | 2.000 | 1 | 2.00 |
| | **Total-** | | | | **2.00** |
| | **Total-( 9+10)** | | | | **12.00** |

| | | | | | |
|---|---|---|---|---|---|
| **11** | **Fire Protection Works Fire lines** | | | | |
| | **Recurring Costs** | | | | |
| **A** | **Cutting and burning of fire lines** | | | | |
| 1 | Cutting and burning of fire lines - 3 M wide Length-202 Km. @4.5 Mdays @Rs. 403 per day = 1814/Km | Kms | 0.018 | 202.00 | 3.66 |
| 2 | Cutting and burning of fire lines - 6 M wide Length-177 Km. = Rs. 2380?Km | Kms | 0.024 | 177.00 | 4.21 |
| | **Cutting and burning of fire lines-Total A** | | | | **7.88** |
| **B** | **General Fire Protection** | | | | |
| 1 | Hotshot Crew / Fire fighting squad - One squad of 6 persons per round for 10 rounds for period of 4 months with 26 working days per month. Wages @ Rs. 403 per day Total Mandays = 6240 | Mandays | 0.00403 | 6240 | 25.15 |
| 2 | Fire watchers for Beats - 3 Watcher per Beat for 28 Beats, with 26 working days per month for 4 months. Total Mandays- 8736 | Mandays | 0.00403 | 8736 | 35.21 |
| 3 | Watchers for Watchtower -3 Fire watchers per tower for -9 Watch towers, 26 days per month for 4 month. Total Mandays- 2808 | Mandays | 0.00403 | 2808.00 | 11.32 |
| 4 | Blower maintenance -@Rs.1100 per Blower for 30 Blowers (1 Blower per beat) | Blowers. | 0.0110 | 30 | 0.33 |
| | **General Fire Protection Cost -B Total** | | | **17814.00** | **72.00** |
| | **Total Recurring Cost -A+B** | | | | **79.88** |
| | **Non recurring expenditure** | | | | 0 |
| **C** | **Procurement of Fire fighting** | | | | |

| | | | | | |
|---|---|---|---|---|---|
| | **Equipments** | | | | |
| 1 | Purchase of New Blowers 1 per beat - Total 30 nos. | Nos | 0.50 | | 0 |
| 2 | Purchase of Drone Camera-- 1 per Range for 3 Ranges | Nos. | 4.00 | 0 | 0 |
| 3 | Establishing New Fire Watch Towers @ 4 sites 45 m. height. | Nos. | 45.00 | 1 | 45 |
| 4 | Fire Extinguishing sets - Tanker 3000 lit. and pump sets -1 no. /range, 3 Nos. | Nos. | 2.50 | 0 | 0 |
| 5 | First Aid Boxes | L.S. | 1.00 | 0 | 0 |
| 6 | Training of staff in Wildlife management techniques and awareness of other stake holders, villagers etc. | LS | 4.00 | 1 | 4.00 |
| | **Non-Recurring Cost - Total C** | | | | **49.00** |
| | **Grand Total =(Recurring + Non Recurring) (A+B+C)** | | | | **128.88** |

| | | | | | |
|---|---|---|---|---|---|
| **12** | **Eco-tourism Development and Village Eco-development** | | | | |
| 1 | Training of staff and villagers in ecotourism management- 1 course/year =5 Nos. of courses | Nos. | 3.00 | 1 | 3.00 |
| 2 | Training to stakeholders 1 course/year =5 Nos. of courses | Course | 5.00 | 1 | 5.00 |
| 3 | Village Eco-development -10 villages | Village | 50.00 | 2 | 100.00 |
| 4 | Establishing administrative infrastructure of Eco-tourism like website, online booking software, operation and maint. 5 packages | Packages | 10.00 | 1 | 10.00 |
| | **Grand Total** | | | **5.00** | **118.00** |

| | | | | | |
|---|---|---|---|---|---|
| **13** | **Research & Monitoring** | | | | |
| **A** | **Digitization** | | | | |
| 1 | GPS Instruments 46+4=50 | 50 | 0.20 | | 0.00 |
| 2 | Laptop for Ranges & ACFs | 3 | 0.50 | | 0.00 |
| 3 | Display Board at Range offices | 5 | 0.30 | | 0.00 |
| 4 | Display Board at Division Office | 1 | 0.40 | | 0.00 |
| **B** | **Software development** | | | | |
| 1 | MSTriPES & | 46 | 0 | | 0.00 |
| 2 | Digitised Information Flora, Fauna & Area | 1 Job | 0.50 | | 0.00 |
| 3 | Software formats /Google forms | 5 | 0.20 | | 0.00 |
| **C** | **Library books/Periodicals** | | | | 0.00 |
| 1 | Range office - Nos. 3 | 3 | 0.50 | | 0.00 |
| 2 | Division Office 1 | 1 | 0.50 | | 0.00 |
| | **Research & Monitoring -Total** | | | | **0.00** |
| **14** | **Training** | | | | |
| **A** | **Field Staff Training ( at local level)** | | | | 0.00 |
| 1 | Up to RFO 5 Trainings | 5 | 1.00 | 5 | 5.00 |
| 2 | ACF & DCF - 3 Trainings | 3 | 0.50 | 3 | 1.50 |
| 3 | Stakeholders - 1 Training per year for all ranges- Total -5 Trainings | 5 | 2.00 | 1 | 2.00 |
| 4 | Capacity building - 1 Training per range per year - Total -15Trainings | 3 | 1.00 | 3 | 3.00 |
| B | **Kits & other M.S.** | | | | 0.00 |
| 1 | Investigation kits | 46 | 0.10 | 0 | 0.00 |
| 2 | Seal Mark | 50 | 0.01 | 0 | 0.00 |
| 3 | Binoculars | 50 | 0.10 | 0 | 0.00 |

| | | | | | |
|---|---|---|---|---|---|
| | **Trainings - Total** | | | | **11.50** |
| | **Research, Monitoring and Trainings - Grand Total** | | | | **11.50** |
| | **Great Grand Total** | | | **5.00** | **769.28** |

# Budget for 5th Year FY 2026-27

| Sr. Nos. | Work Particulars | Work Unit | Rate (Rs. In Lacs) | FY - 2026-27 (5) | |
|---|---|---|---|---|---|
| | | | | Phy. | Fin. |
| **1** | **Demarcation of Boundaries** | | | | |
| 1 | Demarcation of outer boundaries 3 ranges, 10 rounds and 28 beats boundaries in Notified WLS with Type - I Pillars including fixing. Ave. length 9 km /beat @10 pillars /Km.@Rs. 4860 /pillar =Total Rs. 4.40 Lacs per beat | Beat Nos | 4.40 | 8 | 35 |
| 2 | 1/5 th Boundary Demarcation Programme with Type - I Pillars including fixing at 50 M. apart i.e. 20 Nos/per Km. cost of Class I pillar Rs. 9600 each = Total Rs.1.92 Lacs per Km. Total Length = 129.925 km | Kms | 1.920 | 35.033 | 67 |
| | **Total** | | | | **102.46** |
| **2** | **Repairs and Maintenance of Roads and Culverts, bridges** | | | | |
| 1 | Repairs and Maintenance of Roads - 9 Roads - 111.7 kms | Kms | 0.99 | 111.7 | 110 |
| 2 | Repairs & Maintenance of Culverts | LS | 10.00 | 1 | 10.00 |
| 3 | Repairs and Maintenance of bridges | LS | 10.00 | 1 | 10.00 |
| | **Total** | | | | **130.41** |

| | | | | | |
|---|---|---|---|---|---|
| 3 | **Repairs and Maintenance of Administrative Buildings** | | | | |
| 1 | Range Offices -1 Nos | Nos | 3.00 | | 0 |
| 2 | Forest Rest House @ Kanhargaon | Nos. | 3.00 | 1 | 3.00 |
| | **Total** | | | | **3.00** |
| **4** | **Repairs and Maintenance of Residential & other Buildings** | | | | |
| 1 | Type-III - 2 Nos. (RFO Qtr.) | Nos. | 2.50 | | 0 |
| 2 | Type-II -2 No. (Forester Qtr.) | Nos. | 2.00 | | 0 |
| 3 | Type-I -9 Nos. (FG Qtr.) | Nos. | 1.00 | | 0 |
| | **Total** | | | | **0.00** |
| 5 | **Construction of New Administrative and other Structures** | | | | |
| 1 | Division office -1 No | Nos | 96.00 | | |
| 2 | Range Office - 2 Nos. | Nos. | 48.00 | | 0 |
| 3 | Library Unit - 3 Nos | Nos. | 48.00 | | 0 |
| 4 | Interpretation Centre - 2 Nos | Nos. | 48.00 | | 0 |
| 5 | Stores and Godowns- 5 Nos | Nos. | 5.00 | | 0 |
| 6 | Other bldgs-Vehicle Garage-10Nos. | Nos. | 4.00 | | 0 |
| 7 | Fire Watch Towers-60 M. high-4Nos | Nos. | 50.00 | | 0 |
| 8 | WL observation Towers - 9 Nos | Nos. | 2.00 | | 0 |
| | **Total** | | | | **0.00** |
| **6** | **Construction of New Residential Buildings** | | | | |
| 1 | Type - V (DCF/DFO) -1 No. | Nos. | 50.00 | | |
| 2 | Type - IV (ACF) - 2 Nos. | Nos. | 40.00 | | |
| 3 | Type-III - 3 Nos (RFO Qtr.) | Nos. | 33.00 | | 0 |

| | | | | | |
|---|---|---|---|---|---|
| 4 | Type-II -12 (Foresters Qtr.) | Nos. | 29.00 | | 0 |
| 5 | Type-I - 33 Nos. (FG Qtr.) | Nos | 23.00 | | 0 |
| | **Total** | | | | **0.00** |

| | | | | | |
|---|---|---|---|---|---|
| | **Habitat Development** | | | | |
| **7** | **Fodder and grass planting in blanks (Model-9 under MREGS)** | | | | |
| 1 | PPO/PYO | Ha. | 0.619 | | 0 |
| 2 | FYO | Ha. | 0.247 | | 0 |
| 3 | SYO | Ha. | 0.195 | 50 | 9.73 |
| 4 | TYO | Ha. | 0.168 | 100 | 16.79 |
| 5 | IV YO | Ha. | 0.161 | 150 | 24.09 |
| 6 | V YO | Ha. | 0.161 | | |
| | **Total** | | | | **50.62** |
| **8** | **Planting of evergreen and fruit tress along water courses and water holes.** | | | | |
| 1 | PPO/PYO | LS - 1 job | 30.000 | 2 | 60 |
| 2 | FYO | LS - 1 job | 20.000 | 2 | 40 |
| 3 | SYO | LS - 1 job | 15.000 | 2 | 30 |
| 4 | TYO | LS - 1 job | 10.000 | 2 | 20 |
| 5 | IV YO | LS - 1 job | 5.000 | 2 | 10 |
| 6 | V YO | LS - 1 job | 5.000 | 2 | 10 |
| | **Total** | | | | **170.00** |
| **2** | **Grand Total (7+8)** | | | | **220.62** |
| **9** | **Wildlife Protection - Infrastructure , vehicles, equipments etc.** | | | | |

