

Zonal Master Plan For Eco – Sensitive Zone of Sita Mata Wild Life Sanctuary





Forest, Environment and Climate Change Department Government of Rajasthan



ZONAL MASTER PLAN

FOR

ECO-SENSITIVE ZONE

OF

SITA MATA

WILD LIFE SANCTUARY

Foreword

The primary aim of declaring any area as an eco-sensitive zone is to establish a buffer zone or transition zone in order to safeguard the wildlife sanctuary's ecosystem and to enhance both the biotic environment of the sanctuary and the buffer zone surrounding it. The Eco-Sensitive Zone around Sita Mata Wild Life Sanctuary notified by Government of India notification mandates the State Government to prepare a Zonal Master Plan.

The Zonal Master Plan has been prepared with focus on the biological and environmental conservation of the Sita Mata ESZ. The Zonal Master Plan also places a strong emphasis on the potential expansion of ecotourism and prescribes zoning and development control standards in accordance with the Gazette Notification for sustainable tourist activities and the notification of eco-sensitive zones.

Department of Environment and Climate Change has prepared the Zonal Master Plan with technical assistance of Malaviya National Institute of Technology, Jaipur, Forest Department. and finalized the plan after seeking public comments.

I sincerely hope that Zonal Master Plan would serve as a guiding light, not only for the enhancement of the wildlife sanctuary but also for the entire eco-sensitive zone. It will promote sustainable tourism and that all stakeholders will join hands to ensure the successful implementation of the Zonal Master Plan for the Eco-Sensitive Zone in the future.

> Shikhar Agrawal Additional Chief Secretary

PREFACE

The key objectives of this study are to create a Zonal Master Plan of Eco-Sensitive Zone of Sita Mata, advise development regulations, and suggest proposals to mitigate negative environmental effects. The Zonal Master Plan of Eco-Sensitive Zone of Sita Mata addresses all the key development issues, including land-use, infrastructure, and transportation, with a primary focus on ecology, environment, and wildlife. The Zonal Master Plan includes tourism plan including studies to analyse the current conditions of various significant tourist destinations, their current situation and infrastructure availability, tourism statistics, environmental issues, and identification of potential tourism sites, as well as the creation of facilities for overall improvement of tourism footfall and tourism sites. The records will make it easier to determine the historical significance and heritage value of potential tourist destinations.

The primary aim of declaring any area as an eco-sensitive zone is to establish a buffer zone or transition zone in order to safeguard the wildlife sanctuary's ecosystem and to enhance both the biotic environment of the sanctuary and the buffer zone surrounding it. As a result, it's important to identify the numerous factors that contribute to environmental deterioration and provide solutions.

The zonal master plan focuses on the biological and environmental issues of the Sita Mata ESZ. In addition, it focuses on an analysis of the present situation in order to comprehend and implement the necessary action to protect and regulate the ecological environment and natural resources of the ESZ region.

The Zonal Master Plan also places a strong emphasis on the potential expansion of ecotourism and prescribes zoning and development control standards in accordance with the Gazetted Notification by government of India), for sustainable tourist activities and the notification of eco-sensitive zones.

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We express our special gratitude to Shri Shikhar Agrawal, Additional Chief Secretary (Department of Environment and Climate Change, Govt. of Rajasthan), Deputy Conservator of Forest (Wildlife), Chittorgarh and Dr. Nand Kumar, Associate Professor, Malaviya National Institute of Technology, Jaipur who supported us for preparation of Zonal Mater plan.

We thank all those officers who supported us directly or indirectly in formulation of this Zonal Master Plan report. The data received from primary surveys was gathered from citizens and we also thank them for the same. We hope that this document will act as a guide to improve the environment not only in wild life sanctuary but also of eco sensitive zone and help to promote sustainable tourism. At the end we hope that in future all the stakeholders will help in implementation of Zonal Master Plan of ESZ area.

> **Dr. Monali Sen** Director and Joint Secretary Department of Environment and Climate Change

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CHAPTER 1

1.1 NAME, LOCATION, CONSTITUTION AND EXTENT

The Management plan deals with the forest and non-forest area within the notified boundary of Sitamata Wild Life Sanctuary. The people believe that Devi Sita spent her days of exile in this forest, where the Ashram of Rishi Valmiki was situated, thus the sanctuary bears the name of Devi Sita. The sanctuary lies in the civil districts of Chittorgarh and Pratapgarh in south-east region of Rajasthan. It covers an area of 422.95 Sq.km.

It is situated between $74^{\circ}23$ 'E and $74^{\circ}39$ 'E East longitude and $24^{\circ}04$ 'N and $24^{\circ}23$ 'N North latitude.

The Eco-sensitive zone comprises 0.5 km to maximum 3 kms and site specific upto natural boundary like river. Area from the boundary of Sitamata wildlife sanctuary in Chittorgarh & Pratapgarh districts of Rajasthan state with site specific variations. The revenue area falling within the boundary of the sanctuary alongwith the area comprising 1 km in length from the boundary of Sitamata wildlife sanctuary in the east, south and west where the boundary of Pratapgarh territorial division forms common boundary with the sanctuary shall also be the Eco-sensitive zone of Sitamata wildlife sanctuary. In south and west area of Pratapgarh division falls in the Eco-sensitive zone so area extents upto 3 kms.

- **North:** Area between 1 km of village Tajela to Borundi from sanctuary boundary. Area of sanctuary boundary from Ratichandji ka khera to Dhanaveji road.
- **East:** Dhanaveji to Sangrikhera, Narela phala, Bhura-Jakham river-Jakham river- Saripipli-Raghunathpura- Sub merged area of Jakham dam- Surpur, Nalwa, Rajmagri, Depur, Goliya phala, Gyaspur.
- **South:** Village Gyaspur-forest block Bheda, forest block Chiklad (Pratapgarh territorial division up to 3 km), Bhaga gaon, Gameti phala,

Bhumania,to Karmal, Shriguda, Sathpur, Chittoriaa (long Canal side).

West: Dhariyawad Bansi road towards west village Panchaguda to village Dabela 3 kms (forest area of Pratatpgarh territorial division) and village Tajela 1 km from sanctuary boundary.

1.2 APPROACH AND ACCESS

The sanctuary lies on Udaipur-Pratapgarh state highway at a distance of 100 kms from Udaipur and 60 kms from Chittorgarh. The nearest Railway station is Bari Sadri on Mavli Junction-Bari Sadri Meter gauge line of the western railway. The nearest airport Dabok (Udaipur) is 80 kms from the sanctuary.

1.3 STATEMENT OF SIGNIFICANCE

The Sitamata wildlife sanctuary is one of the protected areas expressing full range of habitats since it is a junction of Vidhyas, Aravallis and Malwa plateau. It is important from zoo-geographical point of view as it forms the north-western limit of Teak-Bamboo forests and the fauna occurring their in. It is a mega biodiversity area due to various habitats like large area of teak stands, wetlands, perennial streams, cascading mountains and fine grooves of mixed woodlands.

These diverse habitats provide wide range of fauna including the largest viable population of Flying squirrel in Rajasthan, Grey Jungle fowl, Ratel, Pangolin, Panther, Four horned antelope etc.

The sanctuary contains historical and religious places like Sitamata temple, Valmiki Asharam, Sitabadi with which deep emotions of people are attached.

The varied biological, cultural and environmental values support the view that Sitamata sanctuary is a local wildlife hot spot and shall emerge as an important tourist destination.

1.4 CONSERVATION VALUE

Sitamata sanctuary forms a unique system as the Aravali range forms north-west limits of teak forest. The sanctuary is zoo-geographically important as it has influence of 3 major systems namely the Aravallis, the Vindhyas and the Malwa Plateau. As a result of this geographical feature, the sanctuary is rich in biodiversity.

A variety of flora and fauna are found including the rare Flying squirrel. So, the presence of rich biodiversity provides an ideal area for preservation and conservation. The Panther is at the apex of food chain is the sanctuary.

