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GOVT. OF MAHARASHTRA

# MELGHAT TIGER RESERVE AMRAVATI



**TIGER CONSERVATION PLAN: CORRIDOR PLAN** 



PLAN PERIOD: 2014-15 To 2023-24

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#### PART- A

#### CHAPTER- I

#### INTRODUCTION OF THE AREA

1.01 This plan deals with landscape area of Melghat Tiger Reserve. The reserve forms an important corridor between forest areas of Madhya Pradesh and Maharashtra ensuring contiguity of forests in Satpuras. The areas falls under the Satpuda-Maikal Landscape and is located in Central India in the states of Madhya Pradesh, Maharashtra and Chhattisgarh and covers 14 districts. For Melghat Tiger Reserve, the area of the landscape dealt in this plan is the area bordering Madhya Pradesh in the North and East.

#### BIO-GEOGRAPHIC LOCATION:

1.02 Satpuda Maikal landscape of Melghat Tiger Reserve is located in 6 E Central Highlands Biotic Province of "6 Deccan Peninsula" Bio-geographic zone.

The forest areas of Madhya Pradesh and Maharashtra forms a large tract of tiger habitat, which provides an opportunity to create a landscape for the conservation of free ranging species such as tiger, gaur etc.

1.03 The landscape forms very important catchments to Tapi and Purna river system with important tributaries like Dolar, Khandu, Sipna, Gadga and Wan rivers. The Tapi and Purna river with its tributaries, sustain life of human, plant and wild animals within landscape.

#### BIO-DIVERSITY VALUES OF THE LANDSCAPE:

1.04 Tectona grandis, Madhuka indica, Boswellia serrata, Anogeissus latifolia, Dispyros melanoxylon, Terminalia tomentosa, Terminalia arjuna are some of the predominant tree species in the landscape. Apart from the species mentioned in the predominant types, Bamboo also occurs in good patches along the slopes in Jarida, Rajadoh, Marita, Rangubeli and Kundara. The species yielding various Non Timber Forest Produce such as Jamun, Aonla, Behada, Hirda, Bel, Gum, are commonly found in the tract.

The faunal inventory of landscape includes Tiger, Gaur, Wild dogs, Sambar, Jackal, Fox, Sloth bear, Wolf, Wild boar, Chaushinga. The landscape also supports rich avifauna and more than 265 birds have been identified. Forest Spotted Owlet, the endemic species also rediscovered in Melghat Tiger Reserve.

#### FOREST COVER:

1.05 The forest cover Melghat Tiger Reserve is bordering the forest of Betul, Harda, Nimar East district of Madhya Pradesh. The details are as below.

(Area in km²)

State	District	Dense	Moderate dense forest	Open	Forest Area	Total G.A.	Percentage under forest cover
Madhya Pradesh	Betul	201	1967	1404	3572	10043	35.57
"	Harda	19	546	463	1028	3330	30.87
"	Nimar East	200	1830	1381	3411	10776	31.65
Maharashtra	Amravati	655	1455	1077	3187	12210	26.10

Source forest survey of India 2011.

#### THE SATPUDA-MELGHAT CORRUDOR:

- 1.06 It connects the major source populations of Satpuda Tiger Reserve in Madhya Pradesh with Melghat Tiger Reserve in Maharashtra. Tiger occupancy in the forest of Betul-Hoshangabad-East Nimar suggests the operational status of corridor. The corridor passes through degraded forest, agricultural areas, and some low density human settlements areas. (Source: Status of tigers, co-predators and prey in India, 2010 reports.)
- 1.07 The landscape is also the meeting points of Sal (Shorea robusta) from the North and Teak (tectona grandis) forests from the South. The forests of Melghat Tiger Project are classified as "Dry Deciduous Forests as per Champion and Seths revised survey of forests types of India." The most dominant tree species is teak and other timber species are Tiwas, Bija, Haldu, Saja, Dhawda, Ain, Lendia etc. The important trees producing NTFP in the area are Moha, Tendu, Achar, Amla, Behda, Bhilawa, Bor, Khair, Jamun, Apta, Bel, etc. The gregarious patches of Bamboo are common along the hill slopes. The major grass species occurring in the landscape are Heteropogon, Contortus, Aristida, Themeda.
- 1.08 The multifarious efforts to conserve the biodiversity of the area in general, and the "tiger" in particular, over the past 30 years has resulted in flourishing faunal and floral diversity in this landscape. The enforcement of the provisions of the Wildlife (Protection) Act, 1972 and excellent protection by the Project Tiger and territorial staff has resulted better conservation of tiger & its prey base & habitat.

The details regarding Tiger and its prey base status, Human Population, Man – Wildlife conflict if any and cultural practices etc. in proposed corridors of Melghat and Satpuda Tiger Reserve are being worked out and incorporated in the plan in due course. Wildlife Conservation Trust (WCT), an NGO is also working on Tiger Corridors between Melghat Tiger Reserve and Satpuda Tiger Reserve and also between Yawal Wildlife Sanctuary, Pench National Park (Maharashtra) Tadoba and Bor Tiger Reserves. It's report is expected in couple of months. It will be examined and incorporated if found useful in the plan in due course.

#### 1.09 MAJOR LAND USES IN THE AREA:

#### THE FORESTS:

1.10 The area corridor falls within the forest area of East Melghat and West Melghat Division of Maharashtra and adjoining districts of Madhya Pradesh such as Betul, East Nimar, Hoshangabad. The forests area is mainly reserved forests.