| | | | | | |
|---|---|---|---|---|---|
| 1 | Construction of Protection Huts with Solar Powered Bore well - 10 Nos | Nos. | 8.00 | | 0 |
| 2 | Purchase of New Jeeps - 8 Nos.4WD jeeps | Nos. | 10.00 | | 0 |
| 3 | Purchase of New Mini bus -2 Nos. (15 seater) | Nos | 20.00 | | 0 |
| 4 | Construction of Check posts 9 Nos. | Nos. | 2.800 | | 0 |
| 5 | Patrolling Path creation | Kms | 0.200 | 50.00 | 10.00 |
| 6 | Setting up of wireless communication in 10 Protection hut, 8 check posts and 3 range HQs and 1 Division office = Total 22 stations | Nos. | 3.000 | | 0.00 |
| 7 | Purchase of walkie-Talkie handsets for Beat guards - 28 Nos.+2 Reserve sets | Nos. | 0.200 | | 0.00 |
| 8 | Purchase of walkie-Talkie wireless sets for jeeps - 8 Nos. | Nos. | 0.500 | | 0.00 |
| | **Total-** | | | | **10.00** |
| **10** | **Quick Response Team Accessories** | | | | |
| 1 | Purchase of Net Gun, Tranq. Guns, trap cages, treatment cages, Fibre sticks, | Lumpsum | 5.000 | | 0.00 |
| 2 | Purchase of Equip. Sets and accessories Teledarts, blowpipes, safety gears, drugs, ropes, ladder, Snake tongs & Hooks etc. | Lumpsum | 2.000 | | 0.00 |
| | **Total-** | | | | **0.00** |
| | **Total-( 9+10)** | | | | **10.00** |

| | | | | | |
|---|---|---|---|---|---|
| **11** | **Fire Protection Works Fire lines** | | | | |
| | **Recurring Costs** | | | | |

| | | | | | |
|---|---|---|---|---|---|
| **A** | **Cutting and burning of fire lines** | | | | |
| 1 | Cutting and burning of fire lines - 3 M wide Length-202 Km. @4.5 Mdays @Rs. 403 per day = 1814/Km | Kms | 0.018 | 202.00 | 3.66 |
| 2 | Cutting and burning of fire lines - 6 M wide Length-177 Km. = Rs. 2380?Km | Kms | 0.024 | 177.00 | 4.21 |
| | **Cutting and burning of fire lines-Total A** | | | | **7.88** |
| **B** | **General Fire Protection** | | | | |
| 1 | Hotshot Crew / Fire fighting squad -One squad of 6 persons per round for 10 rounds for period of 4 months with 26 working days per month. Wages @ Rs. 403 per day Total Mandays = 6240 | Mandays | 0.00403 | 6240 | 25.15 |
| 2 | Fire watchers for Beats - 3 Watcher per Beat for 28 Beats, with 26 working days per month for 4 months. Total -8736 | Mandays | 0.00403 | 8736 | 35.21 |
| 3 | Watchers for Watchtower -3 Fire watchers per tower for -9 Watch towers, 26 days per month for 4 month. Total Mandays- 2808 | Mandays | 0.00403 | 2808.00 | 11.32 |
| 4 | Blower maintenance -@Rs.1100 /Blower for 30 Blowers (1 Blower /beat) | Blowers. | 0.0110 | 30 | 0.33 |
| | **General Fire Protection Cost -B Total** | | | | **72.00** |
| | **Total Recurring Cost -A+B** | | | | **79.88** |
| | **Non recurring expenditure** | | | | 0 |
| **C** | **Procurement of Fire fighting Equipments** | | | | |
| 1 | Purchase of New Blowers 1 per beat - Total 30 nos. | Nos | 0.50 | | 0 |
| 2 | Purchase of Drone Camera-- 1 per Range for 3 Ranges | Nos. | 4.00 | 0 | 0 |

| | | | | | |
|---|---|---|---|---|---|
| 3 | Establishing New Fire Watch Towers @ 4 sites 45 m. height. | Nos. | 45.00 | 0 | 0 |
| 4 | Fire Extinguishing sets - Tanker 3000 lit. and pump sets -1 no. /range,3 Nos. | Nos. | 2.50 | 0 | 0 |
| 5 | First Aid Boxes | L.S. | 1.00 | 1 | 1.00 |
| 6 | Training of staff in Wildlife management techniques and awareness of other stake holders, villagers etc. | LS | 4.00 | 1 | 4.00 |
| | **Non-Recurring Cost - Total C** | | | | **5.00** |
| | **Grand Total =(Recurring + Non Recurring) (A+B+C)** | | | | **84.88** |

| | | | | | |
|---|---|---|---|---|---|
| **12** | **Eco-tourism Development and Village Eco-development** | | | | |
| 1 | Training of staff and villagers in ecotourism management- 1 course/year =5 Nos. of courses | Nos. | 3.00 | 1 | 3.00 |
| 2 | Training to stakeholders 1 course/year =5 Nos. of courses | Course | 5.00 | 1.00 | 5.00 |
| 3 | Village Eco-development -10 villages | Village | 50.00 | 2 | 100.00 |
| 4 | Establishing administrative infrastructure of Eco-tourism like website, online booking software, operation and maint. 5 packages | Packages | 10.00 | 1 | 10.00 |
| | **Grand Total** | | | **5.00** | **118.00** |
| **13** | **Research & Monitoring** | | | | |
| **A** | **Digitization** | | | | |
| 1 | GPS Instruments | 46+4=50 | 0.20 | 0 | 0.00 |
| 2 | Laptop for Ranges & ACFs | 3 | 0.50 | 0 | 0.00 |

| | | | | | |
|---|---|---|---|---|---|
| 3 | Display Board at Range offices | 5 | 0.30 | 0 | 0.00 |
| 4 | Display Board at Division Office | 1 | 0.40 | | 0.00 |
| **B** | **Software development** | | | | |
| 1 | MSTriPES & | 46 | 0 | | 0.00 |
| 2 | Digitised Information Flora, Fauna & Area | 1 Job | 0.50 | | 0.00 |
| 3 | Software formats /Google forms | 5 | 0.20 | | 0.00 |
| **C** | **Library books/Periodicals** | | | | 0.00 |
| 1 | Range office - Nos. 3 | 3 | 0.50 | | 0.00 |
| 2 | Division Office 1 | 1 | 0.50 | | 0.00 |
| | **Research & Monitoring -Total** | | | | **0.00** |
| **14** | **Training** | | | | |
| **A** | **Field Staff Training ( at local level)** | | | | 0.00 |
| 1 | Up to RFO 5 Trainings | 5 Nos | 1.00 | 5 | 5.00 |
| 2 | ACF & DCF - 3 Trainings | 3 | 0.50 | 3 | 1.50 |
| 3 | Stakeholders - 1 Training per year for all ranges- Total -5 Trainings | 5 | 2.00 | 1 | 2.00 |
| 4 | Capacity building - 1 Training per range per year - Total -15Trainings | 3 | 1.00 | 3 | 3.00 |
| B | **Kits & other M.S.** | | | | 0.00 |
| 1 | Investigation kits | 46 | 0.10 | 0 | 0.00 |
| 2 | Seal Mark | 50 | 0.01 | 0 | 0.00 |
| 3 | Binoculars | 50 | 0.10 | 0 | 0.00 |
| | **Trainings - Total** | | | | **11.50** |
| | **Research, Monitoring and Trainings - Grand Total** | | | | **11.50** |
| | **Great Grand Total** | | | **5.00** | **680.87** |

# Total Budget for 5 Years - FY 2022-23 to 2026-27

| Sr. Nos. | Work Particulars | Work Unit | Rate (Rs. In Lacs) | Grand Total | |
|---|---|---|---|---|---|
| | | | | Phy. | Fin. |
| **1** | **Demarcation of Boundaries** | | | | |
| 1 | Demarcation of outer boundaries 3 ranges, 10 rounds and 28 beats boundaries in Notified WLS with Type - I Pillars including fixing. Ave. length 9 km /beat @10 pillars /Km.@Rs. 4860 /pillar =Total Rs. 4.40 Lacs per beat | Beat Nos | 4.40 | 28.00 | 123.20 |
| 2 | 1/5 th Boundary Demarcation Programme with Type - I Pillars including fixing at 50 M. apart i.e. 20 Nos/per Km. cost of Class I pillar Rs. 9600 each = Total Rs.1.92 Lacs per Km. Total Length = 129.925 km | Kms | 1.920 | 129.9 | 249.46 |
| | **Total** | | | | **372.66** |
| **2** | **Repairs and Maintenance of Roads and Culverts, bridges** | | | | |
| 1 | Repairs and Maintenance of Roads - 9 Roads - 111.7 kms | Kms | 0.99 | 558.50 | 552.05 |
| 2 | Repairs and Maintenance of Culverts | LS | 10.00 | 5.00 | 50.00 |
| 3 | Repairs and Maintenance of bridges | LS | 10.00 | 5.00 | 50.00 |
| | **Total** | | | | **652.05** |
| 3 | **Repairs and Maintenance of Administrative Buildings** | | | | |
| 1 | Range Offices -1 Nos | Nos | 3.00 | 3. | 9.00 |
| 2 | Forest Rest House @ Kanhargaon | Nos. | 3.00 | 1 | 15.00 |

| | | | | | |
|---|---|---|---|---|---|
| | **Total** | | | | **24.00** |
| **4** | **Repairs and Maintenance of Residential & other Buildings** | | | | |
| 1 | Type-III - 2 Nos. (RFO Qtr.) | Nos. | 2.50 | 1 | 5.00 |
| 2 | Type-II -2 No. (Forester Qtr.) | Nos. | 2.00 | 4 | 8.00 |
| 3 | Type-I -9 Nos. (FG Qtr.) | Nos. | 1.00 | 9 | 9.00 |
| | **Total** | | | **14** | **22.00** |
| 5 | **Construction of New Administrative and other Structures** | | | | |
| 1 | Division office -1 No | Nos | 96.00 | | 96.00 |
| 2 | Range Office - 2 Nos. | Nos. | 48.00 | 2 | 96.00 |
| 3 | Library Unit - 3 Nos | Nos. | 48.00 | 3 | 144.00 |
| 4 | Interpretation Centre - 2 Nos | Nos. | 48.00 | 2 | 96.00 |
| 5 | Stores and Godowns- 5 Nos | Nos. | 5.00 | 5 | 25.00 |
| 6 | Other bldgs-Vehicle Garage-10 Nos. | Nos. | 4.00 | 10 | 40.00 |
| 7 | Fire Watch Towers-60 M. high-4 Nos | Nos. | 50.00 | 3 | 150.00 |
| 8 | WL observation Towers - 9 Nos | Nos. | 2.00 | 9 | 18.00 |
| | **Total** | | | | **665.00** |
| **6** | **Construction of New Residential Buildings** | | | | |
| 1 | Type - V (DCF/DFO) -1 No. | Nos. | 50.00 | | **50.00** |
| 2 | Type - IV (ACF) - 2 Nos. | Nos. | 40.00 | | **80.00** |
| 3 | Type-III - 3 Nos (RFO Qtr.) | Nos. | 33.00 | 3 | 99.00 |
| 4 | Type-II -12 (Foresters Qtr.) | Nos. | 29.00 | 12 | 348.00 |
| 5 | Type-I - 33 Nos. (FG Qtr.) | Nos | 23.00 | 33 | 759.00 |
| | **Total** | | | | **1336.00** |