This area is rich in water resources particularly south-east and central region of the sanctuary, where springs and river system are perennial and large water bodies are present e.g., the Jakham dam and Nanglia pickupweir. Besides many other earthen dams, tanks and anicuts are present in and around the sanctuary.

The sanctuary presents numerous fields for research work. The scientific, education, aesthetic, recreational, geographical and socioeconomic values are the main subjects of research and study. Many floral and faunal species are still unreported.

The sanctuary is linked to the forests of Pratapgarh (territorial) division which provide important corridors for the wildlife present in the sanctuary. These corridors are thus required to be protected by including these areas into the sanctuary for proper management practices.

1.5 BOUNDARIES:

1.5.1 GEOGRAPHICAL:

North

Range Bansi of Pratapgarh division constitutes the northern boundary of the sanctuary.

East

Range Badi Sadri of the sanctuary constitutes the eastern boundary of the sanctuary, which also includes a part of range Choti Sadri of Pratapgarh division.

South

The southern boundaries include portion of Range Choti Sadri and Range Devgarh of Pratapgarh division. The backwater of Jakham dam is part of the boundary.

West

The state highway passing through Bansi to Pratapgarh forms the western road of the sanctuary and H.Q. of the sanctuary Dhariyawad is situated on this boundary.

1.5.2 ECOLOGICAL BOUNDARIES

The present legally established boundaries are not ecologically sufficient from the point of view of the specific objects of management. The ecological boundary spreads into nearby forest and revenue lands. The nearby forest area of Pratapgarh division have common boundary at Dabela to Panchagura, Jelda to Gyaspur and Nakor to Harisingh ka kheda. Thus, the boundaries naturally get extended into these areas, there by providing additional area for wildlife.

The western ecological boundary extends up to Lasadia and beyond which provides a very large forest area in between Dabela, Panchagura and Lasadia. In the west is Jelda, Gyaspur and Jolar which also occupy a large forest area between them. These forest areas along revenue lands provides the ecological boundary where the free movement of wild animals is facilitated. These areas act as a buffer zone for the wild life present in the sanctuary like panthers, flying squirrel, four horned antelope and sambars to mention a few.

The forest of the sanctuary is interspersed with agriculture fields and villages there by creating a typically honeycombed situation. The

agricultural activities coupled with heavy biotic pressure of the livestock greatly influence the management of the sanctuary.

The permanent source of water present in and around the sanctuary is a great boon to the wildlife. This also facilitates the wild animals for their survival particularly on the southern boundaries and central zone of the sanctuary.

1.6 GEOLOGY, ROCK, & SOIL

The sanctuary is occupied by Aravalli system joined in by Malwa plateau called the Deccan trap. It covers the older formations like Pre-Aravalli gneisses, Aravalli and Vindayans. It is basalt in composition and consists essentially of basic plagioclase, pyrovene magnesite and limonite are found as accessories in the rock. The trap is usually fine grained, dense and black in colour. At places it is amyloidal and the angular cavities are filled with zeolite, calcite, chalcedony and its varieties, opal of crystals of quartz. The traps are hard, tough and heat resisting.

After the deposits of Vindhyans there is a great hiatus in the geological history of the tract. The next younger formation is the Deccan trap. The infra trepans were deposited immediately preceding the outpourings of the trepan flows. The lava spread out far and wide in nearly horizontal sheets, the earliest flows filling up the irregularities of the then topography. These flows are called traps because of their steeple-terraced appearance.

Intercalated with the trap flows at places there are inter trapped beds, which consists of silicaceous limestone's and charty rocks with some fossils. Theyare found as lenticular beds in the trap and are generally only a few meters thick and of uncertain extent. The infra-trappeans also occur just beneath the Deccan trap and consists of calcarious sandstone, cherty limestones, chacedonic rocks and nodules of chert.

Laterite is formed as a result of weathering of the trap, which is found as capping at number of places. It is generally reddish brown in colour, and pisolitic. In a few places it contains bauxite segregation. Lithomergic clays are also found associated with laterites in some places.

The soil is varied ranging from clayey, clayey-loam to gravelly depending upon topography. Black or grey cotton soil is found in patches lying upon the older formations. The soil on slopes and plateaus is morromy and unfertile. The soil depth is good and varies from 30 cms. to few meters. The soil is mixed with pebbles and boulders. All over the forest the soil is generally dry, rich in humus and fertile.

1.7 TERRAIN

The area forms part of south east Arravali region joining Malwa plateau. The tract is mainly hilly interspersed with network of streams and rivers. The Ruppura plateau lies in the south-eastern part of the sanctuary having width of 5 to 8 kms and length of 20 kms. The area from Sitamata temple to Arampura is rugged and undulating. The typical feature of this area is that the slope is gentle except at some places. Plain grassy patches are also found in Bhenwa, Gyaspur and Panchaguda blocks.

The configuration of land is hilly and rugged with high altitudinal variation ranging from 280 mts. to 60 mts. The general slope of the land is from north-west to south-east.

The network of rivers and accompanied riparian vegetation is the main characteristic of this sanctuary. The Jakham, the Karmoi and the Sitamata rivers flow through the sanctuary.

In general, the topography presents a picture of tangled wilderness of ridges, plateaus, valleys and gorges with a network of streams and at places fairly wide plains.

1.8 CLIMATE

The climate of this tract is sub-tropical characterized by distinct winter, summer and monsoon season. The summers commence from middle of March and the heat becomes intense in April. Hot westerly winds called 'LOO' are common in summer. The nights are pleasant.

THE SEASONAL VARIATION AT SITAMATA WILDLIFE SANCTUARY

Season	Duration	Peak months
Summers	Mid March to Mid June	April-May
Rains	Mid June to September	July-August
Winters	October to mid March	December – January

1.8.1 RAINFALL PATTERN AND DISTRIBUTION

Rainy season commences from mid-June and continues up to mid-September. One or Two winter showers also sometimes occur in the mouth of January-February. The average rainfall is 756 mm with maximum up to 951 mm and minimum 517 mm. The average number of rainy days is 30.

The rains during last few years have been highly crratic. The year wise data for rainfall, highest and lowest temperatures recorded, are shown in Appendix No. VII and VIII

1.8.2 TEMPERATURE

The winter season commences from November it becomes cold in December-January. The mean minimum temperature is 60C while the mean maximum temperature is 450 C.

1.8.3 HUMIDITY

Humidity in the air is generally low but at places where water is available throughout out the year it is good.

1.8.4 WIND SPEEDS, A SUMMARY OF YEAR-ROUND PATTERN

Wind blow from Southwest to Northeast during summer and the direction is reversed during winter season. Winds generally blow moderate speed and rarely blow at a speed of 40-60 km. per hour. During summer, dust storms are sometimes observed.

1.8.5 DROUGHT AND ITS PERIODICITY:

The drought is a common phenomenon. Repeated droughts have a detrimental effect on the ecology of the sanctuary.

1.8.6 FIRE

Another natural calamity which is detrimental to the sanctuary is forest fire during summers. The fires continue for days together and engulf a sizeable area destroying dry wood, leaves, seed and wildlife present in the area and adversely affecting the standing crops of the vegetation.

1.8.7 FLOOD, STORM ETC.

The sanctuary is blessed with the fact that no floods have been reported in past few years. Storms are also of low intensity and very rare in occurrence.

1.9 WATER SOURCES

1.9.1 NATURAL

The main source of water is the rivers & streams in the sanctuary. The main rivers are as under –

- 1. The Jakham River
- 2. The Karmoi River
- 3. The Tankai River
- 4. The Bhodo River
- 5. The Sitamata River

The Jakham, the Sitamata and the Karmoi rivers are perennial and water flows in them though out the year. In the Tankai and the Bhudo rivers the water remains in patches in the form of pools during the summers.

Jakham dam has been constructed across the river Jakham near Anoppura. Due to this the backwater of dam extends for a length of 4-5-kms providing excellent water facilities for wild animals. The canal system originates 12 kms down stream of the dam and water flows through the riverbed for this length before flowing into canals.