#### DISTRICTS, SUB DIVISIONS AND BLOCKS

1.10.1 The area following districts of Maharashtra and Madhya Pradesh falls in the corridor.

State/ Districts	Population 2001				
	Male	Female	Total		
<b>Maharashtra</b> Amravati	13,43,572	12,62,491	26,06,063		
Madhya Pradesh					
East Nimar	8,82,371	8,25,799	17,08,170		
Betul	7,09,525	6,84,896	13,94,421		
Hoshangabad	5,71,796	5,13,215	10,85,011		

#### AGRICULTURE:

1.10.2 The main land use in the corridor is for the agriculture purpose. No major industries are located the area of corridor.

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#### CHAPTER- II

# STATUS OF TIGER AND CO-PREDATORS

# DISTRIBUTION AND ABUNDANCE STATUS WITH TYPE OF USE BY THE TIGER AND CO-PREDATOR.

2.01 The data including tigers in Satpuda- Melghat corridor is given below:

Corridor	Habitat available (km²)	Tigers in corridor	Tigers in Tiger Reserve on either side of corridors	People in the corridor	Cattle in corridor	Priority in for Achievable intervention for WWF
Satpuda Melghat	Not so much (7,344)	17	39.30	Not so many	Not so many	Medium

Source: Satpuda Maikal landscape Tiger Conservation programme proposal document (2007-2010)

The co-predators in the corridor are Leopard and Wild Dog. Satpuda Melghat Landscape is considered major stronghold of Wild Dog.

### PREY PREDATOR RELATIONSHIP:

2.02 The study of Prey Predator Relationship in Melghat Tiger Reserve was conducted by Centre for Wildlife Studies, Banglore in 2005, Envirosearch, Pune 2006 and Wildlife Research and Conservation Society, Pune in 2009. However, the prey predator Relationship Study in the corridor area of the Satpuda-Melghat landscape has not been conducted so far. Gaur and Sambar are the good indicators of Satpuda-Melghat landscape connectivity for tigers movements. The Occurrence of prey like Sambar within these contiguous forests is suggestive of viability of this corridor to the movements of large carnivore.

#### ASSESSMENT OF THREATS:

- 2.03 The threats and underlying pressure in the landscape are as below:
  - Poaching of tiger and its prey base.
  - Retaliatory killing due to men wildlife conflict.
  - Habitat destruction in corridors/ buffer zones.
  - 4) Management of forests outside the PAs has other major considerations than the requirements of tiger and its prey species.

Corridor Plan Melghat-Satpuda-Landscape

#### 1) Poaching of tigers and its prey base-

Poaching/ illegal hunting of tiger and its prey species is one of the major threats in some of the areas within the Satpuda- Maikal landscape. Tiger is poached due to the rising demands in the international markets. The poaching is done by organized gangs in connivance with the locals who know the distribution and movement of animals. The threats for poaching particularly on the areas bordering Madhya Pradesh towards Dharni, Rangubeli, Jarida in the North and towards Akot side in the South is very high.

The hunting of prey species is done either for domestic consumption or for the sale in the local market. Traditionally locals have been hunting herbivores for their own consumption with assistance from pet and trained dogs and by potting snares. A community named "Fasse Pardhi" is known to be traditional experts in making snares.

#### 2) Retaliatory killing due to men wildlife conflict-

In the landscape the men wildlife conflict occurs due to the following reasons.

- Crop depredation by wild herbivores
- Livestock kills by wild carnivores leading to the retaliatory killing of the later.
- Injuries to human by wild carnivores.

#### 3) Habitat destruction in corridors/ buffer zones in some PAs-

The habitat of tiger is shrinking because of its destruction, fragmentation and degradation. This leads to less and unevenly distributed prey species across landscape. This also results in tigers being separated in isolated populations within PAs. The major underlying causes for shrinking habitats are as below.

#### a) Overgrazing in corridor and buffer zone:

Allotment of grazing units to the villagers as per the State Govt. grazing policy is being carried out in Melghat Tiger Reserve and its landscape, but the number of cattle grazing tremendously outnumbers the permissible grazing units. This is illegal grazing in the forest lands which seems inevitable considering local tribal population despite strenuous efforts by forest departments to prevent it. Grazing is most dangerous foe for forests regeneration and wildlife conservation in all respects. Excessive and rampant grazing is one of the important reasons for degradation of habitats in the corridor.

#### b) Encroachment:

As human population and cattle population have increased in the landscape area, more and more forests were deforested and encroached upon to meet the growing needs of agriculture and habitation. The encroachment is a major threat for the connectivity between the tigers of two or more protected areas via corridors.

# c) Unsustainable collection of NTFP and medicinal plants in the corridor and buffer zone.

Illicit felling, bamboo extraction and collection of NTFP causes disturbance in the corridor forests. The unsustainable collection of NTFP many times leads to intentional forest fires and human wildlife conflicts in the corridor.

### d) Forest fires:

The following are the reasons for fire incidences in the landscape.

- The area comes under the dry tropical zone so the summers are dry, hot and long.
- ii) The major species are deciduous, which produces an inflammable leaf litter.
- iii) Intense biotic pressure.
- iv) For collection of NTFP.

# 4) The thrust of Management of forests outside the PAs may not be the conservation of tiger and its prey species-

The underlying causes for this are-

- i) Lack of intra-departmental coordination.
- Lack of infrastructure including staff.
- iii) Orientation of staff towards wildlife issues.
- iv) Inadequate enforcement of environmental legislations due to lack of capacity.