| | | | | | |
|---|---|---|---|---|---|
| | **Habitat Development** | | | | |
| **7** | **Fodder and grass planting in blanks (Model-9 under MREGS)** | | | | |
| 1 | PPO/PYO | Ha. | 0.619 | 300 | 185.83 |
| 2 | FYO | Ha. | 0.247 | 300 | 74.21 |
| 3 | SYO | Ha. | 0.195 | 300 | 58.39 |
| 4 | TYO | Ha. | 0.168 | 250 | 41.98 |
| 5 | IV YO | Ha. | 0.161 | 150 | 24.09 |
| 6 | V YO | Ha. | 0.161 | 0 | 0.00 |
| | **Total** | | | | **384.50** |
| **8** | **Planting of evergreen and fruit tress along water courses and water holes.** | | | | |
| 1 | PPO/PYO | LS - 1 job | 30.000 | 7 | 210.00 |
| 2 | FYO | LS - 1 job | 20.000 | 7 | 140.00 |
| 3 | SYO | LS - 1 job | 15.000 | 7 | 105.00 |
| 4 | TYO | LS - 1 job | 10.000 | 7 | 70.00 |
| 5 | IV YO | LS - 1 job | 5.000 | 7 | 35.00 |
| 6 | V YO | LS - 1 job | 5.000 | 7 | 35.00 |
| | **Total** | | | | **595.00** |
| **2** | **Grand Total (7+8)** | | | | **979.50** |
| **9** | **Wildlife Protection - Infrastructure , vehicles, equipments etc.** | | | | |
| 1 | Construction of Protection Huts with Solar Powered Bore well - 10 Nos | Nos. | 8.00 | 10 | 80.00 |
| 2 | Purchase of New Jeeps - 8 Nos.4WD jeeps | Nos. | 10.00 | 8 | 80.00 |
| 3 | Purchase of New Mini bus -2 Nos. (15 | Nos | 20.00 | 2 | 40.00 |

| | | | | | |
|---|---|---|---|---|---|
| | seater) | | | | |
| 4 | Construction of Check posts 9 Nos. | Nos. | 2.800 | 9 | 25.20 |
| 5 | Patrolling Path creation | Kms | 0.200 | 250 | 50.00 |
| 6 | Setting up of wireless communication in 10 Protection hut, 8 check posts and 3 range HQs and 1 Division office = Total 22 stations | Nos. | 3.000 | 22 | 66.00 |
| 7 | Purchase of walkie-Talkie handsets for Beat guards - 28 Nos.+2 Reserve sets | Nos. | 0.200 | 30 | 6.00 |
| 8 | Purchase of walkie-Talkie wireless sets for jeeps - 8 Nos. | Nos. | 0.500 | 8 | 4.00 |
| | **Total-** | | | | **351.20** |
| **10** | **Quick Response Team Accessories** | | | | |
| 1 | Purchase of Net Gun, Tranq. Guns, trap cages, treatment cages, Fibre sticks, | Lumpsum | 5.000 | 3 | 15.00 |
| 2 | Purchase of Equip. Sets and accessories Teledarts, blowpipes, safety gears, drugs, ropes, ladder, Snake tongs & Hooks etc. | Lumpsum | 2.000 | 4 | 8.00 |
| | **Total-** | | | | **23.00** |
| | **Total-( 9+10)** | | | | **374.20** |

| | | | | | |
|---|---|---|---|---|---|
| **11** | **Fire Protection Works Fire lines** | | | | |
| | **Recurring Costs** | | | | |
| **A** | **Cutting and burning of fire lines** | | | | |
| 1 | Cutting and burning of fire lines - 3 M wide Length-202 Km. @4.5 Mdays @Rs. 403 per day = 1814/Km | Kms | 0.018 | 1010. | 18.32 |

| | | | | | |
|---|---|---|---|---|---|
| 2 | Cutting and burning of fire lines - 6 M wide Length-177 Km. = Rs. 2380?Km | Kms | 0.024 | 885 | 21.06 |
| | **Cutting and burning of fire lines-Total A** | | | | **39.38** |
| **B** | **General Fire Protection** | | | | |
| 1 | Hotshot Crew / Fire fighting squad -One squad of 6 persons per round for 10 rounds for period of 4 months with 26 working days per month. Wages @ Rs. 403 per day Total Mandays = 6240 | Mandays | 0.00403 | 31200 | 125.74 |
| 2 | Fire watchers for Beats - 3 Watcher per Beat for 28 Beats, with 26 working days per month for 4 months. Total Mandays- 8736 | Mandays | 0.00403 | 43680 | 176.03 |
| 3 | Watchers for Watchtower -3 Fire watchers per tower for -9 Watch towers, 26 days per month for 4 month. Total Mandays- 2808 | Mandays | 0.00403 | 14040 | 56.58 |
| 4 | Blower maintenance -@Rs.1100 per Blower for 30 Blowers (1 Blower /beat) | Blowers. | 0.0110 | 30.00 | 1.65 |
| | **General Fire Protection Cost -B Total** | | | **.** | **360.00** |
| | **Total Recurring Cost -A+B** | | | | **399.38** |
| | **Non recurring expenditure** | | | 0.00 | 0 |
| **C** | **Procurement of Fire fighting Equipments** | | | | |
| 1 | Purchase of New Blowers 1 per beat - Total 30 nos. | Nos | 0.50 | 30 | 15.00 |
| 2 | Purchase of Drone Camera-- 1 per Range for 3 Ranges | Nos. | 4.00 | 3 | 12.00 |
| 3 | Establishing New Fire Watch Towers @ 4 sites 45 m. height. | Nos. | 45.00 | 4 | 180.00 |
| 4 | Fire Extinguishing sets - Tanker 3000 lit. and pump sets -1no. /range, 3 Nos. | Nos. | 2.50 | 4.00 | 10 |

| | | | | | |
|---|---|---|---|---|---|
| 5 | First Aid Boxes | L.S. | 1.00 | 3 | 3.00 |
| 6 | Training of staff in Wildlife management techniques and awareness of other stake holders, villagers etc. | LS | 4.00 | 5 | 20.00 |
| | **Non-Recurring Cost - Total C** | | | | **240.00** |
| | **Grand Total =(Recurring + Non Recurring) (A+B+C)** | | | | **639.38** |

| | | | | | |
|---|---|---|---|---|---|
| **12** | **Eco-tourism Development and Village Eco-development** | | | | |
| 1 | Training of staff and villagers in ecotourism management- 1 course/year =5 Nos. of courses | Nos. | 3.00 | 5 | 15.00 |
| 2 | Training to stakeholders 1 course/year =5 Nos. of courses | Course | 5.00 | 5 | 25.00 |
| 3 | Village Eco-development -10 villages | Village | 50.00 | 10 | 500.00 |
| 4 | Establishing administrative infrastructure of Eco-tourism like website, online booking software, operation and maint. 5 packages | Packages | 10.00 | 5 | 50.00 |
| | **Grand Total** | | | **25.00** | **590.00** |
| **13** | **Research & Monitoring** | | | | |
| **A** | **Digitization** | | | | |
| 1 | GPS Instruments | 46+4=50 | 0.20 | 50 | 10.00 |
| 2 | Laptop for Ranges & ACFs | 3 | 0.50 | 3 | 1.50 |
| 3 | Display Board at Range offices | 5 | 0.30 | 5 | 1.50 |
| 4 | Display Board at Division Office | 1 | 0.40 | 1 | 0.40 |
| **B** | **Software development** | | | | |
| 1 | MSTriPES & | 46 | 0 | 0 | 0.00 |

| | | | | | |
|---|---|---|---|---|---|
| 2 | Digitised Information Flora, Fauna & Area | 1 Job | 0.50 | 1 | 0.50 |
| 3 | Software formats /Google forms | 5 | 0.20 | 5 | 1.00 |
| **C** | **Library books/Periodicals** | | | 0 | 0.00 |
| 1 | Range office - Nos. 3 | 3 | 0.50 | 3 | 1.50 |
| 2 | Division Office 1 | 1 | 0.50 | 1 | 0.50 |
| | **Research & Monitoring -Total** | | | | **16.90** |
| **14** | **Training** | | | | |
| **A** | **Field Staff Training ( at local level)** | | | 0 | 0.00 |
| 1 | Up to RFO 5 Trainings | 5 | 1.00 | 25 | 25.00 |
| 2 | ACF & DCF - 3 Trainings | 3 | 0.50 | 15 | 7.50 |
| 3 | Stakeholders - 1 Training per year for all ranges- Total -5 Trainings | 5 | 2.00 | 5 | 10.00 |
| 4 | Capacity building - 1 Training per range per year - Total -15Trainings | 3 | 1.00 | 15 | 15.00 |
| B | **Kits & other M.S.** | | | 0 | 0.00 |
| 1 | Investigation kits | 46 | 0.10 | 46 | 4.60 |
| 2 | Seal Mark | 50 | 0.01 | 50 | 0.50 |
| 3 | Binoculars | 50 | 0.10 | 50 | 5.00 |
| | **Trainings - Total** | | | | **67.60** |
| | **Research, Monitoring and Trainings - Grand Total** | | | | **84.50** |
| | **Great Grand Total** | | | **39.00** | **5739.29** |

# Annexure - XVIII

## Activity and Year wise Abstract of Budget for Management Plan Works in Kanhargaon WLS for 5 years period from 2022-23 to 2026-27

**(Rs. In Lacs)**

| Sr. No. | Management Plan Work Items | 2022-23 (1) | 2023-24 (2) | 2024-25 (3) | 2025-26 (4) | 2026-27 (5) | Grand Total |
|---|---|---|---|---|---|---|---|
| 1 | Demarcation of Boundaries | 68.50 | 66.40 | 65.81 | 69.47 | 102.46 | 372.66 |
| 2 | Repairs and Maint. of Roads, bridges, Culverts | 130.41 | 130.41 | 130.41 | 130.41 | 130.41 | 652.05 |
| 3 | Repairs and Maint. of Administrative Buildings | 6.00 | 6.00 | 6.00 | 3.00 | 3.00 | 24.00 |
| 4 | Repairs and Maint. of Residential & other Buildings | 9.50 | 3.00 | 9.50 | 0.00 | 0.00 | 22.00 |
| 5 | Construction of New Adm. & other Structures | 279.00 | 226.00 | 160.00 | 0.00 | 0.00 | 665.00 |
| 6 | Construction of New Residential Buildings | 600.00 | 437.00 | 230.00 | 69.00 | 0.00 | 1336.00 |
| 7 | Habitat Development Works | 177.92 | 184.05 | 169.90 | 227.02 | 220.62 | 979.50 |
| 8 | Wildlife Protection Works | 213.00 | 101.20 | 38.00 | 12.00 | 10.00 | 374.20 |
| 9 | Fire Protection Works | 153.88 | 137.88 | 133.88 | 128.88 | 84.88 | 639.38 |
| 10 | Eco-tourism Activities | 118.00 | 118.00 | 118.00 | 118.00 | 118.00 | 590.00 |
| 11 | Research & Monitoring works | 7.90 | 6.40 | 2.60 | 0.00 | 0.00 | 16.90 |
| 12 | Trainings Activities | 21.60 | 11.50 | 11.50 | 11.50 | 11.50 | 67.60 |
| | **Great Grand Total** | **1785.71** | **1427.84** | **1075.60** | **769.28** | **680.87** | **5739.29** |

# ANNEXURE -XVIII

## Part ( B )

**Statement of Estimated Expenditure up to 8th Thinning and over wood Removal and Bamboo Removal from FDCM Area.**

**NOTE: The gregarious flowering of bamboo crop is likely to set in the forthcoming years. In that case, the entire bamboo removal may be necessitated leading to revision of production cost and revenue there from.**

**Estimated Expenditure up to 8th Thinning and over wood Removal and Bamboo Removal for 1st Year FY 2022-23 and 2nd Year 2023-24**