The springs mainly originate on the periphery of Ruppura Plateau. Main springs are –

- 1. Sitamata (Sitamata Block)
- 2. Mogi Amba (Pal Block)
- 3. Kali Amba (Pal Block)
- 4. Liv-Kush (Sitamata Block)
- 5. Henya Baori (Kalakhet Block)
- 6. Dhebersalla (Kater Bhatiani Block)
- 7. Mahadeoji (Satpura Block)

1.9.2 ARTIFICIAL

The important Tanks/Reservoirs are _

- 1. Deepon ka Talab
- 2. Borundi Talab
- 3. Ramer Talab
- 4. Naglia pickup Weir.

The following wells exits from which water holes are filled in summer-

1. Dungla Kui (Panchaguda Block)

- 2. Bhanwar Kui (Panchaguda Block)
- 3. Nai Ki Kuri (Ambaretti Block)
- 4. Amli Kuri (Ranigarh Block)
- 5. Nehar Vella (Adaghata Block)
- 6. Gyaspur Ghata (Gyaspur Block)

To supplement water availability in pinch period Hand-pumps have been installed at following places-

- 1. Lambi Semal (ambaretti Block)
- 2. Dama Mahudi (ambaretti Block)
- 3. Kalakhet (Ranigarh Block)
- 4. Arampura (Ambaretti Block)

These waterholes are filled during pinch period when natural water holes dry up. View huts have also been provided to watch animals at close quarters.

Water supply is good except in north-eastern part of the sanctuary. The water table is more than 200 feet deep in the plateau area.

1.10 RANGE OF WILDLIFE, STATUS, DISTRIBUTION AND HABITAT 1.10.1 VEGETATION: -

BIOGEOGRAPHIC CLASSIFICATION:

The main tree species found are Teak (Tectona grandis), Dhaura (Anogeissues latifolia), Gurjan (Lannea coromandelica) Salar (Boswellia Serrata), Tendu (Diospyros melanoxylon), Khair (Acacia catechu), Aonla (Embelica officinalis), Kalam (mitragyna parvifolia), Mokha (Schrebera swietenoides), Siris (Albizzia lebbek), Bor (Zizyphus mauritiana), Umbia (Miliusa tomentosa), Khankra (Butea monosperma) Bel (Aegle marmelos), Karaya (Sterculia urens), mahua (Madhuca indica), Charoli (Buchnania lanzan), amaltas (Cassia fistula), Kachnar (Banhinia racemosa), Kohra (Terminalia arjuna), Bahera (Terminalia ballerica), Harra (Terminalia chebula), Jamun (Syzygium cuminii).

The average density is 0.4 to 0.8. The average height is seldom 06 to 10 mts. In more favourable localities it grows up to 20 mts. (lofty trees are the most suitable habitat for the flying squirrel).

The Dendrocalamus strictus (Bans) grows abundantly in the under-storey. The vegetation in the Nallah beds remains evergreen and provide excellent habitat for the wildlife.

The natural regeneration of Teak, Dhawra, Tendu and other species is profuse and abundant.

The undergrowth consists of Marorphali (Helicteres isora), Dudhi (Cryptolepic buchanani), Karonda (Carrissa carendas), Kali siali (Grewia flavescens), Tamat (Nyctanthes arbortristis) etc.

The medicinal plants like Safed Musli (Chlorophytum tuberosum), Narkanta (Asparagus dumosus), Marorphal (helicteres isora) are found.

The grasses mainly found are Bhangta (Apluda mutica) gundal (Themeda quadrivalvis), Soorwala (Heteropogon contortus), Gunderi (cymbopogon jwarancusa) etc. Because of the dense tree growth grasses grow more in open areas.

Along the watercourses due to the better availability of moisture microclimate is formed. Tall evergreen trees qccur at such places with dense undergrowth. Sitamata, Valmiki ashram, Mogi Amba, keli, Kali Amba Dhebarsalla are some of such places which from unique ecosystem. The Mango, Jamun, Chironji, Rohini, Mahua, bahera, Karonda bargad, Churel, Kohra etc. trees are generally found which provide ideal conditions for large variety of wild animals.

1.10.2 FOREST TYPES, COVER AND FOOD FOR WILD ANIMALS.

i) FOREST TYPES

The forests dealt within this management plan fall under "II Dry Tropical forest" as per champion and Seth's revised classification of forest types. The following subtypes and groups along with their subsidiary edaphic types are recognized –

Group	TROPICAL DRY DECIDUOUS FORESTS
Sub-group 5A	Southern tropical dry deciduous forest. 5 A C 1, Dry teak bearing forest –
Sub-group	Northern tropical dry deciduous forest.
5B [°]	C 2 Northern dry mixed deciduous forest

ii) COVER AND FOOD FOR WILD ANIMALS

The vegetation density and diversity are an important factor in determining the habitat conditions for particular wild animals. Different animals prefer different type of habitat, food and shelter. The flagship species of the area, Panther needs wooded and shrubby groves for hiding and predation, which are available in the most part of the sanctuary area. Existence of the boundary outcrops and numerous gorges in the hilly terrain form ideal cover for the big cat. Due to disruption of food chain and low population of herbivores a fairly large number of panthers quite often prey upon the domestic livestock to fulfil their food requirement.

The Hyenas, Jackals, Foxes, Jungle cat are also found existing in the similar habitat condition.

Chausinga, Cheetal, Blue Bulls, Wild Boars, Langoor, Hare and Porcupine form major herbivores of the sanctuary. The low population level is due to their direct competition with livestock and human disturbances. The avifauna population needs different storeys of flora for nesting and roosting and different species depend upon seeds of grasses and fruits of various species while others predate on insects and a variety of smaller birds and animal. some birds prefer concealed habitat for nesting, the common nesting sites for different species are protected groves of thorny species, under storey trees near water points and on the top canopy of trees.

1.10.3 SPECIES AND COMMUNITIES OF CONSERVATION IMPORTANCE:

As per International Union for Conservation of Nature (IUCN) classification several plant species of global importance are found in the sanctuary which needs immediate actions to protect them against threats of extinction. A list of such species is as under: -

S. No.	Scientific Name	IUCN Category	Distribution Area
1.	Sterculia urens	Threatened	Pal, Sitamata, Ambaretti block
2.	Dendrocalamus strictus	Rare	-do-
3.	Chlorophytum tuberosum	Rare	Sitamata, Pal
4.	Buchanania lanzan	Rare	Sitamata, Kater Bhatiani
5.	Desmotachya bipinnata	Rare	Sitamata
6.	G. superba	Intermediate	Sitamata
7.	Vanda orchid	Rare	Sitamata, Pal

These species may not survive if timely action is not taken against threats of extinction. Due to small population and restricted distribution, they require intensive care and habitat management and may survive only with human support. The intermingling of very ancient mountain ranges in the sanctuary and resultant bio-diversity is an important factor for conservation hence every effort should be made to make them free from human interference and restore moisture regime through drainage line treatment.

The rare threatened bird species found in the sanctuary as listed by International Union for Conservation of Nature (I.U.C.N.) and Zoological Survey of India (Z.S.I.) are is under: -

S. No.	English Name	Scientific Name	IUCN/ ZSI category
1.	Common peafowl	Pavo cristatus	Threatened
2.	White backed vulture	Gyps bengalensis	Vulnerable
3.	Long billed vulture	Gyps indica	Vulnerable
4.	White scavenger vulture	Nephron peronopterus	Vulnerable
5.	Open billed stork	Anastomus oscatans	Vulnerable
6.	Painted Stork	Mycturis lencocephals	Vulnerable
7.	Black ibis	Pseudobis papillosa	Near Threatened
8.	Spoon bill	Plaicha lencorodia	Threatened
9.	Paradise flycatcher	Terpsiphone Paradisi	Vulnerable
10.	Grey hornbill	Tockus birostris	Vulnerable
11.	Open billed stork	Ariastomus oscitans	Vulnerable
12.	Indian pitta (Navrange)	Pitta brachyra	Vulnerable

ANIMALS

VERTEBRATES:

The panther is the highest predator in the sanctuary. The Hyana, wolves, Jungle Cat, Jackal are among the other carnivores. The herbivores include Sambhar, Chital, Neelgai, Wildboar, Four horned antelope and Chinkara. The Pangolin, Palm Civet Ratel are also found.