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#### CHAPTER- III

# LAND USE PATTERNS AND CONSERVATION-MANAGEMENT ISSUES

#### **HUMAN HABITATION:**

3.01 The human habitation along the forests of Satpuda Maikal landscape is divided into two types viz. revenue villages and villages at the fringes forests. The revenue villages are outside the forest area and the earlier forest villages (now revenue villages) are on the forest land (inhabited by the people who were initially brought there as workers in the forests). The development of these villages is the responsibility of the Govt.

## THE MAJOR TRIBES:

3.02 Gond, Korku, Nihal, Balai are the major tribes residing the landscape.

### LAND USE-AGRICULTURE:

3.03 Majority of people in this region are dependent on the cultivation for their livelihood.
Due to poor irrigation facilities and terrain in the area crop pattern is mainly based on the monsoon. Rest of the time they are dependent on the forest based resources, marginal labour and other activities.

# PROBLEMS FACED BY THE PEOPLE:

- 3.04 The local people residing within the landscape do face problems owing to the regulations enforced under laws for wildlife management. Main problems are-
  - a) Remoteness of the area: This poses severe constraints as far as the availability of various facilities.
  - b) Lack of grazing ground for the cattle, owing to the depleted state of ground cover outside PAs.
  - c) Loss of usual concessions like fuel wood, small timber, NTFP, fishing etc.
  - d) Loss of continuous income due to stoppage of forestry works, MFP collection etc.
  - e) Crop raiding by wild ungulates.
  - f) Loss of livestock to wild carnivores.
  - g) Human injury and loss of life due to lethal encounters with wild carnivores.

# HUMAN-WILDLIFE INTERFACE:

3.05 Most of the local inhabitants depend on forests for their day to day sustenance with the increase in population, this has degenerated into overuse and overall degradation of forest areas and loss of corridor connectivity outside the PAs. The overuse has resulted into men wildlife conflict also ....... to resources competition. Remoteness and inaccessibility has resulted into lack of development in the landscape. Illiteracy and ignorance has been the basic reason for lack of awareness towards conservation and protection of forests and wildlife.

# EFFORTS FOR MITIGATION AND RESULTS:

3.06 An effort is to be made to mitigate the problems of people through eco-friendly measures. Eco development, habitat improvement and soil and moisture conservation works are to be undertaken to generate employment to the extent possible by taking up such works, which are of significance and beneficial to wildlife conservation and at the same, they provide regular employment to the local people.

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#### PART- B

# CHAPTER- IV

# VISION, GOALS, OBJECTIVES AND PROBLEMS

#### VISION:

4.01 Manage the Satpuda- Melghat landscape within the framework of a metapopulation.

## MANAGEMENT GOALS:

#### 4.02

- To improve the Satpuda Maikal Tiger Conservation landscape for providing conducive habitat that will allow the long-term sustenance of tiger.
- To have an inclusive agenda of Co-existence with a focus on the wild life habitat parameters and livelihood needs of the people in the corridor.

#### OBJECTIVES:

#### 4.03

- To reduce the magnitude of deforestation & fragmentation of habitat in the Satpuda-Maikal Tiger Conservation Corridor.
- To have a forest management practices with a focus on wildlife.
- To reduce the Human- Animal conflict along the corridor.
- To create awareness and education on the needs to have a corridor for long term Survival of tiger.
- To Promote and encourage research and monitoring of wildlife in the corridor.

# PROBLEMS IN ACHIEVING OBJECTIVES:

#### 4.04

- High level of biotic interference.
- · Lack of inter departmental coordination.
- Most of the area in the corridor is highly degraded due to overuse & unsustainable activities.

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#### CHAPTER- V

# MANAGEMENT STRATEGIES

Tiger Population in India have been increasingly isolated over the last century due to habitat fragmentation and population decimation (Project Tiger- Tiger task force report 2005). The Genetic deterioration of insular population can be prevented by means of dispersing individuals and their successful breeding in the new population thus maintaining a large scale gene pool. The large terrestrial predators like tiger exhibit limited genetic subdivision because of high rates of dispersal mediated gene flow. The spatial genetic structure of the tiger meter\_-population in the Satpuda – Maikal landscape revealed that there is high genetic variation and very low genetic sub division which is attributed to forest connectivity and high gene flow in the Satpuda- Maikal landscape (Sandeep Sharma ct. al, 2012)

# 5.01 DELINEATION OF CORRIDORS AND OTHER HABITAT USED BY TIGERS AND CO-PREDATORS:

The present area of the Melghat represents mostly the natural and self contained eco system, which has so far not presented the problems like spill over population of tigers and herbivores outside the protected areas. However to provide a corridor for the dispersal of tiger population to other forest and protected area is a important aspect of wildlife management. The conservation of tiger will not only require the management of core and buffer areas but it will be also necessary to identify these area of connectivity to other core areas for ensuring gene flow as an ecological requirement for long term survival of the species. Therefore, it will be necessary to identify these areas of connectivity/ corridors between two source populations. In fact management of these critical areas will be as important as the core areas.

#### Natural Habitat Corridor:

The Satpuda – Maikal landscape of central Indian is classified as a Global priority Tiger Conservation Landscape due to its potential for providing sufficient habitat that will allow the long term persistence of tigers. In the spatial genetic analysis it was revealed that Satpuda- Maikal landscape has high genetic variation and very low genetic sub division (Sandeep Sharma et al, 2013). This high genetic variation is attributed to the presence of Natural Habitat Corridor between Melghat Tiger Reserve and Satpuda Tiger Reserve.)