**(Rs. in Lacks)**

| Sr. No. | Work Particulars | Physical Work Quantity | FY - 2022-23 (1) | | FY - 2023-24 (2) | |
|---|---|---|---|---|---|---|
| | | | Physical | Financial | Physical | Financial |
| 1 | 1st Thinning | Ha. | 339.34 | 92.93 | 219.3 | 57.39 |
| 2 | 2nd Thinning | Ha. | 257.13 | 40.32 | 180 | 38.66 |
| 3 | 3rd Thinning | Ha. | 40.00 | 7.83 | 64.7 | 6.7 |
| 4 | 6th Thinning | Ha. | 18.84 | 3.97 | 15 | 4.82 |
| 5 | 7th Thinning | Ha. | 286.76 | 64.23 | 308.41 | 103.08 |
| 6 | 8th Thinning | Ha. | 280.27 | 65.66 | 225.695 | 74.58 |
| | **Total** | | **1222.33** | **274.94** | **1013.11** | **285.23** |
| 1 | Long Bamboo | Ha | 1120 | **110.57** | 890 | **92.43** |
| 2 | Bamboo Bundles | Ha | | | | |
| | **Grand Total (14+15)** | | | **385.51** | | **377.66** |

**Estimated Expenditure up to 8th Thinning and over wood Removal and Bamboo Removal for 3rd Year FY 2024-25 and 4th Year 2025-26**

| Sr. No. | Work Particulars | Physical Work Quantity | FY - 2024-25 (3) | | FY - 2025-26 (4) | |
|---|---|---|---|---|---|---|
| | | | Physical | Financial | Physical | Financial |
| 1 | 1st Thinning | Ha. | 192.000 | 50.48 | 223.648 | 58.53 |
| 2 | 2nd Thinning | Ha. | 127.075 | 29.49 | 200.300 | 34.12 |
| 3 | 3rd Thinning | Ha. | 209.390 | 57.71 | 175.440 | 36.28 |
| 4 | 6th Thinning | Ha. | 63.000 | 15.88 | 123.000 | 39.36 |
| 5 | 7th Thinning | Ha. | 398.376 | 131.44 | 148.126 | 39.07 |
| 6 | 8th Thinning | Ha. | 201.929 | 63.90 | 254.987 | 85.49 |
| | **Total** | | **1191.770** | **348.90** | **1125.501** | **292.85** |
| 1 | Long Bamboo | Ha | 980 | **98.95** | 1120 | **110.57** |
| 2 | BambooBundles | Ha | | | | |
| | **Grand Total (14+15)** | | | **447.85** | | **403.42** |

**Estimated Expenditure up to 8th Thinning and over wood Removal and Bamboo Removal for 5th Year FY 2026-27 and Total 5 yeas**

**Work wise abstract of thinning of old teak plantations as an habitat restoration work**

**(Rs. in Lacks)**

| Sr. No. | Work Particulars | Physical Work Quantity | FY - 2026-27 (5) | | Grand Total for 5 Years | |
|---|---|---|---|---|---|---|
| | | | Physical | Financial | Physical | Financial |
| 1 | 1st Thinning | Ha. | **240.000** | **50.30** | 1214.283 | 309.63 |
| 2 | 2nd Thinning | Ha. | **334.820** | **57.04** | 1099.323 | 199.63 |
| 3 | 3rd Thinning | Ha. | **145.860** | **30.58** | 635.390 | 139.10 |
| 4 | 6th Thinning | Ha. | **0.000** | **0.00** | 219.835 | 64.03 |
| 5 | 7th Thinning | Ha. | **271.791** | **69.86** | 1413.465 | 407.68 |

| | | | | | | |
|---|---|---|---|---|---|---|
| 6 | 8th Thinning | Ha. | **327.352** | **84.16** | 1290.230 | 373.79 |
| | **Total** | | **1319.82** | **291.94** | **5872.53** | **1493.86** |
| 1 | Long Bamboo | Ha | **890** | **92.43** | 5000 | 504.95 |
| 2 | Bamboo Bundles | Ha | | | | |
| | **Grand Total (14+15)** | | | **384.37** | | **1998.81** |

**Year wise abstract of thinning of old teak plantations as an habitat restoration work**

| Management Plan Work Items | 2022-23 (1) | 2023-24 (2) | 2024-25 (3) | 2025-26 (4) | 2025-26 (5) | Grand Total |
|---|---|---|---|---|---|---|
| | Financial | Financial | Financial | Financial | Financial | Financial |
| (1) Thinning and Over wood Removal | 274.94 | 285.23 | 348.90 | 292.85 | 291.94 | 1493.86 |
| (2) Bamboo harvesting | 110.57 | 92.43 | 98.95 | 110.57 | 92.43 | 504.95 |
| Grand Total | 385.51 | 377.66 | 447.85 | 403.42 | 384.37 | 1998.81 |

**Annexure - XVIII**

**Part ( C )**

**Budget for Staff Salaries and Allowances of Proposed staffing for Management Plan Kanhargaon WLS 2022-23 to 2026-27**

**Explanatory Notes**

(1) Financial figures are in Rs. In Lacs.

(2) Average Salary as per VII PC considered

(3) Salaries will be required to be revised every year at the then prevailing rates in the forest dept.

(4) No escalation of cost is provided over the plan period and costs estimates are at present rates.

# Budget for 1st Year FY 2022-23

| Sr. No. | Management Plan Items | Item Nos. | Particulars of Posts | Work Item | Annual salary | FY - 2022-23 (1) | |
|---|---|---|---|---|---|---|---|
| | | | | | (Rs. In Lacs) | Physical | Financial |
| 1 | **Staff Salary -Annual Gross Salary including DA, HRA , Tribal , Con. etc.** | 1 | DCF | Salary | 15.00 | 1 | 15.00 |
| 2 | | 2 | ACF | Salary | 11.28 | 2 | 22.56 |
| 3 | | 3 | RFO (T& MS) | Salary | 8.16 | 5 | 40.8 |
| 4 | | 4 | Forester | Salary | 6.96 | 14 | 97.44 |
| 5 | | 5 | Forest Guard | Salary | 4.44 | 42 | 186.48 |
| 6 | | 6 | Watchmen | Salary | 2.64 | 4 | 10.56 |
| 7 | | 7 | O. Suptdt | Salary | | 1 | 0 |
| 8 | | 8 | Chief Acctt. | Salary | 5.88 | 1 | 5.88 |
| 9 | | 9 | Accountant | Salary | 5.88 | 6 | 35.28 |
| 10 | | 10 | Clerk | Salary | 3.36 | 7 | 23.52 |
| 11 | | 11 | Driver | Salary | 3.36 | 10 | 33.6 |
| 12 | | 12 | Surveyor | Salary | 6.96 | 1 | 6.96 |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 13 | | 13 | Naik | Salary | 2.25 | 1 | 2.25 |
| 14 | | 14 | Peon | Salary | 2.64 | 2 | 5.28 |
| 15 | | 15 | Data Entry Operator | Salary | 1.50 | 5 | 7.5 |
| 16 | | 16 | Office Asstt | Salary | 1.50 | 1 | 1.5 |
| 17 | | 17 | Cleaner | Salary | 3.00 | 3 | 9 |
| 18 | | 18 | Van Majur/ Beat Helper | Salary | 1.50 | 59 | 88.5 |
| | **Grand Total** | | | | | **165** | **577.11** |

# Budget for 2nd Year FY 2023-24

| Sr. No. | Management Plan / Items | Item Nos. | Particulars of Posts | Work Item | Annual Salary | FY - 2023-24 (2) | |
|---|---|---|---|---|---|---|---|
| | | | | | (Rs. In Lacs) | Physical | Financial |
| 1 | **Staff Salary -Annual Gross Salary including DA, HRA , Tribal , Con. etc.** | 1 | DCF | Salary | 15.00 | 1 | 15.00 |
| 2 | | 2 | ACF | Salary | 11.28 | 2 | 22.56 |
| 3 | | 3 | RFO (T& MS) | Salary | 8.16 | 5 | 40.8 |
| 4 | | 4 | Forester | Salary | 6.96 | 14 | 97.44 |
| 5 | | 5 | Forest Guard | Salary | 4.44 | 42 | 186.48 |
| 6 | | 6 | Watchmen | Salary | 2.64 | 4 | 10.56 |
| 7 | | 7 | O. Suptdt | Salary | | 1 | 0 |
| 8 | | 8 | Chief Acctt. | Salary | 5.88 | 1 | 5.88 |
| 9 | | 9 | Accountant | Salary | 5.88 | 6 | 35.28 |
| 10 | | 10 | Clerk | Salary | 3.36 | 7 | 23.52 |
| 11 | | 11 | Driver | Salary | 3.36 | 10 | 33.6 |
| 12 | | 12 | Surveyor | Salary | 6.96 | 1 | 6.96 |
| 13 | | 13 | Naik | Salary | 2.25 | 1 | 2.25 |
| 14 | | 14 | Peon | Salary | 2.64 | 2 | 5.28 |
| 15 | | 15 | Data Entry Operator | Salary | 1.50 | 5 | 7.5 |
| 16 | | 16 | Office Asstt | Salary | 1.50 | 1 | 1.5 |
| 17 | | 17 | Cleaner | Salary | 3.00 | 3 | 9 |
| 18 | | 18 | Van Majur/ Beat Helper | Salary | 1.50 | 59 | 88.5 |
| | **Grand Total** | | | | | **105.00** | **577.11** |

# Budget for 3rd Year FY 2024-25

| Sr. No. | Management Plan Items | Item Nos. | Particulars of Posts | Work Item | Annual salary | FY - 2024-25 (3) | |
|---|---|---|---|---|---|---|---|
| | | | | | (Rs. In Lacs) | Physical | Financial |
| 1 | **Staff Salary -Annual Gross Salary including DA, HRA , Tribal , Con. etc.** | 1 | DCF | Salary | 15.00 | 1 | 15.00 |
| 2 | | 2 | ACF | Salary | 11.28 | 2 | 22.56 |
| 3 | | 3 | RFO (T& MS) | Salary | 8.16 | 5 | 40.80 |
| 4 | | 4 | Forester | Salary | 6.96 | 14 | 97.44 |
| 5 | | 5 | Forest Guard | Salary | 4.44 | 42 | 186.48 |
| 6 | | 6 | Watchmen | Salary | 2.64 | 4 | 10.56 |
| 7 | | 7 | O. Suptdt | Salary | | 1 | 0.00 |
| 8 | | 8 | Chief Acctt. | Salary | 5.88 | 1 | 5.88 |
| 9 | | 9 | Accountant | Salary | 5.88 | 6 | 35.28 |
| 10 | | 10 | Clerk | Salary | 3.36 | 7 | 23.52 |
| 11 | | 11 | Driver | Salary | 3.36 | 10 | 33.60 |
| 12 | | 12 | Surveyor | Salary | 6.96 | 1 | 6.96 |
| 13 | | 13 | Naik | Salary | 2.25 | 1 | 2.25 |
| 14 | | 14 | Peon | Salary | 2.64 | 2 | 5.28 |
| 15 | | 15 | Data Entry Operator | Salary | 1.50 | 5 | 7.50 |
| 16 | | 16 | Office Asstt | Salary | 1.50 | 1 | 1.50 |
| 17 | | 17 | Cleaner | Salary | 3.00 | 3 | 9.00 |
| 18 | | 18 | Van Majur/ Beat Helper | Salary | 1.50 | 59 | 88.50 |
| | **Grand Total** | | | | | **105.000** | **577.11** |