The Jakham River contains Muggars apart from variety of fishes and turtles.

The flying squirrel is unique species found in the sanctuary in viable numbers. Grey jungle fowl, Peafowl, Painted partridge and Green pigeons are found in large numbers. The other animals found are Hare, Fox, Langurs, pythons, Lizards etc.

The avifauna of sanctuary is rich and about 280 species of terrestrial and water birds are present. (Please see Appendix No. V)

1.10.4 STATUS, DISTRIBUTION, HABITAT QUALITY, QUANTITY AND KEY AREAS OF MAJOR ANIMALS:

(a) **Panther:** - The Panther is the top carnivore of the sanctuary. They are inhabiting the forests of Sitamata sanctuary. The woody hilly tract forms the best habitat for the Panthers. Suitable habitat is available for this species in whole the sanctuary.

(b) The Striped Hyena: -Hyena is nocturnal in nature. They are known as the scavengers as it eats the dead animals and left-over portions of kills of other animals. Occasionally goats are lifted by them.

Suitable habitat is available for this species. Hyenas are more peripheral in the sanctuary so that they can approach road kills easily.

(c) **Jackal:** -This species prefers outskirts of the sanctuary. It hunts small animals for food and does scavenging on dead animals too. It is commonly occurring in the sanctuary. It is very fond of Ber fruits.

Suitable habitat is available for this species. They are also more peripheral in nature.

(d) **Hanuman Langur:** - It is a folivorus, semi-arboreal primate. It likes a variety of food items like foliage, fruits, buds, seeds, bark etc. It devours leaves of Mahuwa, Godal, Calotropis procera, Salar etc. Many troupes of langurs roost near Arampura and Sitamata temple.

Suitable habitat is available for this species. This species prefers areas having tree groves with drinking water. Sometimes they raid on crops at peripheral area.

(e) **Small Indian Civet and Toddy cat:** -These two species of civets inhibit in the hollows and crevices of the rocks. They are omnivorous natural animals, found in good number over here.

Suitable habitat is available for this species. Often seen near Ber and Khajur groves.

(f) **Common Mongoose:** -A species which is commonly found in the Sanctuary. It is diurnal, prefer relatively open areas to live. It hunts rodent, birds and reptiles for its survival.

Suitable habitat is available for this species. A good population is seen near western border of the sanctuary, to take advantage of road kills as food.

(g) **Ruddy Mongoose:** -It prefers relatively denser part of the sanctuary. It is a diurnal, carnivorous animal, hunts small birds, reptiles, mammals for food. This species is less common within the geographical limits of the sanctuary.

Suitable habitat is available for this species. A good population is seen near western border of the sanctuary, to take advantage of road kills as food.

(h) Four- horned antelope or Chowsingha (Tetracerus quadricornis) - A small antelope with two pairs of horn, Coat is dull red – brown above and white below. Prefers undulating or hill country, tall grass and open jungle. It drinks water regularly. Usually seen alone or in pairs.

(i) **Elliot's Flying squirrel (Petaurista philippensis)** - It is a slender – bodied, nocturnal, flying rodent It can glide top of tree to down side but can't fly from ground to tree top. Essentially, they are forest animals & emerge form shelter at dusk and retire before dawn. They usually roost in hole of a tree. The food of the flying squirrel consists of the fruits and nuts of various trees. It commonly feeds on soft pith of extremities of Mahuwa branches. To save flying squirrels, protection and conservation of Mahuwa trees is must. By gnawing hard – shelled fruits, they help in seeds germination.

(j) **Pangolin or (Scaly anteater Manis carssicaudata)** – It is a nocturnal, adentulous, burrowing animal. The most distinctive character of a pangolin is its armour of protecting scales. In defence the animal curls itself into an armoured ball, exhibiting an enormous muscular power which defies any ordinary attempt to unroll it. It feeds on ants and termites and help in forest protection.

(k) **Birds:** -A large number of terrestrial birds are found in the Sitamata Wild Life sanctuary viz. Common Quail, Grey Partridge, Painted partridge, Crested lark, Ashycrowed Finch Lark, Red squrfowl, Grey jungle fowl, Brown headed barbet etc. A variety of waterfowl can be seen in the water body of Jaisamand Lake. Arboreal birds like yellow legged Green Pigeon, White–browed Fantail, Fly catcher, white – throated fantail flycatchers, Grey hornbill, Parakeets, Copper smith etc. are commonly seen near the water holes in the sanctuary. Rock loving birds like Brown Rock Chat, Crested Bunting, Long-billed Vulture, Martin etc. also inhibit the habitat of the sanctuary. Crested Bunting breeds in this sanctuary area in the rock cervices during rainy season.

Suitable habitat is available for this various species. Birds are seen everywhere in the sanctuary. Peeladar pond is preferred for breeding by many aquatic species. This site needs habitat improvement. Micro habitat development like moors, swamp, reed, marsh etc are needed. This site also has potential for eco-tourism development. Bird watching hideout can be developed here. Many bird species found in this sanctuary are listed in the IUCN Red Data Book and ZSI Red Data Book are, an account of which is given in following tables respectively:

S. No	Common Name	Latin Name	Category
1	White Bellied Minivet	Pericrocotus erythropygus	Near Threatened
2	Indian Black Ibis	Prendibis papillosa	Near Threatened
3	Painted Stork	Myeteria leucocephals	Vulnerable
4	White-winged Black Tit	Parus nuchalis	Vulnerable
5	Asian Openbill	Anastomus oscitans	Vulnerable
6	White-backed Vulture	Gyps bengalensis	Vulnerable
7	King Vulture	Gyps calvus	Vulnerable

IUCN RED DATA BIRDS OF SITAMATA WILD LIFE SANCTUARY

ZSI Red Data Birds of Sitamata Wild Life Sanctuary

S. No	Common Name	Latin Name	Category
1	Spoonbill	Platelia leucorodia	Threatened
2	Common Peafowl	Pavo cristatus	Threatened

1.11 THE PROTECTED AREA AND THE INTERFACE LAND USE SITUATION

1.11.1 The location, extent, boundaries and natural attributes of the ZI:

The zone of influence extends over the entire periphery of the forest. The entire landscape gives a mosaic appearance as a result of large number of revenue villages existing inside the boundary of the sanctuary

1.11.2 Villages inside and outside the PA, Ethnic identities, traditions, customs, relationships between distinct groups of people, relationship, with forest:

There are 21 villages inside and 108 villages within 5 kms of sanctuary boundary. The local villagers depend upon the forests for firewood, grazing, **timber for house constructions and repairs, wood for agriculture implements** and non wood forest products like Amla, Aritha, Baheda, Timru, Bor, Honey, Gum, Mahua flowers and Fruits, Timru leaves, Grasses etc. The major practices, which have a detrimental effect on the resource, are grazing lopping, firewood collection, timber trees and bamboo cutting.

1.11.3 The state of the people's economy, Vocations, landuse, use of forest and non forest based natural resources by people and seasonal patterns:

Economically and culturally, the people are heavily dependent on the forest of the sanctuary. Agricultural economy of the local population mainly consists of small and fragmented holdings. This forces the villagers to depend heavily on forest for their livelihood.

Traditionally the people are religious. They worship different Gods. The major festivals of the people are Diwali, Dussehra, Holi etc. Caste system is relatively rigid. Marriages take place within the same community.