# Disturbances in Habitat Corridor:

The corridor passes through degraded forests, agricultural areas and some low density human settlements (NTCA report, 2010) the corridor has human population and crisscrossed with road network and railway lines (Map).

The corridor has limited documentation of prey base. Agriculture is the prime occupation in the area and there are some agro based industries and other small scale industries. Because of the above mentioned reasons, the habitat is fragmented and disturbed.

### Suitable Habitat Patches:

In the context of Meta population, the natural forest Habitat in the Betul and Khandwa Division is more important. In these divisions, the herbivores and carnivores presence are reported in Working Plan. However, the prey base density or other habitat suitability is not documented. The forest patches with minimum biotic interference will be the suitable habitats. Forest patches adjoining the protected areas and 5Km away from the human settlements may can be suitable habitat patches. These suitable habitat patches should be given priority for executing the wildlife management prescriptions.

#### 5.02 Prioritization of linkages:

The area of the Melghat Tiger Reserves can be connected to Satpuda Tiger Reserve of Madhya Pradesh. The territorial divisions West Melghat, East Melghat, Akola, Buldhana are on the fringe of the buffer zone of Melghat Tiger Reserve having linkages with Madhya Pradesh and also from Jarida, Chourakund, Hatru ranges of Melghat Tiger Reserve. On the western side of the MTR, the Core Area of Ambabarwa Wildlife Sanctuary is adjacent to the reserve forests areas of Buldhana forest division which in turn may support wildlife sanctuary an identified good tiger habitat. However, on the northern side in Sipna wildlife division the buffer area of the Chaurakund and Hatru range adjacent to Bhaisdehi range presently may not be considered as good corridor for tiger population because there is large concentration of villages along the northern boundary of MTR. These revenue villages in Madhya Pradesh interspersed with scrub forests needs to be protected so that it can be developed in to a good corridor on northern landscape. A detailed survey is required to be carried out for the development of the corridor for dispersing tigers and prey population.

# Annexure-A Information About Corridors Existing Around Melghat Tiger Reserve

SR. NO.	NAME OF CORRIDOR	STATUS	COMMENTS	PRIORITY OF CONSERVATION
1,	Melghat- Satpuda Corridor	Good	Th. Betul & Hoshangabad districts	High
2	Melghat- Pench Corridor	Poor	Th. Amravati & Nagpur districts.	High
3	Melghat - Kanha Corridor	Poor	Th. Amravati, Nagpur & Balaghat districts	High
	Internal Corridors around ME	LGHAT in	Maharashtra & Madh	ya Pradesh
4	Melghat – Betul Forests Corridor Jarida-Hatru-Chaurakund Ranges share boundary with Forest Ranges of Betul Divisions	Good	Forested area with good connectivity. Human dominated landscape.	High
5	Melghat – Morshi & Warud Corridor Jarida Range (both MTR & Territorial) with Morshi-Warud ranges of Amravati Forest Division	Good	Forested area with good connectivity. Orange orchards area. Human dominated landscape.	High
6	Melghat – Jalgaon Jamod – Wadodha Corridor Ambabarwa Range with Jalgaon Jamod range of Buldhana Forest Division and further to Wadodha range of Jalgaon Forest Division	Good	Forested area with good connectivity. Banana orchards area. Human dominated landscape.	High
7	Melghat – Pohra & Malkhed Corridor From southern boundary of Melghat through Paratwada, Chandurbazaar and Anjangaon ranges up to Pohra-Malkhed areas around Amravati city areas	Poor	No forest area with very sparse vegetation. Agricultural landscape. Human Dominated landscape.	Low
8	Melghat – Khandwa Corridor Through forest areas of Dharni & Dhulghat ranges of West Melghat Divisions to Khandwa Forests	Poor	Sparsely forested area with human dominated and agricultural landscape.	High

# 5.03 Zone Plan:

# Habitat management zone

The forest patches which is given in annexure-A are to be survey by taking 1.5 km. on either side of the patches and have to be delineated. The linear forest patches in the corridor shall be delineated by the concerned divisions. Any revenue patches in corridor have to be delineated by the concerned revenue authorities / other agencies. All the villages along the corridor are to be identified. In case of villages in the corridor, a linear strip of 0.5 km have to be delineated. The forest patches that are away from human disturbance are to be identified and soil and moisture conservation measures suited to the identified sites should be taken up in order to increase the availability of water to the moving carnivores along the corridor.

# Rehabilitation Zone:

The Traditional hunter community like Bawarias, Bahehias, Pardhis etc., are living along the corridor and pose a serious threat to the movement of tiger and leopard. These traditional hunting communities should be identified in consultation with the local forest department and community development works and employment opportunities may be carried out. These traditional hunter communities have temporary shelters being nomadic hence it is proposed to came out a rehabilitation zone for their permanant settlement.

# 5.04 DEVELOPMENT OF INTEGRATED LAND USE APPROACH FOR THE AREA COMMENSURATE WITH TIGER CONSERVATION AND CO-EXISTANCE AGENDA.

The area in proposed corridor shall comprise of the forest area of Maharashtra and Madhya Pradesh and also the revenue land and agricultural land. This requires detail survey of the area for integrated development of the corridor by mainstreaming the wildlife concerns involving all stake holders.