# Budget for 4th Year FY 2025-26

| Sr. No. | Management Plan Items | Item Nos. | Particulars of Posts | Work Item | Annual salary | FY - 2025-26 (4) | |
|---|---|---|---|---|---|---|---|
| | | | | | (Rs. In Lacs) | Physical | Financial |
| 1 | **Staff Salary -Annual Gross Salary including DA, HRA , Tribal , Con. etc.** | 1 | DCF | Salary | 15.00 | 1 | 15.00 |
| 2 | | 2 | ACF | Salary | 11.28 | 2 | 22.56 |
| 3 | | 3 | RFO (T& MS) | Salary | 8.16 | 5 | 40.80 |
| 4 | | 4 | Forester | Salary | 6.96 | 14 | 97.44 |
| 5 | | 5 | Forest Guard | Salary | 4.44 | 42 | 186.48 |
| 6 | | 6 | Watchmen | Salary | 2.64 | 4 | 10.56 |
| 7 | | 7 | O. Suptdt | Salary | | 1 | 0.00 |
| 8 | | 8 | Chief Acctt. | Salary | 5.88 | 1 | 5.88 |
| 9 | | 9 | Accountant | Salary | 5.88 | 6 | 35.28 |
| 10 | | 10 | Clerk | Salary | 3.36 | 7 | 23.52 |
| 11 | | 11 | Driver | Salary | 3.36 | 10 | 33.60 |
| 12 | | 12 | Surveyor | Salary | 6.96 | 1 | 6.96 |
| 13 | | 13 | Naik | Salary | 2.25 | 1 | 2.25 |
| 14 | | 14 | Peon | Salary | 2.64 | 2 | 5.28 |
| 15 | | 15 | Data Entry Operator | Salary | 1.50 | 5 | 7.50 |
| 16 | | 16 | Office Asstt | Salary | 1.50 | 1 | 1.50 |
| 17 | | 17 | Cleaner | Salary | 3.00 | 3 | 9.00 |
| 18 | | 18 | Van Majur/ Beat Helper | Salary | 1.50 | 59 | 88.50 |
| | **Grand Total** | | | | | **105.000** | **577.11** |

# Budget for 5th Year FY 2026-27

| Sr. No. | Management Plan Items | Item Nos. | Particulars Names of Staff Posts | Work Item | Annual salary (Rs. In Lacs) | FY - 2025-26 (5) Physical | Financial |
|---|---|---|---|---|---|---|---|
| 1 | **Staff Salary -Annual Gross Salary including DA, HRA , Tribal , Con. etc.** | 1 | DCF | Salary | 15.00 | 1 | 15.00 |
| 2 | | 2 | ACF | Salary | 11.28 | 2 | 22.56 |
| 3 | | 3 | RFO (T& MS) | Salary | 8.16 | 5 | 40.80 |
| 4 | | 4 | Forester | Salary | 6.96 | 14 | 97.44 |
| 5 | | 5 | Forest Guard | Salary | 4.44 | 42 | 186.48 |
| 6 | | 6 | Watchmen | Salary | 2.64 | 4 | 10.56 |
| 7 | | 7 | O. Suptdt | Salary | | 1 | 0.00 |
| 8 | | 8 | Chief Acctt. | Salary | 5.88 | 1 | 5.88 |
| 9 | | 9 | Accountant | Salary | 5.88 | 6 | 35.28 |
| 10 | | 10 | Clerk | Salary | 3.36 | 7 | 23.52 |
| 11 | | 11 | Driver | Salary | 3.36 | 10 | 33.60 |
| 12 | | 12 | Surveyor | Salary | 6.96 | 1 | 6.96 |
| 13 | | 13 | Naik | Salary | 2.25 | 1 | 2.25 |
| 14 | | 14 | Peon | Salary | 2.64 | 2 | 5.28 |
| 15 | | 15 | Data Entry Operator | Salary | 1.50 | 5 | 7.50 |
| 16 | | 16 | Office Asstt | Salary | 1.50 | 1 | 1.50 |
| 17 | | 17 | Cleaner | Salary | 3.00 | 3 | 9.00 |
| 18 | | 18 | Van Majur/ Beat Helper | Salary | 1.50 | 59 | 88.50 |
| | **Grand Total** | | | | | **105.00** | **577.11** |

# Total Budget for 5 Years - FY 2022-23 to 2026-27

## Post wise Abstract of Staff Salary from FY 2022-23 to 2025-26

| Sr. No. | Management Plan Items | Item Nos. | Particulars of Posts | Work Item | Annual salary | Grand Total for 5 years | |
|---|---|---|---|---|---|---|---|
| | | | | | (Rs. In Lacs) | Physical | Financial |
| 1 | **Staff Salary -Annual Gross Salary including DA, HRA , Tribal , Con. etc.** | 1 | DCF | Salary | 15.00 | 1 | 75.00 |
| 2 | | 2 | ACF | Salary | 11.28 | 2 | 112.80 |
| 3 | | 3 | RFO (T& MS) | Salary | 8.16 | 5 | 204.00 |
| 4 | | 4 | Forester | Salary | 6.96 | 14 | 487.20 |
| 5 | | 5 | Forest Guard | Salary | 4.44 | 42 | 932.40 |
| 6 | | 6 | Watchmen | Salary | 2.64 | 4 | 52.80 |
| 7 | | 7 | O. Suptdt | Salary | | 1 | 0.00 |
| 8 | | 8 | Chief Acctt. | Salary | 5.88 | 1 | 29.40 |
| 9 | | 9 | Accountant | Salary | 5.88 | 6 | 176.40 |
| 10 | | 10 | Clerk | Salary | 3.36 | 7 | 117.60 |
| 11 | | 11 | Driver | Salary | 3.36 | 10 | 168.00 |
| 12 | | 12 | Surveyor | Salary | 6.96 | 1 | 34.80 |
| 13 | | 13 | Naik | Salary | 2.25 | 1 | 11.25 |
| 14 | | 14 | Peon | Salary | 2.64 | 2 | 26.40 |
| 15 | | 15 | Data Entry Operator | Salary | 1.50 | 5 | 37.50 |
| 16 | | 16 | Office Asstt | Salary | 1.50 | 1 | 7.50 |
| 17 | | 17 | Cleaner | Salary | 3.00 | 3 | 45.00 |
| 18 | | 18 | Van Majur/ | Salary | 1.50 | 59 | 442.50 |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| | | | Beat Helper | | | | |
| | **Grand Total** | | | | | **585** | **2885.55** |

## Year wise Abstract of Staff Salary from FY 2022-23 to 2025-26

| **Particulars** | **2022-23 (1)** | **2023-24 (2)** | **2024-25 (3)** | **2025-26 (4)** | **2025-26 (5)** | **Grand Total** (Rs. In Lacs) |
|---|---|---|---|---|---|---|
| | **Financial** | **Financial** | **Financial** | **Financial** | **Financial** | **Financial** |
| **Annual Staff salary & Allowances** | **577.11** | **577.11** | **577.11** | **577.11** | **577.11** | 2885.55 |

**Abstract of Year wise Budget Cost of Wildlife Sanctuary Management Works including Habitat Restoration and Staff Salary from 5 Years Plan Period from FY 2022-23 to 2026-27.**

| Management Plan Work Items | 2022-23 (1) | 2023-24 (2) | 2024-25 (3) | 2025-26 (4) | 2026-27 (5) | Grand Total |
|---|---|---|---|---|---|---|
| **Cost Head - Wildlife Sanctuary Management Works Cost** | | | | | | |
| 1) Demarcation of Boundaries | 68.50 | 66.4 | 65.81 | 69.47 | 102.46 | 372.66 |
| 2) Repairs and Maint. of Roads, bridges, Culverts | 130.41 | 130.41 | 130.41 | 130.41 | 130.41 | 652.05 |
| 3) Repairs and Maint. of Administrative Buildings | 6.00 | 6.00 | 6.00 | 3.00 | 3.00 | 24.00 |
| 4) Repairs and Maint. of Residential & other Buildings | 9.50 | 3.00 | 9.50 | 0.00 | 0.00 | 22.00 |
| 5) Construction of New Adm. & other Structures | 279.00 | 226.00 | 160.00 | 0.00 | 0.00 | 665.00 |
| 6) Construction of New Residential Buildings | 600.00 | 437.00 | 230.00 | 69.00 | 0.00 | 1336.00 |
| 7) Habitat Development Works | 177.92 | 184.05 | 169.90 | 227.02 | 220.62 | 979.50 |
| 8) Wildlife Protection Works | 213.00 | 101.20 | 38.00 | 12.00 | 10.00 | 374.20 |
| 9) Fire Protection Works | 153.88 | 137.88 | 133.88 | 128.88 | 84.88 | 639.38 |
| 10) Eco-tourism Activities | 118.00 | 118.00 | 118.00 | 118.00 | 118.00 | 590.00 |
| 11) Research & Monitoring works | 7.90 | 6.40 | 2.60 | 0.00 | 0.00 | 16.90 |
| 12) Trainings Activities | 21.60 | 11.50 | 11.50 | 11.5. | 11.50 | 67.60 |
| Grand Total | 1785.71 | 1427.84 | 1075.60 | 769.28 | 680.87 | 5739.29 |
| **Cost Head - Habitat Restoration Works** | | | | | | |
| 13)Thinning and Over wood Removal | 274.94 | 285.23 | 348.90 | 292.85 | 291.94 | 1493.86 |
| 14) Bamboo harvesting | 110.57 | 92.43 | 98.95 | 110.57 | 92.43 | 504.95 |

| | | | | | | |
|---|---|---|---|---|---|---|
| Grand Total | 385.51 | 377.66 | 447.85 | 403.42 | 384.37 | 1998.81 |
| **Cost Head - Salary** | | | | | | |
| Staff salary & All. | 577.11 | 577.11 | 577.11 | 577.11 | 577.11 | 2885.55 |
| Grand Total | 2748.33 | **2382.61** | **2100. 56** | **1749.81** | **1642.35** | **10623.65** |

# ANNEXURE - XVIII

## Part ( D)

**Statement of Estimated Yield of forest produce and Anticipated Revenue up to 8th Thinning and Over wood Removal and Bamboo Removal from FDCM Area from FY 2022-23 to 20226-27.**

**(NOTE: The gregarious flowering of bamboo crop is likely to set in the forthcoming years. In that case, the entire bamboo removal may be necessitated leading to revision of production cost and revenue there from.)**

## Estimated Yield of forest produce and Anticipated Revenue for 1st Year FY 2022-23

| Sr. No. | Thinning Operation | Thinning Produce | Unit of Measurement | Rate / Unit(Rs.) | FY - 2022-23 (1) | |
|---|---|---|---|---|---|---|
| | | | | | Physical | Financial |
| 1 | 1st Thinning | Teak Timber | CuM | 0 | 0 | 0.00 |
| | | NT Timber | CuM | 0 | 0 | 0.00 |
| | | Teak Poles | Nos. | 140 | 56817 | 79.54 |
| | | NT Poles | Nos. | 74 | 10653 | 7.88 |
| | | T FW | No. of Stacks | 5000 | 1065 | 53.25 |
| | | NT FW | No. of Stacks | 2100 | 1065 | 22.37 |
| | Total | | | | | **163.04** |
| 2 | 2nd Thinning | Teak Timber | CuM | 23000 | 47.341 | 10.89 |
| | | NT Timber | CuM | 6000 | 71.011 | 4.26 |
| | | Teak Poles | Nos. | 160 | 14203 | 22.72 |
| | | NT Poles | Nos. | 81 | 8522 | 6.90 |
| | | T FW | No. of Stacks | 5000 | 474 | 23.70 |
| | | NT FW | No. of Stacks | 2000 | 947 | 18.94 |
| | **Total** | | | | | **87.42** |
| 3 | 3rd Thinning | Teak Timber | CuM | 23000 | 8.00 | 1.84 |
| | | NT Timber | CuM | 5500 | 12.00 | 0.66 |
| | | Teak Poles | Nos. | 150 | 2400 | 3.60 |
| | | NT Poles | Nos. | 80 | 2000 | 1.60 |
| | | T FW | No. of Stacks | 4500 | 120 | 5.40 |