Economy of the people is very poor. Irrigation facilities are limited. Generally, irrigation is done by wells. The major crops of the area are maize, groundnut, wheat, mustard and seasonal vegetables during monsoon and winter. The agriculture is mainly raining fed. Jakham Dam constructed in the area help in recharging the ground water level and also serves as a source of irrigation in the downstream of the Jakham river along with perennial rivers like the Karmoi, the Tankiya and the Sitamata.

Implication of the landuse and resource dependency for the conservation of PA:

Cattle rearing is the major occupation of the villagers in non commond area. Cows and goats are the milk yielding cattle. Dairy industry is not well developed in the area. Agriculture is the main occupation in commond area of Jakham irrigation dam. Other vocations of the people include the labour works at various sites of Government agencies.

Forest / PA management practices and their implication for people:

The protected area management practices aim at developing the forest and habitat by imposing strict regulation in sanctuary areas. The sanctuary grazing and NWFP collection will be regulated. Eco-development works are proposed to be undertaken for reducing dependency on forests.

The developmental programmes and conservation issues:

The living standard of the agrarian community can be improved by development of agriculture. Construction of dams, anicut and development of irrigation has helped the farmers to take more crops per year and even during droughts and non-rainy seasons. which has greatly improved their economy. Development of roads and communication network has improved the marketing and access to essential facilities like health and education available at Dhariyawad, Pratapgarh, Chotisadri and Badisadri. These development activities are helping in overall development of the area but the adverse impacts of such activities on the habitat are required to be suitably mitigated.

The development of protected area will be of great help in mitigating the water scarcity of the region. The carrying capacity of the area has decreased due to unregulated heavy biotic pressure leading to disturbances in hydrological cycle and other ecological process. The soil and moisture conservation works, rehabilitation of degraded area, development of pastures and grasses are the linked activities to the integrated area and ecodevelopment works will reduce the dependence of local populations on the forests. Soil and moisture conservation works will help in augmenting the ground water recharge in sanctuary area which can act as a natural reservoir of water to mitigate the water scarcity of the area. Eco-development works will include the supply of fuel-wood and fodder which will improve the income level of the villagers. In and around the sanctuary, the habitat deterioration has been mainly due to unlimited and unregulated grazing pressure and encroachments. The resource development will have a direct bearing on the economy of the people, thus reducing their dependence on the forest, which in turn will help in maintaining and improving the fragile ecological balance of the area.

CHAPTER-2

2.1 Overview

The Eco-Sensitive Zone is spread over an area 172.45 sq kms. around the boundary of Sitamata Wildlife Sanctuary and the boundary description of such Zone is given in Figure 1.1(see Gazette Notification of 19th October, 2015), which shows the Sitamata Wildlife Sanctuary and ESZ as per Gazette Notification, 2015.

Development Promotion and Control Regulations (DPCR) are a set of guidelines and rules established by local government authorities to govern landuse and development within a specific jurisdiction. These regulations aim to promote orderly and sustainable development while ensuring that it aligns with the overall planning goals and objectives of the area.

Eco-sensitive zone would comprise of the area to an extant varying from 0.5 km. to 3 km. from the boundary of Sitamata Wildlife Sanctuary.

2.2 Land uses and Allowed Activities in ESZ of Sitamata Wildlife Sanctuary

As per Sitamata ESZ Notification, the list of activities is categorized in three parts. All the development decisions shall be in conformity with the activities prohibited, regulated, promoted as per Sitamata ESZ Notification. All activities in the Eco sensitive Zone shall be governed by the provisions of the Environment (Protection) Act, 1986 (29 of 1986) and the rules made thereunder, and be regulated in the manner specified in the Table

2.2.1 Prohibited Activities

As per the Sitamata ESZ Notification the prohibited activities are given in Annexure 1A.

2.2.2 Regulated Activities

As per the Sitamata ESZ Notification the regulated activities are given in Annexure 1B.

2.2.3 Promoted Activities



As per the Sitamata ESZ Notification the promoted activities are given in Annexure 1C.

Figure 1.1 Map of Eco-Sensitive Zone of Sitamata Wildlife Sanctuary

2.3 Provisions of Sitamata Wildlife Sanctuary Notification

ESZ Notification dated 19-10-2015 prescribes prohibited, promoted and regulated activities. Further, if any activity is prohibited under ESZ Notification dated 19-10-2015 and by any court orders, that prohibition would prevail over the activities allowed.

2.4 Existing Activity/Use

ESZ Notification dated 19-10-2015 prescribed regulations regarding new hotel, resort, commercial establishments, etc. This leads to the requirement of defining what is "existing."

For purpose of ZMP for the ESZ, hotels, resorts, commercial establishments, etc. shall be considered as existing if they have any of the following issued prior to 19-10-2015 ESZ Notification of ESZ for Sitamata Wildlife Sanctuary:

1. Electricity connection for non-agricultural use.

2. Approval by Tourism Department as tourism unit.

3. Conversion order/Patta for non-agricultural use.

4. Building Plan approval.

5. Order regarding change in land use.

6. Proof of deposition of tax as hotel, resort, commercial establishment, etc.

7. CTE/CTO/Environmental Clearance.

Additionally, all the duly approved uses existing prior to issue of Sitamata Wildlife Sanctuary ESZ Notification shall be honoured.

2.5 Building Parameters for Grant of Approval

The general building parameters for permissions to be granted in ESZ shall be as under:

Maximum Height – 10.5 meters.

However, if the allowed height, as per building byelaws is less than 10.5 meters. Then, the lesser height would be applicable.

Maximum Ground Coverage – 20%

However, if the plot coverage allowed as per building byelaws is less than 20% then, the lesser ground coverage would be applicable.

Other building parameters will be as per prevailing Building Byelaws wherever applicable.

2.6 Environmental Clearance from State Environment Impact Assessment Committee or MOEF&CC

As per Sub-para 3 and Sub-para 4 of point no. 6 (Terms of Reference) of Sitamata Wildlife Sanctuary Eco-Sensitive Zone Notification, the provision is as under:

The activities that are covered in the Schedule to the notification of the Government of India in the erstwhile Ministry of Environment and Forest number S.O. 1533 (E), dated the 14th September, 2006, and are falling in the Eco-Sensitive Zone, except for the prohibited activities as specified in the table under Paragraph 4 thereof, shall be scrutinised by the monitoring committee based on the actual site-specific conditions and referred to the

Central Government in the Ministry of Environment, Forest and Climate Change for prior environmental clearances under the provisions of the said notification.

ANNEXURE - 1A LIST OF ACTIVITIES PROHIBITED WITHIN ECO-SENSITIVE ZONE

S. No.	Activity	Description
(1)	(2)	(3)
A. Pr	ohibited Activities	
1.	Commercial mining, stone quarrying and crushing units.	 (a) All new and existing mining (minor and major minerals), stone quarrying and crushing units are prohibited except for the domestic needs of <i>bona fide</i> local residents including digging of earth for construction or repair of houses and for manufacture of country tiles or bricks for housing for personal consumption. (b) The mining operations shall strictly be in accordance with the orders of the Hon'ble Supreme Court dated 04.08.2006 in the matter of T.N. Godavarman Thirumulpad Vs. UOI in W.P.(C) No.202 of 1995 and order of the Hon'ble Supreme Court dated
		21.04.2014 in the matter of Goa Foundation Vs. UOI in W.P.(C) No.435 of 2012.
2.	Setting up of saw mills.	No new or expansion of existing saw mills shall be permitted within the Eco-sensitive Zone. No renewal of licenses of existing saw mills on their expiry period.