The proposed area of forests in the corridor is under traditional forestry practices and other land uses. These areas are also under the tremendous pressure due to habitations and human activities. Therefore, in such areas the existing management practices will have to be reoriented so as to upgrade and maintain the ecological status of the connectivity/ corridors. The agenda of co-existence will have to be implemented for such areas with a focus on the wildlife habitat parameters and the livelihoods/ developmental needs of the local communities.

# 5.05 PRESENT PRACTICE OF WILDLIFE MANAGEMENT IN TERRITORIAL FOREST AREAS:

Wildlife management overlapping working circle exists in the working plan of all the concerned forests divisions. The management of wildlife is based on the prescriptions given in working plan. It is to mention here that more funds needs to be allocated for the areas proposed for corridors of the territorial divisions, so that works of habitat improvement and protection can be effectively implemented.

#### 5.06 Theme Plan:

The protection measures in the corridor area should be taken up in order to facilitate safe passage of tigers between the protected areas and also to reduce the human animal conflict in the area. In this context, in the entire area, mainstreaming of Wildlife issues should be considered.

- 1. The local youths from the selected villages shall be the members of the committee and report any movement of tiger of other carnivore to the concerned authorities. The details of monitoring aspects should be taken up with the facilitation of Forest Department and Non-Government Organization.
- 2. The local youths should also be trained in tracking & tackling of problematic animals. The rogue wild animals should be captured in time. This can be ensured by having rescue team at identified places.
- Regular and timely compensation should be given in order to avoid retaliatory killing.
- 4. Local youths should also be involved in monitoring the electricity line passing to avoid electrocution of wild animals.

#### 5.07. CONSERVATION RECOMMENDATIONS FOR THE LANDSCAPE

1) Tiger source populations of Melghat need to be consolidated through enhanced protection and habitat management especially in forest areas surrounding Melghat Tiger Reserve. This would increase the survival of dispersing tigers thereby increasing the overall tiger population 2) Manage the Satpuda-Melghat Landscape within the framework of a metapopulation. This requires landscape planning targeted for each district harboring connecting forests. The inter-

state committee may be set up to identify the vulnerable and important areas and to carry out

the landscape planning.

- 3) Tiger habitat in Betul-Hoshangabad-East Nimar needs protection and restorative management for enhancing the value of these forests for sustaining dispersing tigers from Melghat and Satpuda Tiger Reserve and maintain connectivity between these two sources.
- 4) Melghat Tiger Reserve and its various sources of funding i.e. C.S.S., Tiger Conservation Foundation will encourage the study of the corridor area.
- 5) Identifying suitable areas for plantations with sensitivity to ecological attributes in the areas of territorial forest divisions in Maharashtra and Madhya Pradesh falling in the areas of landscape.
- 6) Identifying appropriate sites for soil and moisture conservation strategies.
- 7) Planning social forestry plantations in the blank areas of corridor as well as road side plantations, integrating ecological considerations.
- 8) From the protection point of view watch towers to be erected at a distance of 12 km. interval in the corridor area.

#### CHAPTER- VI

# ECO-DEVELOPMENT AND LIVELIHOODS

#### ECO DEVELOPMENT PROGRAMME:

The Eco- development committee formation should be encouraged in villages which are within 5 Km of forest patches. The eco-development measures would reduce the dependence of villagers on forest for fuel, timber, graying etc.

- 6.01 All the villages falling under the proposed corridor shall be identified for the eco development works. The eco development activity in the villages falling within the area of Maharashtra will be governed vide G. R. no. FDM 2011/F.C.100/F-2, dated 5<sup>th</sup> October 2011. The principles of this G. R. would be followed in implementing the prescription. Activities related to ecological, cultural, social, eco development and livelihood issues would also be facilitated by the Melghat Tiger Reserve Foundation.
- 6.02 The villages falling within the area of Madhya Pradesh will be governed as per the G.R. issued by the Madhya Pradesh Government. The State Govt. of Maharashtra and Madhya Pradesh will decide in consultation the developmental activities to be undertaken within the villages.
- 6.03 The agenda of co-existence will have to be implemented for such areas with a focus on the wildlife habitat parameters and the livelihood/ developmental needs of the local communities. The role of the local communities, line agencies and other stakeholders will be extremely important for the management of such areas.
- 6.04 Initiatives will be taken to prepare the micro plans of villages identified under the corridor of Melghat landscape as per the G. R. issued by the Govt. dated 5<sup>th</sup> October 2011. This plan will be based on socio economic survey of family of villages, incomes presently derived from the protected area or the forest area, the location and distribution of the resources, the seasonality of supply and demand and the beneficiaries within the area.
- 6.05 To prepare the micro plans of the villages falling within the area of Madhya Pradesh, a request will be made to the Govt. of Maharashtra to take initiative and discuss at Govt. level the matter with the Madhya Pradesh Government.

## INTEGRATION OF RURAL DEVELOPMENT PROGRAMME:

6.06 Dovetailing all the developmental works in the villages falling in the corridor area will be created by involving all the line agencies particularly Zilla Parishad and Tribal Deptt.

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#### CHAPTER- VII

## TIGER POPULATION AND HABITAT ASSESSMENT

# INTRODUCTION:

7.01 Melghat Tiger Project and its adjoining landscape is an important constituent of Central Indian landscape having higher Tiger occupancy. National Tiger Conservation Authority and Wildlife Institute of India Studies in the Central Indian Landscape revealed the higher population, distributed in 17 populations. The Central Indian Landscape complex consists of 11 separate landscapes out of which 4 have potential to sustain meta population of tiger. Melghat landscape is one of these four.