| | | | | | | |
|---|---|---|---|---|---|---|
| | | NT FW | No. of Stacks | 1600 | 160 | 2.56 |
| | **Total** | | | | | **15.66** |
| 4 | 6th Thinning | Teak Timber | CuM | 24000 | 9.5 | 2.280 |
| | | NT Timber | CuM | 6000 | 9.418 | 0.565 |
| | | Teak Poles | Nos. | 170 | 1130 | 2 |
| | | NT Poles | Nos. | 100 | 1318 | 1 |
| | | T FW | No. of Stacks | 5000 | 37 | 2 |
| | | NT FW | No. of Stacks | 2100 | 76 | 2 |
| | **Total** | | | | | **9.53** |
| 5 | 7th Thinning | Teak Timber | CuM | 24000 | 172.057 | 41.29 |
| | | NT Timber | CuM | 6000 | 171.748 | 10.30 |
| | | Teak Poles | Nos. | 200 | 17206 | 34.41 |
| | | NT Poles | Nos. | 132 | 20074 | 26.50 |
| | | T FW | No. of Stacks | 5200 | 860 | 44.72 |
| | | NT FW | No. of Stacks | 2200 | 1147 | 25.23 |
| | **Total** | | | | | **182.46** |
| 6 | 8th Thinning | Teak Timber | CuM | 24000 | 196.00 | 47.04 |
| | | NT Timber | CuM | 6000 | 140.156 | 8.41 |
| | | Teak Poles | Nos. | 200 | 16816 | 33.63 |
| | | NT Poles | Nos. | 132 | 22421 | 29.60 |
| | | T FW | No. of Stacks | 5200 | 841 | 43.73 |
| | | NT FW | No. of Stacks | 2200 | 1121 | 24.66 |
| | **Total** | | | | | **187.07** |
| | **Grand Total** | **Thinning &Over wood** | | | | **645.18** |
| **7** | Bamboo Removal | long Bamboo | Nos. | 26 | 1288000 | **334.88** |
| | | B.Bundles | Nos. | 95 | 224000 | **212.80** |
| | **Grand Total** | **Bamboo** | | | | **547.68** |
| | **Great Grand Total** | | | | | **1192.86** |

## Estimated Yield of forest produce and Anticipated Revenue for 2nd Year FY 2023-24

| Sr. No. | Thinning Operation | Thinning Produce | Unit of Measurement | Rate / Unit (Rs.) | FY - 2023-24 (2) | |
|---|---|---|---|---|---|---|
| | | | | | Physical | Financial |
| 1 | 1st Thinning | Teak Timber | CuM | 0 | 0 | 0.00 |
| | | NT Timber | CuM | 0 | 0 | 0.00 |
| | | Teak Poles | Nos. | 140 | 35088 | 49.12 |
| | | NT Poles | Nos. | 74 | 6579 | 4.87 |
| | | T FW | No. of Stacks | 5000 | 658 | 32.90 |
| | | NT FW | No. of Stacks | 2100 | 658 | 13.82 |
| | Total | | | | | **100.71** |
| 2 | 2nd Thinning | Teak Timber | CuM | 23000 | 54.00 | 12.42 |
| | | NT Timber | CuM | 6000 | 90.00 | 5.40 |
| | | Teak Poles | Nos. | 160 | 18000 | 28.80 |
| | | NT Poles | Nos. | 81 | 755 | 0.61 |
| | | T FW | No. of Stacks | 5000 | 60 | 3.00 |
| | | NT FW | No. of Stacks | 2000 | 48 | 0.96 |
| | **Total** | | | | | **51.19** |
| 3 | 3rd Thinning | Teak Timber | CuM | 23000 | 5.605 | 1.29 |
| | | NT Timber | CuM | 5500 | 14.012 | 0.77 |
| | | Teak Poles | Nos. | 150 | 2802 | 4.20 |
| | | NT Poles | Nos. | 80 | 1401 | 1.12 |
| | | T FW | No. of Stacks | 4500 | 84 | 3.78 |
| | | NT FW | No. of Stacks | 1600 | 112 | 1.79 |
| | **Total** | | | | | **12.96** |
| 4 | 6th Thinning | Teak Timber | CuM | 24000 | 9.00 | 2.16 |
| | | NT Timber | CuM | 6000 | 9.00 | 0.54 |

| | | | | | | |
|---|---|---|---|---|---|---|
| | | Teak Poles | Nos. | 170 | 1650 | 2.81 |
| | | NT Poles | Nos. | 100 | 1875 | 1.88 |
| | | T FW | No. of Stacks | 5000 | 30 | 1.50 |
| | | NT FW | No. of Stacks | 2100 | 60 | 1.26 |
| | **Total** | | | | | **10.14** |
| 5 | 7th Thinning | Teak Timber | CuM | 24000 | 215.839 | 51.80 |
| | | NT Timber | CuM | 6000 | 215.836 | 12.95 |
| | | Teak Poles | Nos. | 200 | 33998 | 68.00 |
| | | NT Poles | Nos. | 132 | 38543 | 50.88 |
| | | T FW | No. of Stacks | 5200 | 925 | 48.10 |
| | | NT FW | No. of Stacks | 2200 | 1233 | 27.13 |
| | **Total** | | | | | **258.85** |
| 6 | 8th Thinning | Teak Timber | CuM | 24000 | 156.164 | 37.48 |
| | | NT Timber | CuM | 6000 | 155.068 | 9.30 |
| | | Teak Poles | Nos. | 200 | 24540 | 49.08 |
| | | NT Poles | Nos. | 132 | 27886 | 36.81 |
| | | T FW | No. of Stacks | 5200 | 679 | 35.31 |
| | | NT FW | No. of Stacks | 2200 | 892 | 19.62 |
| | **Total** | | | | | **187.60** |
| | **Grand Total** | **Thinning &Over wood** | | | **0.00** | **621.45** |
| **7** | Bamboo Removal | long Bamboo | Nos. | 26 | 1023500 | **266.11** |
| | | B.Bundles | Nos. | 95 | 17800 | **16.91** |
| | **Grand Total** | **Bamboo** | | | | **283.02** |
| | **Great Grand Total** | | | | | **904.47** |

## Estimated Yield of forest produce and Anticipated Revenue for 3rd Year FY 2024-25

| Sr. No. | Thinning Operation | Thinning Produce | Unit of Measurement | Rate / Unit (Rs.) | FY - 2024-25 (3) | |
|---|---|---|---|---|---|---|
| | | | | | Physical | Financial |
| 1 | 1st Thinning | Teak Timber | CuM | 0 | 0 | 0.00 |
| | | NT Timber | CuM | 0 | 0 | 0.00 |
| | | Teak Poles | Nos. | 140 | 30864 | 43.21 |
| | | NT Poles | Nos. | 74 | 5787 | 4.28 |
| | | T FW | No. of Stacks | 5000 | 579 | 28.95 |
| | | NT FW | No. of Stacks | 2100 | 579 | 12.16 |
| | Total | | | | | **88.60** |
| 2 | 2nd Thinning | Teak Timber | CuM | 23000 | 37.295 | 8.58 |
| | | NT Timber | CuM | 6000 | 46.591 | 2.80 |
| | | Teak Poles | Nos. | 160 | 8318 | 13.31 |
| | | NT Poles | Nos. | 81 | 6297 | 5.10 |
| | | T FW | No. of Stacks | 5000 | 800 | 40.00 |
| | | NT FW | No. of Stacks | 2000 | 48 | 0.96 |
| | **Total** | | | | | **70.74** |
| 3 | 3rd Thinning | Teak Timber | CuM | 23000 | 53.348 | 12.27 |
| | | NT Timber | CuM | 5500 | 80.02 | 4.40 |
| | | Teak Poles | Nos. | 150 | 31839 | 47.76 |
| | | NT Poles | Nos. | 80 | 13337 | 10.67 |
| | | T FW | No. of Stacks | 4500 | 800 | 36.00 |
| | | NT FW | No. of Stacks | 1600 | 1066 | 17.06 |
| | **Total** | | | | | **128.16** |
| 4 | 6th | Teak Timber | CuM | 24000 | 31.5 | 7.56 |

| | | | | | | |
|---|---|---|---|---|---|---|
| | Thinning | NT Timber | CuM | 6000 | 32.5 | 1.95 |
| | | Teak Poles | Nos. | 170 | 5670 | 9.64 |
| | | NT Poles | Nos. | 100 | 5040 | 5.04 |
| | | T FW | No. of Stacks | 5000 | 126 | 6.30 |
| | | NT FW | No. of Stacks | 2100 | 152 | 3.19 |
| | **Total** | | | | | **33.68** |
| 5 | 7th Thinning | Teak Timber | CuM | 24000 | 239.026 | 57.37 |
| | | NT Timber | CuM | 6000 | 159.350 | 9.56 |
| | | Teak Poles | Nos. | 200 | 43821 | 87.64 |
| | | NT Poles | Nos. | 132 | 49797 | 65.73 |
| | | T FW | No. of Stacks | 5200 | 1195 | 62.14 |
| | | NT FW | No. of Stacks | 2200 | 1594 | 35.07 |
| | **Total** | | | | | **317.51** |
| 6 | 8th Thinning | Teak Timber | CuM | 24000 | 167.316 | 40.16 |
| | | NT Timber | CuM | 6000 | 166.981 | 10.02 |
| | | Teak Poles | Nos. | 200 | 21512 | 43.02 |
| | | NT Poles | Nos. | 132 | 19122 | 25.24 |
| | | T FW | No. of Stacks | 5200 | 717 | 37.28 |
| | | NT FW | No. of Stacks | 2200 | 539 | 11.86 |
| | **Total** | | | | | **167.58** |
| | **Grand Total** | **Thinning &Over wood** | | | **0.00** | **806.27** |
| **7** | Bamboo Removal | long Bamboo | Nos. | 26 | 1127000 | **293.02** |
| | | B.Bundles | Nos. | 95 | 196000 | **186.20** |
| | **Grand Total** | **Bamboo** | | | | **479.22** |
| | **Great Grand Total** | | | | | **1285.49** |

## Estimated Yield of forest produce and Anticipated Revenue for 4th Year FY 2025-26

| Sr. No. | Thinning Operation | Thinning Produce | Unit of Measurement | Rate / Unit (Rs.) | FY - 2025-26 (4) | |
|---|---|---|---|---|---|---|
| | | | | | Physical | Financial |
| 1 | 1st Thinning | Teak Timber | CuM | 0 | 0 | 0.00 |
| | | NT Timber | CuM | 0 | 0 | 0.00 |
| | | Teak Poles | Nos. | 140 | 35784 | 50.10 |
| | | NT Poles | Nos. | 74 | 6709 | 4.96 |
| | | T FW | No. of Stacks | 5000 | 671 | 33.55 |
| | | NT FW | No. of Stacks | 2100 | 671 | 14.09 |
| | Total | | | | | **102.70** |
| 2 | 2nd Thinning | Teak Timber | CuM | 23000 | 40.060 | 9.21 |
| | | NT Timber | CuM | 6000 | 60.029 | 3.60 |
| | | Teak Poles | Nos. | 160 | 12018 | 19.23 |
| | | NT Poles | Nos. | 81 | 7211 | 5.84 |
| | | T FW | No. of Stacks | 5000 | 401 | 20.05 |
| | | NT FW | No. of Stacks | 2000 | 801 | 16.02 |
| | **Total** | | | | | **73.96** |
| 3 | 3rd Thinning | Teak Timber | CuM | 23000 | 36.045 | 8.29 |
| | | NT Timber | CuM | 5500 | 54.068 | 2.97 |
| | | Teak Poles | Nos. | 150 | 10813 | 16.22 |
| | | NT Poles | Nos. | 80 | 9011 | 7.21 |
| | | T FW | No. of Stacks | 4500 | 541 | 24.35 |
| | | NT FW | No. of Stacks | 1600 | 720 | 11.52 |
| | **Total** | | | | | **70.56** |
| 4 | 6th | Teak Timber | CuM | 24000 | 73.8 | 17.71 |