	Setting up of			
	industries	No new or expansion of polluting		
3.	causing water or	industries in the Eco-sensitive Zone		
	air or soil or	shall be permitted.		
	noise pollution.			
1	Commercial use	Prohibited (except as otherwise provided)		
ч.	of firewood.	as per the applicable laws.		
	Use or			
	production or	Prohibited (except as otherwise provided)		
5.	processing of			
	any hazardous	as per the applicable laws.		
	substances.			
	Discharge of			
	untreated	Prohibited (except as otherwise provided)		
	effluents and			
6.	solid waste in			
	natural water	as per the applicable laws.		
	bodies or land			
	area.			
		No establishment of new wood based		
		industry shall be permitted within the		
		limits of Eco-sensitive Zone:		
-	New wood based	Provided the existing wood-based		
7.	industry.	industry may continue as per law:		
		Provided further that renewal of licenses		
		of existing saw mills shall not be done on		
		their expiry period.		
		There shall be complete ban on fishing in		
8.	Fishing.	all the water bodies including Orai and		
		Sitamata dam.		
0	Use of plastic	Drobibited with immediate effect		
9.	carry bags.			

			Prohibition on purchase of tendu Patta
			by contractors within 100 meters from
	Durchase	~f	the boundary of the sanctuary. No
10.	Purchase	OI	purchasing places (Fads) shall be
	Tendu Patta.		earmarked at the time of auction of
			Tendu Patta units by the Forest
			Department.

ANNEXURE - 1B LIST OF ACTIVITIES TO BE REGULATED WITHIN ECO-SENSITIVE ZONE

S. No.	Activity	Description
(1)	(2)	(3)
B. Reg	ulated Activities	
11.	Establishment of hotels and resorts.	No new commercial hotels and resorts shall be permitted within one kilometer of the boundary of the Protected Area except for accommodation for temporary occupation of tourists related to Eco friendly tourism activities. However, beyond one kilometer and upto the extent of the Ecosensitive Zone all new tourism activities or expansion of existing activities would in conformity with the Tourism Master Plan and guidelines of National Tiger Conservation Authority.
12.	Construction activities.	(a) No new commercial construction of any kind shall be permitted within one kilometre from the boundary of the Protected Area:Provided that, local people shall be permitted to undertake construction in their

		land for their residential use including the
		activities listed in sub paragraph (1) of
		paragraph 3;
		(b) The construction activity related to small
		scale industries not causing pollution shall
		be regulated and kept at the minimum, with
		the prior permission from the Competent
		Authority as per applicable rules and
		regulations, if any;
		(c) Beyond one kilometre upto the extent of
		Eco-Sensitive Zone construction for bone
		fide local needs shall be permitted and other
		construction activities shall be regulated as
		per Zonal Master Plan.
		(a) There shall be no felling of trees in the
		forest or Government or revenue or private
		lands without prior permission of the
		Competent Authority in the State
		Government.
10		(b) The felling of trees shall be regulated in
15.	Fenning of trees.	accordance with the provisions of the
		concerned Central or State Act and the
		rules made thereunder.
		(c) In case of Reserve Forests and Protected
		Forests the Working Plan prescriptions
		shall be followed.
		(a) The extraction of surface water and
	Commercial water	ground water shall be permitted only for
14	resources	bona fide agricultural use and domestic
14.	including ground	consumption of the occupier of the land;
	water harvesting.	(b) extraction of surface water and ground
		water for industrial or commercial use

		including the amount that can be extracted,				
		shall require prior written permission from				
		the concerned Regulatory Authority;				
		(c) no sale of surface water or ground water				
		shall be permitted;				
		(d) steps shall be taken to prevent				
		contamination or pollution of water from				
		any source including agriculture.				
	Erection of	(i) laving of transmission lines and				
15.	electrical cables	distribution lines				
	and	of 11 KV.				
	telecommunication	OI 11 KV;				
	towers.	(ii) i foinote underground cabinity .				
	Fencing of existing					
16.	premises of hotels	Regulated under applicable laws.				
	and lodges.					
	Widening and					
	strengthening of	Shall be done with proper Environment				
17.	existing roads and	Impact Assessment and mitigation				
	construction of	measures, as applicable.				
	new roads.					
	Movement of	Regulated for commercial purpose, under				
18.	vehicular traffic at	applicable laws.				
	night.					
19.	Introduction of	Regulated under applicable laws.				
	exotic species.					
00	Protection of hill					
20.	slopes and	Regulated under applicable laws.				
	riverbanks.					
21.	Discharge of	Recycling of treated effluent shall be				
	treated effluents in	encouraged and for disposal of sludge or				

	bodies or land	be followed.			
	area.				
	Commercial sign				
22.	boards and	Regulated under applicable laws.			
	hoardings.				
		Non-polluting, non-hazardous, small-scale			
	Small scale	and service industry, agriculture,			
23.	industries not	floriculture, horticulture or agro-based			
	causing pollution.	industry producing adverse impact on			
		environment shall be permitted.			
	Collection of				
04	Forest produce or	Regulated under applicable laws.			
24.	Non-Timber Forest				
	Produce (NTFP).				
25	Air and vehicular	Pegulated under applicable laws			
23.	pollution.	Regulated under applicable laws.			
	Drastic Change of				
26.	Agriculture	Regulated under applicable laws.			
	systems				

ANNEXURE - 1C LIST OF ACTIVITIES TO BE PROMOTED WITHIN ECO-SENSITIVE ZONE.

S. No.Activity(1)(2)		Description (3)		
	Ongoing agriculture and			
	horticulture practices by			
27.	local communities along	Permitted under applicable laws.		
	with dairies, dairy farming,			
	aquaculture and fisheries.			
28.	Rain water harvesting.	Shall be actively promoted.		
29.	Organic farming.	Shall be actively promoted.		
30	Adoption of green technology	Shall be actively promoted		
00.	for all activities.	Shall be actively promoted.		
	Cottage industries including	Shall be actively promoted.		
31.	village artisans, etc.			
32.	Use of renewable energy and	Bio-gas, solar light etc. shall be		
04.	fuels	actively promoted.		

CHAPTER 3

3.1 Introduction

Tourism master plan envisages an advance planning for the activities to be done for development of tourism sector. Tourism is an upcoming sector and Rajasthan has ample scope for tourism. The natural heritage, manmade heritage including old forts and palaces, unique buildings and havelis, dams and water reservoirs, old temples and religious places etc. are the places of importance which attract tourist to all parts of Rajasthan. Apart from all these there are beautiful forests and diverse wildlife inside the forest reserves which makes it adventurous to visit the wild life sanctuaries and National parks of Rajasthan. Pratapgarh (Mainly) & Chittoragrh district have Sitamata wildlife sanctuary which has been notified in year 1979 and being managed accordingly. Ministry of Environment and Forest & Climate Change (MoEFCC) Government of India has notified the Eco Sensitive Zone (ESZ) of Sitamata wildlife sanctuary including 58 villages of district Pratapgarh & Chittorgarh. This tourism master plan is prepared with a view to highlight the importance of tourist places around Sitamata wildlife sanctuary and develop more such places of tourist interest around it so that when the tourism flourishes in Sitamata wildlife sanctuary, the tourist gets the best and comfortable services around the Sitamata wildlife sanctuary and its ESZ.

Rajasthan has emerged as one of the popular tourist destinations in India for both domestic and foreign tourists. The number of tourist arrivals in the state has increased fourfold in the last thirty years.

The state is known for its diversity in terms of natural resources, cultural heritage, historical as well as archaeological wonders and rare wild life. The forts and palaces, heritage hotels, colourful fairs and festivals, local art and handicrafts, etc. has been a unique selling proposition for tourists coming to the state. Pratapgarh is blessed with all types of tourist destinations in the city and around the city and the district. Zonal Master Plan of Sita Mata Wild Life Sanctuary

Of late tourism in Rajasthan was small industry and was largely confined to the elite foreign tourists and domestic pilgrim traffic. Tourist arrivals were restricted to selected places such as Jaipur, Udaipur, Jodhpur, Ajmer, Pushkar and Nathdwara.

However, over the last few decades, due to the focused efforts of Rajasthan Tourism, various State Government agencies, select entrepreneurs / individuals, tourism has grown from an elite and pilgrim phenomenon to a mass phenomenon putting Rajasthan firmly on the foreign and domestic tourist map. Also, as compared to the past, where the tourism in the state meant desert tourism, heritage tourism (forts, palaces, etc.) and pilgrim tourism, today the tourists have a wide canvas of places, attractions and activities to choose from in the state, which enhances the overall tourism experience.