# DAILY MONITORING AND FORECASTING

7.02 Based on the format prescribed by NTCA for daily monitoring, a detail day to day monitoring shall be carried out. The details are discussed in chapter IX of the core area.
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# CHAPTER- VIII

# ORGANISATION, ADMINISTRATION AND BUDGET

## 8.01 Organization & Administration:

The Satpura- Maikal Corridor covers two states viz, Maharashtra and Madha Pradesh and therefore, there is a need to have a Corridor Conservation Committee (CCC). The CCC primarily is a Community based Management system. The Corridor Conservation Committee shall include all major stake holders in order to have a participatory monitoring. The CCC may consist of the following members:

- Representative of the Forest Department 1
- Representative of the Agriculture Department 2
- Representative of the Horticulture Department 3
- Representative of the Irrigation Department 4
- Representative of the Livestock Department 5
- Representative of the Electricity Department 6
- Local Representative of the area. 7
- 4 Eco-Development Committee Members (2 should be women ) 8
- Representative of Local NGO. 9
- Any other member as decided by CCC. 10

#### 8.02

To carry out the prescriptions of the corridor plan a tentative budged is given below for 10 years.

Sr. No	Item of Work	Unit	Amount / year
1	Formation of EDC and execution of Micro plan.	10 lakh per Village	1,00,00,000/-
2	Formation of Response team with vehicle	1	2,00,00,000/-
3	Rehabilitation of Traditional hunting community	10	1,00,00,000/-
4	Temporary Camps- Infrastruchare and man force	10	50,00,000/-
5	Habitat Improvement works like Soil Moisture conservation, fire protection etc,	-	10,00,00,000/-
6	Compensation for Crop / Animal damage	-	50,00,000/-
7	Awareness compress, publicity monitoring		50,00,000/-
	Total		11,30,00,000/-

Corridor Plan Melghat-Satpuda-Landscape

# 8.03 Schedule of Operations:

The yearly schedule of operation shall be finalized in the CCC in order to have flexibility in area of operation.

# 8.04 Monitoring and Evaluation :

The corridor plan has the objective of achieving safe passage for tiger in the Satpura – Maikal Landscape. In order to evaluate and monitor the plan, the following parameters can be used.

Sr. No	Indicator	Inference
1	Number of Similar tiger photos camera trapped in the two protected Area / Corridor.	Movement of Tiger in the Corridor
2	Number of Cattle Kill / Crop Damage / Human death cases recorded.	Human Animal conflict trend.
3	Amount of funds disbursed as compensation	trend.
5	Number of Poaching incidences reported in the corridor	Rehabilitation of hunting tribe.
	Number of Successful capture and release of problematic wild animals in the corridor	Success of rescue team / Local People's cooperation for corridor

## EDC COORDINATION:

8.05 Coordination with Madhya Pradesh Govt. will be done for implementing eco development activities. To implement the eco development activities in the villages of Madhya Pradesh and Maharashtra falling within the corridor, the inter- state committee may be constituted to monitor the work.

# PROTECTION STRATEGY AND LINKANGES WITH TIGER CELL:

**8.06** For the protection of corridor, meeting of interstate committee along with forest officials of Madhya Pradesh and Maharashtra will be organized. The meeting will be organized in each quarter of the year. The issue will also be discussed in the district as well as regional level committee of Tiger Cell and may be reported to the State Level Committee of Tiger Cell. Thereby the tiger conservation issues of the corridor will be discussed by the interstate committee constituted.

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# ANNEXURE NO. 1

# Information About Villages That Exist Between Satpuda Landscape & Melghat Landscape

Sr. No.	Name of District	Important Towns and Villages
1	Betul	Desali, Pipariya, Gadakhal, Ratanpur, Chirotia, Nimia, Kanari, Khokra, Bajkhada, Danora, Shahapur, Dabri, Dhodramou, Kajli, Tingria, Joyli, Malwar, Punji, Koti, Padhar, Chandu, Bhaisdehi, Palaspur, Adapur
2	Harda	Nyapura, Nadara, Khirkiyan, Timurni, Charwa, Sirali, Magardha, Dhekna. Lokhartalai, Jamunia, Bon, Degawan, Chhidgaon, Jijagaon, Kelanpur, Pipalghata, Abagaon, Saragpur, Mahadgaon, Bhawardi, Chiklapat, Naharjal, Bansigarh, Malegaon, Churni, Sighora, Lodhidhana, Bothi, Bhurali, Khumi, Muhal Kalan
3	East Nimar/Khandwa	Hirapur, Pangri, Arakhera, Jhirpa. Kekaria, Mojwari, Kheri, Nishania, Timarni, Bodul, Dudwas, Harsud, Diwal, Pandhana, Koladit, Pumi, Piplani, Mathni
4	Hoshangabad	Neelgadh, SeoniMalwa, Itarsi, Bambai, Chorasideo, Dolaria, Bhaisdehi, Kotara, Shohpur, Bekor, Patani, Sohagpur, Piparia, Bhoura, Kesla