| | | | | | | |
|---|---|---|---|---|---|---|
| | Thinning | NT Timber | CuM | 6000 | 61.5 | 3.69 |
| | | Teak Poles | Nos. | 170 | 13530 | 23.00 |
| | | NT Poles | Nos. | 100 | 15375 | 15.38 |
| | | T FW | No. of Stacks | 5000 | 246 | 12.30 |
| | | NT FW | No. of Stacks | 2100 | 492 | 10.33 |
| | **Total** | | | | | **82.41** |
| 5 | 7th Thinning | Teak Timber | CuM | 24000 | 70.822 | 17.00 |
| | | NT Timber | CuM | 6000 | 59.180 | 3.55 |
| | | Teak Poles | Nos. | 200 | 12984 | 25.97 |
| | | NT Poles | Nos. | 132 | 14775 | 19.50 |
| | | T FW | No. of Stacks | 5200 | 354 | 18.41 |
| | | NT FW | No. of Stacks | 2200 | 772 | 16.98 |
| | **Total** | | | | | **101.41** |
| 6 | 8th Thinning | Teak Timber | CuM | 24000 | 154.954 | 37.19 |
| | | NT Timber | CuM | 6000 | 129.128 | 7.75 |
| | | Teak Poles | Nos. | 200 | 28408 | 56.82 |
| | | NT Poles | Nos. | 132 | 32282 | 42.61 |
| | | T FW | No. of Stacks | 5200 | 774 | 40.25 |
| | | NT FW | No. of Stacks | 2200 | 1033 | 22.73 |
| | **Total** | | | | | **207.34** |
| | **Grand Total** | **Thinning &Over wood** | | | **0.00** | **638.38** |
| **7** | Bamboo Removal | long Bamboo | Nos. | 26 | 1288000 | **334.88** |
| | | B.Bundles | Nos. | 95 | 224000 | **212.80** |
| | **Grand Total** | **Bamboo** | | | | **547.68** |
| | **Great Grand Total** | | | | | **1186.06** |

## Estimated Yield of forest produce and Anticipated Revenue for 5th Year FY 2026-27

| Sr. No. | Thinning Operation | Thinning Produce | Unit of Measurement | Rate / Unit (Rs.) | FY - 2026-27 (5) | |
|---|---|---|---|---|---|---|
| | | | | | Physical | Financial |
| 1 | 1st Thinning | Teak Timber | CuM | 0 | 0 | 0.00 |
| | | NT Timber | CuM | 0 | 0 | 0.00 |
| | | Teak Poles | Nos. | 140 | 38400 | 53.76 |
| | | NT Poles | Nos. | 74 | 7200 | 5.33 |
| | | T FW | No. of Stacks | 5000 | 720 | 36.00 |
| | | NT FW | No. of Stacks | 2100 | 720 | 15.12 |
| | Total | | | | | **110.21** |
| 2 | 2nd Thinning | Teak Timber | CuM | 23000 | 66.964 | 15.40 |
| | | NT Timber | CuM | 6000 | 100.446 | 6.03 |
| | | Teak Poles | Nos. | 160 | 20089 | 32.14 |
| | | NT Poles | Nos. | 81 | 12054 | 9.76 |
| | | T FW | No. of Stacks | 5000 | 670 | 33.50 |
| | | NT FW | No. of Stacks | 2000 | 1339 | 26.78 |
| | **Total** | | | | | **123.61** |
| 3 | 3rd Thinning | Teak Timber | CuM | 23000 | 34.235 | 7.87 |
| | | NT Timber | CuM | 5500 | 46.852 | 2.58 |
| | | Teak Poles | Nos. | 150 | 9371 | 14.06 |
| | | NT Poles | Nos. | 80 | 7803 | 6.24 |
| | | T FW | No. of Stacks | 4500 | 469 | 21.11 |
| | | NT FW | No. of Stacks | 1600 | 624 | 9.98 |
| | **Total** | | | | | **61.84** |
| 4 | 6th | Teak Timber | CuM | 24000 | 0 | 0.00 |

| | | | | | | |
|---|---|---|---|---|---|---|
| | Thinning | NT Timber | CuM | 6000 | 0 | 0.00 |
| | | Teak Poles | Nos. | 170 | 0 | 0.00 |
| | | NT Poles | Nos. | 100 | 0 | 0.00 |
| | | T FW | No. of Stacks | 5000 | 0 | 0.00 |
| | | NT FW | No. of Stacks | 2100 | 0 | 0.00 |
| | **Total** | | | | | **0.00** |
| 5 | 7th Thinning | Teak Timber | CuM | 24000 | 190.254 | 45.66 |
| | | NT Timber | CuM | 6000 | 190.100 | 11.41 |
| | | Teak Poles | Nos. | 200 | 19025 | 38.05 |
| | | NT Poles | Nos. | 132 | 24461 | 32.29 |
| | | T FW | No. of Stacks | 5200 | 815 | 42.38 |
| | | NT FW | No. of Stacks | 2200 | 1087 | 23.91 |
| | **Total** | | | | | **193.70** |
| 6 | 8th Thinning | Teak Timber | CuM | 24000 | 229.146 | 55.00 |
| | | NT Timber | CuM | 6000 | 223.98 | 13.44 |
| | | Teak Poles | Nos. | 200 | 22914 | 45.83 |
| | | NT Poles | Nos. | 132 | 29462 | 38.89 |
| | | T FW | No. of Stacks | 5200 | 982 | 51.06 |
| | | NT FW | No. of Stacks | 2200 | 1309 | 28.80 |
| | **Total** | | | | | **233.01** |
| | **Grand Total** | **Thinning &Over wood** | | | **0.00** | **722.37** |
| **7** | Bamboo Removal | long Bamboo | Nos. | 26 | 1023500 | **266.11** |
| | | B.Bundles | Nos. | 95 | 178000 | **169.10** |
| | **Grand Total** | **Bamboo** | | | | **435.21** |
| | **Great Grand Total** | | | | | **1157.58** |

## Estimated Yield of forest produce and Anticipated Revenue for 5 Years - FY 2022-23 to 2026-27

| Sr. No. | Thinning Operation | Thinning Produce | Unit of Measurement | Rate / Unit (Rs.) | Grand Total for 5 Years | |
|---|---|---|---|---|---|---|
| | | | | | Physical | Financial |
| 1 | 1st Thinning | Teak Timber | CuM | 0 | 0 | 0.00 |
| | | NT Timber | CuM | 0 | 0 | 0.00 |
| | | Teak Poles | Nos. | 140 | 196953 | 275.73 |
| | | NT Poles | Nos. | 74 | 36928 | 27.33 |
| | | T FW | No. of Stacks | 5000 | 3693 | 184.65 |
| | | NT FW | No. of Stacks | 2100 | 3693 | 77.55 |
| | Total | | | | 0 | **565.26** |
| 2 | 2nd Thinning | Teak Timber | CuM | 23000 | 245.660 | 56.50 |
| | | NT Timber | CuM | 6000 | 368.077 | 22.08 |
| | | Teak Poles | Nos. | 160 | 72628 | 116.20 |
| | | NT Poles | Nos. | 81 | 34839 | 28.22 |
| | | T FW | No. of Stacks | 5000 | 2405 | 120.25 |
| | | NT FW | No. of Stacks | 2000 | 3183 | 63.66 |
| | **Total** | | | | | **406.92** |
| 3 | 3rd Thinning | Teak Timber | CuM | 23000 | 137.233 | 31.56 |
| | | NT Timber | CuM | 5500 | 206.952 | 11.38 |
| | | Teak Poles | Nos. | 150 | 57225 | 85.84 |
| | | NT Poles | Nos. | 80 | 33552 | 26.84 |
| | | T FW | No. of Stacks | 4500 | 2014 | 90.63 |
| | | NT FW | No. of Stacks | 1600 | 2682 | 42.91 |
| | **Total** | | | | | **289.17** |

| | | | | | | |
|---|---|---|---|---|---|---|
| 4 | 6th Thinning | Teak Timber | CuM | 24000 | 123.800 | 29.71 |
| | | NT Timber | CuM | 6000 | 112.418 | 6.75 |
| | | Teak Poles | Nos. | 170 | 21980 | 37.37 |
| | | NT Poles | Nos. | 100 | 23608 | 23.61 |
| | | T FW | No. of Stacks | 5000 | 439 | 21.95 |
| | | NT FW | No. of Stacks | 2100 | 780 | 16.38 |
| | **Total** | | | | | **135.76** |
| 5 | 7th Thinning | Teak Timber | CuM | 24000 | 887.998 | 213.12 |
| | | NT Timber | CuM | 6000 | 796.214 | 47.77 |
| | | Teak Poles | Nos. | 200 | 127034 | 254.07 |
| | | NT Poles | Nos. | 132 | 147650 | 194.90 |
| | | T FW | No. of Stacks | 5200 | 4149 | 215.75 |
| | | NT FW | No. of Stacks | 2200 | 5833 | 128.33 |
| | **Total** | | | | | **1053.93** |
| 6 | 8th Thinning | Teak Timber | CuM | 24000 | 903.58 | 216.86 |
| | | NT Timber | CuM | 6000 | 815.313 | 48.92 |
| | | Teak Poles | Nos. | 200 | 114190 | 228.38 |
| | | NT Poles | Nos. | 132 | 131173 | 173.15 |
| | | T FW | No. of Stacks | 5200 | 3993 | 207.64 |
| | | NT FW | No. of Stacks | 2200 | 4894 | 107.67 |
| | **Total** | | | | | **982.61** |
| | **Grand Total** | **Thinning &Over wood** | | | **0.00** | **3433.66** |
| **7** | Bamboo Removal | long Bamboo | Nos. | 26 | **5750000** | **1495.00** |
| | | B.Bundles | Nos. | 95 | **839800** | **797.81** |
| | **Grand Total** | **Bamboo** | | | | **2292.81** |
| | **Great Grand Total** | | | | | **5726.47** |

**Year wise Abstract of Anticipated Revenue from Teak plantation thinning, over wood and Bamboo Removal for 5 Years - FY 2022-23 to 2026-27**

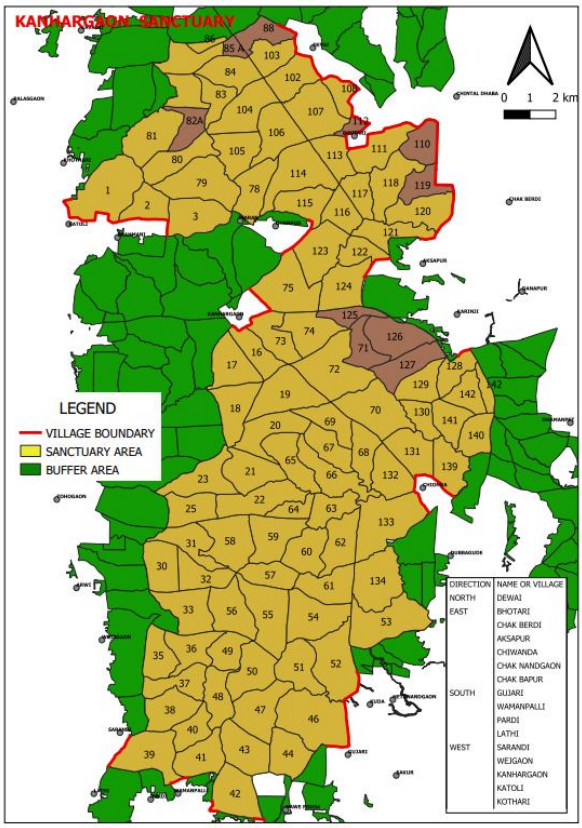
**(NOTE: The gregarious flowering of bamboo crop is likely to set in the forthcoming years. In that case, the entire bamboo removal may be necessitated leading to revision of production cost and revenue there from.)**