The industry today employs over one lakh people directly and over three lakh people indirectly contributing Rs 2000 Cr. to the State economy. Given the increasingly important role that the sector plays in the overall socioeconomic development of the state, the State Government of Rajasthan has accorded an industry status to tourism from the year 1989.

To promote tourism in the state, the Department of Tourism (DoT), Rajasthan has played a key role where Rajasthan Tourism Development Corporation (RTDC), was established in November, 1978 primarily to act as catalyst by developing tourism infrastructure facilities, particularly by way of basic amenities like accommodation, catering and organized tours / sightseeing facilities.

Tourism in Kota is also emerging in the recent years due to the increasing development of tourist destinations, highlighting of heritage, forest and wildlife areas. It creates demand for new hotels, resorts, guest houses, Yatri-niwas, restaurants, wayside Dhabas, markets etc. It is, therefore, need of the time to have a plan for the development and management of the tourism in the district in the coming 15-20 years.

3.2 Background Information and Statistics

1	Households	178726
2	Total population	867,848
3	Male population	437,744
4	Female population	430,104
5	Urban population	8.28 %
6	Rural population	81.53 %
7	Hindu	95.33 %
8	Muslim	2.95 %
9	Jain	0.04 %
10	Sikh	0.01 %
11	Others	0.00 %
12	Scheduled Tribes (ST)	63.42%
13	Scheduled caste	6.96%
	Children between 0-6	141,751
14	years	(17.81%)
15	Sex ration	983 F/1000M
16	Literacy rate	55.97
17	Population density	195 /sq.km
18	Area of Kota district	4,449 sq km

3.2.1 Statistics of Population of Pratapgarh:

(source : census 2011)

3.2.2 Statistics on Tourism Inflow in Pratapgarh District

S.no	Year	Number of Domestic tourists	Number of Foreign tourists	Number of total tourists
1	2018	50728	8	50736
2	2019	132722	3	132725
3	2020	355127	0	355127
4	2021	444969	0	444969
5	2022	339142	0	339142
Total		1322688	11	1322699

Note :- Every year 5-8 lakh peoples got free entry in the sanctuary during the Sitamata fair. This data is not included in above table.

Though the numbers of tourists shown in the above table belong to Pratapgarh City mainly, but it is expected that about 10-15 % of the tourists visiting Pratapgarh City can prefer going to the new tourist destinations to be developed in the ESZ of Sitamata WLS, as the ESZ villages have great potential of natural heritage sites. Particularly, the rural tourism can get a boost if given proper importance and promotion by the tourism authorities.

3.3 Heritage Sites

3.3.1 Natural Heritage

The Sitamata wildlife Sanctuary is an important natural heritage site in Rajasthan, India. It is home to a diverse range of flora and fauna, including several rare and endangered species. The region's natural heritage encompasses its unique landscapes, biodiversity, and cultural significance.

The hills and valleys of the reserve offer a rugged terrain that is home to dry deciduous forests and thorny shrublands. These forests are dominated by species such as teak, sal, dhok, tendu, and amla, among others. The thorny shrublands are characterized by species such as khejri, ber, and phog, among others. The reserve is also home to several rare and endangered species of fauna, including the Bengal tiger, Indian leopard, sloth bear, Indian wolf, and several species of deer and antelope.

The cultural significance of the region is also an important aspect of its natural heritage. The region is home to several indigenous communities, such as the Meena and Bhil tribes, who have a long history of living in harmony with the natural environment. These communities have developed traditional knowledge and practices that promote the conservation and sustainable use of natural resources in the region.

The conservation efforts in the region aim to protect and enhance this natural heritage while also promoting sustainable development and livelihoods for local communities. The state forest department has implemented several measures, such as wildlife corridors, afforestation programs, and eco-development initiatives, to protect and conserve the natural heritage of the region.

Overall, the Sitamata Wildlife sanctuary is an important natural heritage site that showcases the unique biodiversity and cultural significance of the region. The conservation efforts in the region aim to protect and enhance this natural heritage for future generations.

Sites Believed to be Dating Back to Ramayana Period

Considering the local ancestral and cultural information and beliefs of people the area has historical linkage with Ramayana period and it is believed that Maa Sita lived here at Ashram of Valmiki Rishi and gave birth to Lov & Kush. Later Love-Kush intercepted the horse of Ashvamegh Yagna of Lord Rama and fought with army of shri Ram. Many places like Bhagi Bawri, Valmiki Ashram, Hanuman Mandir, Sitamata temple are regarded as sacred places having reference to the Ramayana period.

<u>Sita Bari</u> - one & only temple in the world which has single statue of hindu goddess Sita Mata (wife of lord Rama) According to Hindu Mythology, this is the place where she enter the core of earth. Here you can see the fragmented mountain. It is also the origin point of river Karma mochini(karmohi) which is the life line of the Sitamata wildlife sanctuary.

Valmiki Ashram - The residence of Famous Sage Valmiki, who wrote the famous hindu Holy book called the Ramayan. Here you can also witness the remnants of huge Banyan Tree, once covering an area of 12 bighas (aprrox 5-acre land).





Valmiki Ashram

Barah Bigha Bargad

Bhrigu (Bhagi) Bawari - Small water holes, according to the myth, it was created by Sage Bhrigu with an arrow and a bow for driking water for goddess Sita, when she was passing by the forest and felt thirsty & tired.



Bhagi Bawdi

<u>Kuntheriya Hill Side</u> - Its a name of a hilly area where the Karmochini River falls from a height, giving a feel of a waterfall. One of the very good places to see various Raptors and Birds.

Jakham River - Which originates from village Jakhamiya near Choti Sadari and mearges with river Mahi at Baneshwar(Distt. Dungarpur). The river is the main lifeline of Sitamata Wildlife Sanctuary.

<u>Karmmochini</u> (Karmohi) River - It Sarts from the core area and it mereges in Jakham river near Dhariyawad town.



Karmmochini river

Forest Wetland Deepon Ka Talab

In Dudhlimata block there is artificial water catchment structure named Deepon Ka Talab. It encompasses an area about 8.0 hectares. It is a high altitude wetland which feeds the channel to Sitamata temple spring. This is an important reservoir of rain water and helps in recharging the hill ranges from which base flow occurs in different parts of the sanctuary.

Deepon ka Talab wetland has immense potential of ecotourism site. Several migratory bird species including water birds, waders and terrestrial birds visit here during winter season. Besides that many wild species come here for drinking water and several of them have home (ecological niche) nearby.

Several invasive alien weeds like *Lantana camara*, *Prosopis juliflora*, *Hyptis suaveolens* etc have invaded heavily in the local vegetation and have occupied places almost all around the wetland. Their eradication and re-introduction of native species and development of birds and other animal habitat is required before developing the ecotourism facilities. There are incidents of fires as well which needs to be controlled.

Sitamata Temple

Considering the local ancestral and cultural information and beliefs of people the area has historical linkage with Ramayana period and it is believed that Maa Sita lived here at Ashram of Valmiki Rishi and gave birth to Lov & Kush. Later Love-Kush intercepted the horse of Ashvamegh Yagna of Lord Rama and fought with army of shri Ram. This place is suited in the centre of Sitamata Wildlife sanctuary. It is believed that Goddess Sitamata spend her last time of exile. It has a very good natural and scenic beauty. It is man point of attraction for tourist. Every year there is a festival in month of **Jaistha** Month which is visited by 5 to 8 lakh people.