# ANNEXURE NO.2 Districts and their villages

# Hoshangabad district

1

# Sub-District Number of Villages

Babai

104

Bankhedi

122

Hoshangabad 70

Itarsi

132

**Pipariya** 

146

SeoniMalwa 193

Sohagpur

162

#### Harda District

# **Sub-District Number of Villages**

Harda

175

Khirkiya

177

Timarni

161

#### **Betul District**

### Sub-District Number of Villages

<u>Amla</u>

153

Betul

430

Bhainsdehi 383

Multai

252

Shahpur

# EAST NIMAR/KHADWA DISTRICT

# Sub-District Number of Villages

Burhanpur 180

Harsud

336

Khandwa

367

Nepanagar 85

86

Pandhana

# ANNEXURE NO.3 INFORMATION ABOUT CORRIDORS EXISTING AROUND MELCHAT TIGED DESERVE

075	MELGHAT TIGER RESERVE						
SR. NO.	NAME OF CORRIDOR	STATUS	COMMENTS	PRIORITY OF CONSERVATION			
1	Melghat- Satpuda Corridor	Good	Th. Betul & Hoshangabad	High			
2	Melghat- Pench Corridor	Poor	Th. Amravati & Nagpur districts.	High			
3	Melghat - Kanha Corridor	Poor	Th. Amravati, Nagpur & Balaghat districts	High			
-	Internal Corridors aroun	d MELGHA	T in Maharashtra & Madl	va Pradesh			
4	Melghat – Betul Forests Corridor Jarida-Hatru-Chaurakund Ranges share boundary with Forest Ranges of Betul Divisions	Good	Forested area with good connectivity. Human dominated landscape.	High			
5	Melghat – Morshi & Warud Corridor Jarida Range (both MTR & Territorial) with Morshi- Warud ranges of Amravati Forest Division	Good	Forested area with good connectivity. Orange orchards area. Human dominated landscape.	High			
6	Melghat – Jalgaon Jamod – Wadodha Corridor Ambabarwa Range with Jalgaon Jamod range of Buldhana Forest Division and further to Wadodha range of Jalgaon Forest Division	Good	Forested area with good connectivity. Banana orchards area. Human dominated landscape.	High			
7	Melghat – Pohra & Malkhed Corridor From southern boundary of Melghat through Paratwada, Chandurbazaar and Anjangaon ranges up to Pohra-Malkhed areas around Amravati city areas	Poor	No forest area with very sparse vegetation. Agricultural landscape. Human Dominated landscape.	Low			
8	Melghat - Khandwa Corridor Through forest areas of Dharni & Dhulghat ranges of West Melghat Divisions to Khandwa Forests	Poor	Sparsely forested area with human dominated and agricultural landscape.	High			

# **ANNEXURE NO.4**

# INFORMATION ABOUT VILLAGES IN CORRIDOR IN MAHARASHTRA

Sr.	Name of	Geogra	phical Aera	in Hec.	Wildlife
No.	village	Revenue	Forest	Total	Population
1	Kund	44.81	301.19	346.00	Spoted Deer,
2	Bondilawa	151.92	350.32	502.24	Wild Bore,
3	Chatwabod	627.69	0.00	627.69	Blue Bull,
4	Kekadabod	446.81	0.00	446.81	Langur
5	Dhakarmal	380.91	0.00	380.91	
6	Patiya	665.98	0.00	665.98	
7	Kakarmal	294.98	0.00	294.98	
8	Dharanmahu	575.23	0.00	575.23	
9	Karada	441.05	0.00	441.05	-
10	Gobarkahu	310.98	0.00	310.98	
11	Chakarda	1029.52	0.00	1029.52	
12	Nirgudi	357.85	0.00	357.85	
13	Potilawa	436.15	0.00	436.15	
14	Chipoli	371.51	0.00	371.51	
15	Chitri	44.09	919.61	963.70	
16	Piparikheda	0.00	0.00	0.00	
	Total	6179.48	1571.12	7750.6	

Say 77.50 sq. km.

# Information of Area of forest in Melghat to Satpuda Corridor in Maharashtra

Sr. No.	Name of Beat	Forest Area in Ha.
1	Kund	501.49
2	Bondilawa	761.48
3	Chatwabod	680.90
4	Kekadabod	728.80
5	Patiya	879.30
6	Dharanmahu	558.10
7	Gobarkahu	958.11
8	Potilawa	592.00
	Total	5660.18

Say 56.60 sq. km.

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Umardoh	Sindrai Madho	Kundai	Dodasemar	Nirama	Bhatodiya Kalan	Talkhamra	Bhordehi Khurd	Nawegaon Kalan	Baliyamau Tandi	Karanji	Tenkadahana 1	Pindrai Kalan	Churni Chougan	Dungariya	Rakhi Kol	Bhardagarh	Padhar	Mendka	Lakhapur	Chandniya Koyalwadi	Bakhari	Chikatbarri	Dhau	Gurre Khurai Mau	Dhobe	Batri	Satijhiri	Tandsi	Jamai Ryt.	Deogarh	Village
486	408	349	440	107	632	185	177	260	221	354	1 475	573	315	210	626	2259	194	297	505	708	912	228	1341	1121	1564	2926	333	200	231	270	Area (Hectares)
170	94	69	153	58	171	30	73	99	183	34	1 131	124	86	288	628	228	74	38	14	80	56	67	232	93	60	127	16	16	35	130	No of Household
1000	619	415	923	295	1001	169	437	544	918	198	1768	652	, 487	1404	3105	1371	369	258	82	458	354	350	1341	550	373	665	93	92	184	654	Total Population