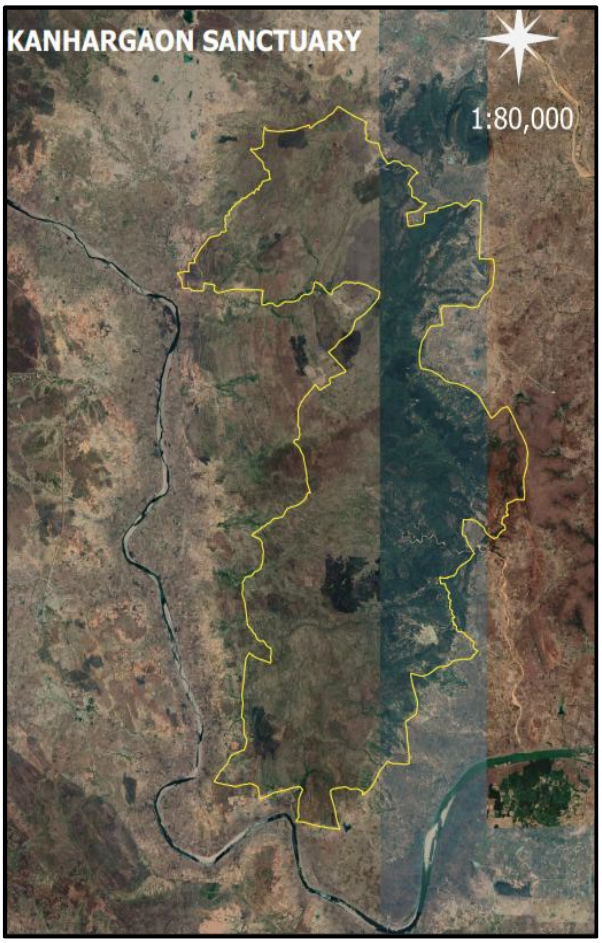
| Sr. No. | Thinning Operation | 2022-23 (1) | 2023-24 (2) | 2024-25 (3) | 2025-26 (4) | 2026-27 (5) | Grand Total |
|---|---|---|---|---|---|---|---|
| 1 | 1st Thinning | **163.04** | **100.71** | **88.60** | **102.70** | **110.21** | **565.26** |
| 2 | 2nd Thinning | **87.42** | **51.19** | **70.74** | **73.96** | **123.61** | **406.92** |
| 3 | 3rd Thinning | **15.66** | **12.96** | **128.16** | **70.56** | **61.84** | **289.17** |
| 4 | 6th Thinning | **9.53** | **10.14** | **33.68** | **82.41** | **0.00** | **135.76** |
| | 7th Thinning | **182.46** | **258.85** | **317.51** | **101.41** | **193.70** | **1053.93** |
| 6 | 8th Thinning | **187.07** | **187.60** | **167.58** | **207.34** | **233.01** | **982.61** |
| | **Grand Total - Thinning &Over wood** | **645.18** | **621.45** | **806.27** | **638.38** | **722.37** | **3433.66** |
| **7** | **Bamboo** | **547.68** | **283.02** | **479.22** | **547.68** | **435.21** | **2292.81** |
| | **Great Grand Total** | **1192.86** | **904.47** | **1285.49** | **1186.06** | **1157.58** | **5726.47** |

----------0000000000----------

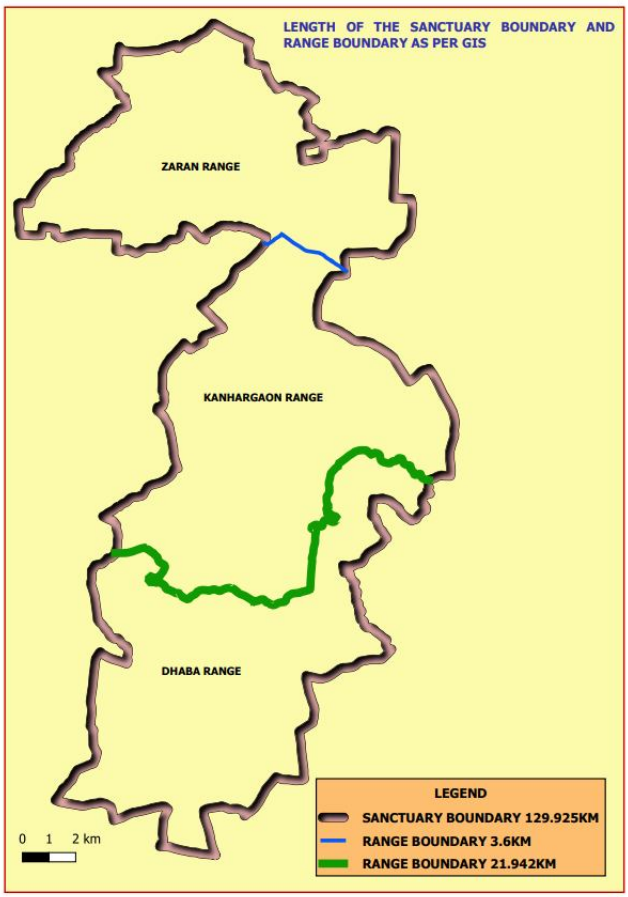
# Maps

## A. Kanhargaon Sanctuary Map with (Buffer- For future consideration)

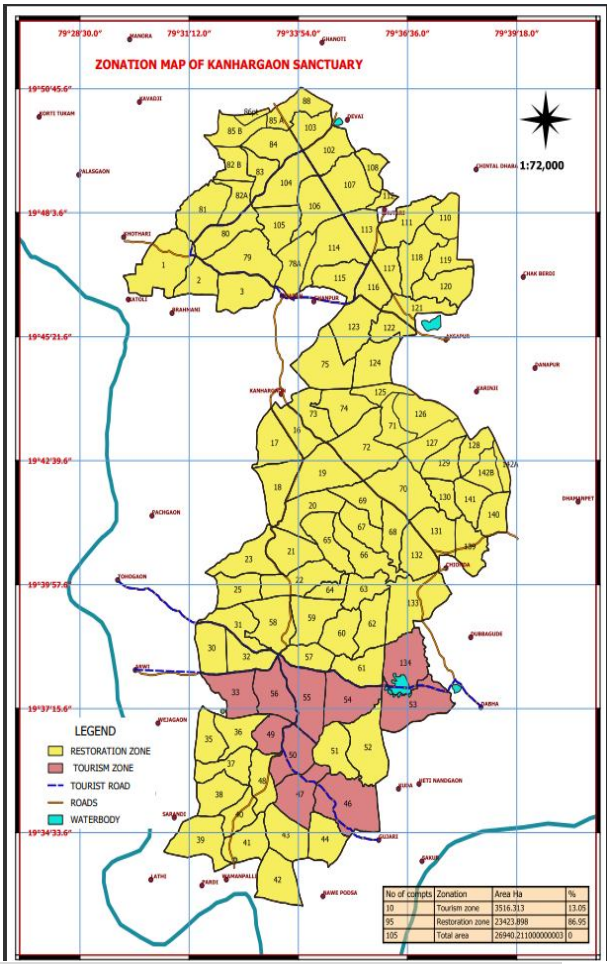


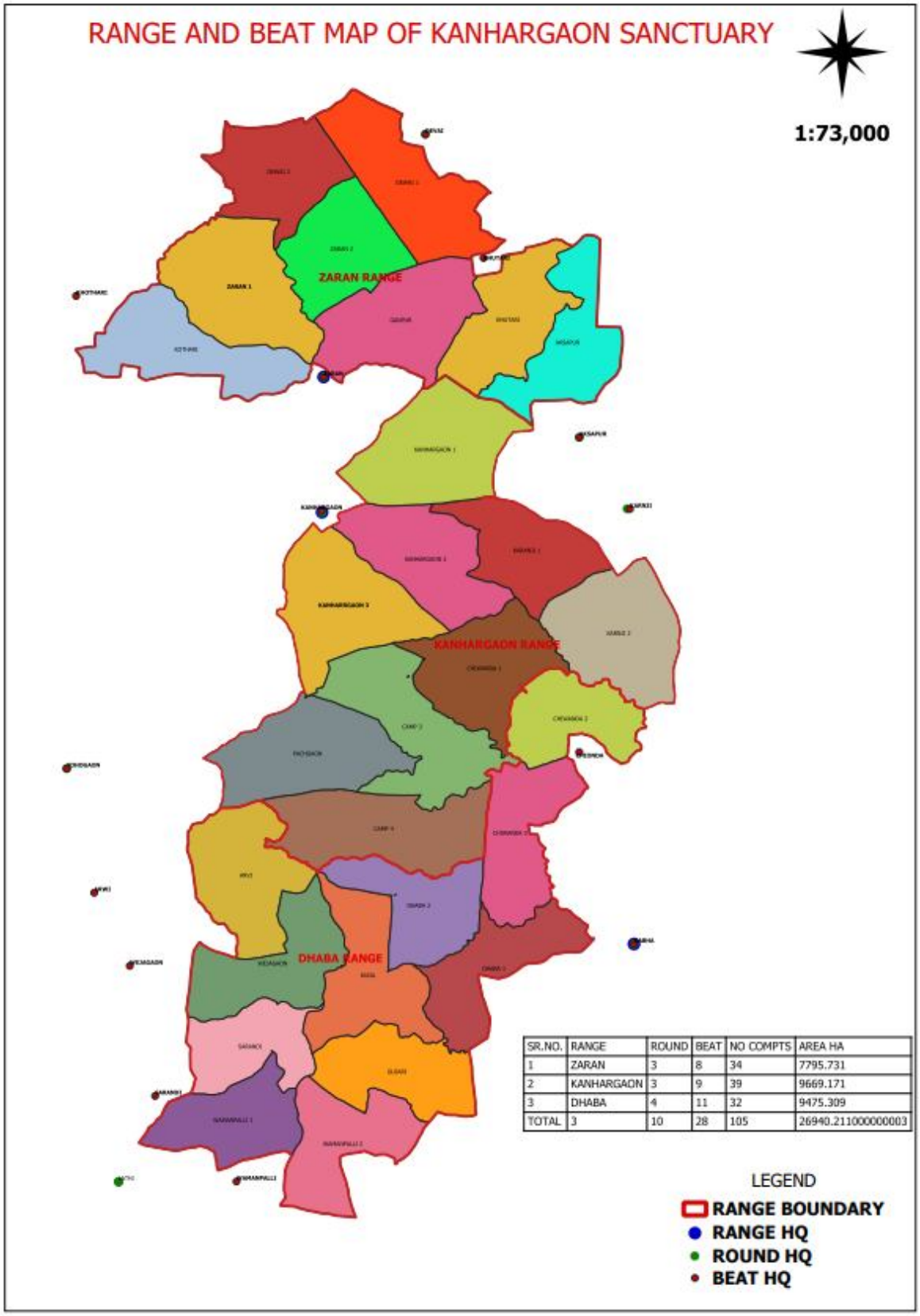
## B.Outer Boundary & Range boundaries




## C. Zonation Map



## D.Range, Round, Boundary




| SR.NO. | RANGE | ROUND | BEAT | NO COMPTS | AREA HA |
|---|---|---|---|---|---|
| 1 | ZARAN | 3 | 8 | 34 | 7795.731 |
| 2 | KANHARGAON | 3 | 9 | 39 | 9669.171 |
| 3 | DHABA | 4 | 11 | 32 | 9475.309 |
| TOTAL | 3 | 10 | 28 | 105 | 26940.211000000003 |