66	65	64	83	62	61	60	59	<b>58</b>	57	56	55	72	53	52	51	50	49	48	47	46	45	4	£	42	41	40	39	88	37	36	35	34	33	32
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Govindwari Mal	Narayan Ghat	Govindwari Ryt.	Kalkot	Machhera	Nauthal	Pardhan Ghoghari	Junapani Ryt.	Bhudhena	Matia Doh	Shankarpur	Mehlari Bakol	Bhawari Ryt.	Deep *	Belkheda	Parwat Ghoghri	Thawari Bapu	Madni	Mohgaon Kisan	Sindarai Ryt.	Gujarghat	Pachdhar	Karanjei	Panara	Bhimsani Ryt.	Katkuhi	Khumkal	Umarghod Khurd	Barelipar	Jambakiradi	Kali Chhapar (CT)	Sindarai Guraiyathar	Surnadehi Ryt.	Sohagi	Tandi Ryt.
502	523	125	367	639	304	240	. 134	274	344	249	404	378	181	478	246	201	192	221	256	322	259	143	216	43	371	297	222	159	555	NA	567	152	176	168
153	54	40	97	244	106	180	25	125	97	84	162	93	• 60	151	166	63	70	148	133	127	69	25	73	9	165	103	97	60	193	2119	200	51	32	65
879	263	222	593	1401	516	997	172	587	549	501	943	586	356	834	1050	379	379	820	796	740	323	147	357	<b>5</b> 8	846	591	556	353	1107	10692	1063	242	183	348

101	100	98	98	97	96	95	94	93	92	91	90	89	88	87	86	85	84	ස	82	81	80	79	78	77	76	75	74	73	72	71	70	69	68	67
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Keli	Rawang	Banshipura	Lodhidhana	Gangradhana	Badwani Vangram	Javarda	Dong				Dunda Seoni	Dholpuri	Niwar	Thuepani	Jamuniya Khurd	Devari	Dudhgaon	Paniyari	Kanhargaon	Khamarpani	Gadhewani	Bhimal Gondi	Sanwari No.2	Khadabeli	Mohpani Bisa	Bhairopani	Khapa	Sillewani	Mohpani Mal.	Lans	Ambalhiri	Chhindboh	Lohangi	Kalathuni
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Bankabharda	Pachama	Arjungondi	Nursena	DOG	bhandarapani (Viran)	Diamed	Maugam	Monud	Bull	Gulai	Palaspur	Piparitheda	Chiffri	Chipoli	Potilawa	Nirgudi	Chakarda	Gombarkahu	Karada	Dharanmahu	Kakarmal	Patiya	Dhakarmal	Kekadabod	Chalwabod	Bhondilawa	Kund	Ratamati	Junapani	Malegaon	Didamada	Borpani	Dehariya	Lakhadeh
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Chopna	Khatgarh	Hurra Malgujari(Harra Mal)	Bhudki	Bancha	Chirapatla	Ghisibagia	Chikhii Mal	Chirotiya	Pipal Barra	Aldimgarh	Bhurbhur	Gbdimai (Gudhi) *	Deshawadi	Kamtha Ryt	Silpati (Viran)	Sukpandu	Sakmandai	Chikhli Ryt	Ajai	Kajli	Amapura (Amapur)	Kantawadi	Khaprawadi	Tangna Ryt	Tendukheda Ryt	Pandajhiri	Mendha Kheda	Padalda	Напа	Dolidhana	Baretha	Kharagondi (Kharigondi)	Palaspani
317	646	253	323	ž	1861	1619	249	498	528	685	- 88	170	1602	215	¥	NA	××	588	479	264	247	233	218	101	391	309	556	189	718	1085	601	454	349
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Chira (Cheera)	Chimaipur	Mohta	Dharagohan	Dhawada Raya	Saradehi	Padar	Kasmar Khond	Jadiya	Khateda	Kharigayawani	Bijadehr	Khamalpur	Khande Pipriya	Sihari	Mardwani Ryl	Bichchhukhan	Rojhada	Belond	Panjhar	Kachhar	Lapa	Khokra	Bisighat	Salpur	Dhararwoh	Thuthamah (	Gatakheda -F	Ghodawadi	Than	Kalmeshwari	Malseoni	Bhaidehi	Bakud	Bansbodi

240	239	238	237	236	235	234	233	232	231	230	229	1268	'227	226	225	224	223	222	221	220	219	218	217	216	215	214	213	212	211	210	209	208	207	206
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Gotabarn	Nami	Jatamau	Salai	Kasda Kalan	Chandakhad	Amabad	Jujadeh	Kotra	Jilwani	Tangna	Jhalpa	Mhatama 1	Piparia Kalan '	Nazarpur	Amihira	Chichadhana	Dhai Khurd	Babaikhurd	Jamani	Kaveli	Mohala	Pandri	Bandi	Keolajhir	Karkha Jamai	Jamai Damami	Parchha	Kiratpur	Temla Khurd	Sonthia				Jogli
230	813	110	181	355	380	526	411	159	273	853	282	601	295	819	1382	229	228	292	1642	473	421	860	299	211	269	116	435	586	171	243	NA	- NA	AN	1286
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-		Ranipura(Tawanagar)			Khudamba	Budimai	Patlai Alias Sultanpur	Kishanpur	Khohri	Amar Katara	Gidkheda	Lahi	Palasi	Morghat	Sirupura	Mahuadhana	Pipaliya Kalan	Pipalthon	Sota Chikhali	Jondhal	Borkunda	Batki Alias Iklani
=	-	NA	NA	NA	61	81	130	93	1069	113	197	385	244	474	425	577	1377	687	1237	390	608	741
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