Sitamata Temple

Other Natural Historical/Religious site for tourism in & near by the ESZ

S. No.	Name of Site	Location	Geographical Coordinates	Type of site
1.	Hawan Magri Hanuman ji	Inside the PA	N24 15.883 E74 30.331	Religious
2.	Barah Bigha Bargad	Inside the PA	N24 15.318 E74 30.669	Religious

3.	Hanuman Mandir	Inside the PA	N24 15.231 E74 31.241	Religious
4.	Dhebar Shila Mahadev (Kankra)	Inside the PA	N24 17.216 E74 32.993	Religious & Water body
5.	Bulbula Mahadeve	At Border of PA	N24 17.126 E74 34.890	Religious & Water
6.	Jhar Mahadev (Karma Kheda)	Inside the PA	N24 08.255 E74 35.833	Religious & Water body
7.	Dhuni Mata Land View	Out the side PA	-	scenic beauty palace

3.3.2 Man-made Heritage Sites

Jakham Dam

Jakham Dam is a dam located in <u>Pratapgarh District</u> in <u>Rajasthan</u> in <u>India</u>. It is located in Anooppura village of Pratapgarh <u>Tehsil</u>, 32 km from <u>Dhariawad</u> and 35 km from <u>Pratapgarh</u> town. The dam is a main irrigation project of the area. This dam is built on the <u>Jakham river</u>, which originates from a small village Jakhamia in <u>Chhoti Sadri sub</u> division. The Jakham dam's foundation was laid on 14 May 1968 by then chief minister <u>Mohan</u> <u>Lal Sukhadia</u>, however the actual construction-work of the dam started in 1969–70. The dam itself was completed in 1986, but took another twelve years for the completion of this irrigation project in March 2000.

Initially the catchment of the Jakham Dam was 5,015 MCft for irrigating 52,354 hectares of land. Out of its total water retention capacity of 5,015 MCft, the usable water capacity is 4,671 MC ft. The cost of this project is 106.03 crore. The length of this Dam is 253 meters, out of which spill way is in 90 m in length. The area around the dam is hilly and rugged. 13 km away from the main dam, Nangaliya pickup ware has been constructed with Left main canal (39.90 km) and right main canal (34.12 km). Irrigation facility is being provided in 118 villages in Dhariyawad sub-division.



Jakham Dam

<u>Nangaliyan Dam</u> –

This dam is situated on the river Jakham (The biggest river of the Sanctuary area). This dam is loacted 10 kms far from the town Dhariyawad (Distt. Pratapgarh). Its a heaven for bird watching and photography, a home for big crocodiles and Indian Otter, big fishes weighing upto 25-30 kgs. The place where one can enjoy boating in the water of the dam, managed by the Rajasthan Forest Department.



Nangaliyan Dam

Ancient Forts

There are places having remains of old forts that are believed to be dating back to 2000 to 4000 BCE or more. The remains of Ranigarh (in Ranigarh block) and Garhvela (in Pal block) are among the major sites that have evidences of fortification, masonry structures and building material like large size bricks etc. These sites have been under occupation and use by other kings/civilizations also in the successive periods which is evident by remains of Jain temples that would have been built later on. People practice pilgrimage at both Ranigarh and Garhvela sites and have also made makeshift worship places.



Ranigarh (Ramnants of fort) and a makeshift worship place at the site



and piece of Brick



Gadvela (Ramnants of fort)



Archaeological Sites of Prehistoric Human Beings

There are two sites having evidences of prehistoric human settlements. Both sites are locally called 'Likhiya Bhata' (Written stone). The carvings on rocks (referred as Petroglyphs) at both sites are different from each other therefore it is believed that these sites belong to different time period. Further investigations are required to know about history of these sites. Unfortunately, these sites are not regarded sacred by local people hence lots of damage has been done to rock carvings at these sites. Immediate protection and maintenance is required at these sites.



Likhiya Bhata (Keli)



Likhiya Bhata (Gadvela)

Site of Wild Banana (Rock Banana)

At Dhebar Shila Mahadev spring (Kalakhet block) the wild plantain *Ensete superbum* (Rock Banana) is existing which hints the prehistoric geographical corridor linkage with floral element of southern India. Apart from Dhebar Shila, rock banana has also been found in Jhadol and Ogna forest ranges (Udaipur) in Rajasthan. The systematic and phylogenetic investigations are required to know more about the wild banana occurring at Dhebra Shila.

Important Man Made Heritage Tourist Places in and near ESZ:

S. No.	Name of Place	Location	Ownership	Type of building
1	Parsoli Garh	Fall inside the ESZ	Private	Historical
2	Naleshwar Mahadev	Fall inside the ESZ	Local Community	Religious
3	Devgarh Fort	Near By the ESZ	Private	Historical
4	Fort Dhariyawad	Near By the ESZ	Private	Historical
5	Talwada Fort	Near By the ESZ	Private	Historical
6	Pratap Rosort	Near By the ESZ	Private	Historical
7	Bansi Fort	Near By the ESZ	Private	Historical
8	Nathu Bavji Temple	Fall inside the PA	Forest Dpt.	Religious
9	Bheru Bavji	Fall inside the PA	Forest Dpt.	Religious
10	Dhuni Mata Temple	Fall inside the ESZ	Local Community	Religious
11	Dholi Daant Mataji	Fall inside the PA	Forest Dpt.	Religious
12	Amliya Bheruji (Shriguda)	Fall inside the PA	Forest Dpt.	Religious
13	Gadhvela Mataji	Fall inside the PA	Forest Dpt.	Religious
14	Khalediya Bheruji (Khalel)	Fall inside the PA	Forest Dpt.	Religious
15	Takiya	Fall inside the PA	Forest Dpt.	Water Body
16	Mayada Watch tower	Fall inside the ESZ	Forest Dpt.	Scenic beauty
17	Mayada village	Fall inside the ESZ	Revenue Dpt.	Cultural & Scenic beauty
18	Dhar village	Near By the ESZ	Revenue Dpt.	Cultural & Scenic beauty
19	Pungatalab Village	Fall inside the PA	Forest Dpt.	Cultural & Scenic beauty
20	Gidhha Magara	Fall inside the PA	Forest Dpt.	Scenic beauty
21	Arampura village	Fall inside the ESZ	Revenue Dpt.	Cultural & Scenic beauty
22	Gyaspur village	Fall inside the ESZ	Revenue Dpt.	Cultural & Scenic beauty
23	Punja Falan village	Fall inside the ESZ	Revenue Dpt.	Cultural & Scenic beauty

3.3.3 Conservation and Management Strategies of Heritage Sites

Conservation strategies for these heritage sites involve a range of measures aimed at preserving their cultural, historical, and architectural significance. Here are some common conservation strategies:

Documentation and Research: Thorough documentation of the site's history, architecture, and cultural significance is crucial for understanding its unique characteristics and informing conservation efforts. This involves conducting research, surveys, and assessments to gather comprehensive information.

Structural Stability and Restoration: Assessing the structural stability of the heritage site is vital to identify areas in need of restoration or conservation. The restoration process may involve stabilizing foundations, repairing damaged structures, and conserving original architectural features using appropriate materials and techniques.

Preservation of Art and Sculptures: Paying special attention to the preservation and restoration of intricate art, sculptures, and decorative elements is essential. This includes delicate cleaning, conservation of colors and pigments, and protecting them from environmental factors such as pollution and weathering.

Environmental Management: Implementing measures to protect the heritage site from natural and human-induced threats is crucial. This involves monitoring and controlling factors like water ingress, humidity, temperature fluctuations, vegetation growth, and pests that can adversely affect the site's integrity.

Visitor Management: Managing visitor activities and footfall is necessary to minimize potential damage and wear and tear to the heritage site. This can include implementing controlled entry systems, guided tours, and educational programs to raise awareness among visitors about the importance of responsible behaviour.

Community Engagement: Involving local communities in the conservation process fosters a sense of ownership and stewardship. Engaging with the community can include promoting awareness, providing training, and generating employment opportunities related to heritage conservation.

Legal Protection and Policies: Implementing legal frameworks, regulations, and policies that safeguard the heritage site's conservation is essential. This includes designating the site as a protected monument, enforcing heritage laws, and establishing management plans for its long-term preservation.

Sustainable Tourism: Balancing tourism activities with the preservation of the heritage site is crucial. Implementing sustainable tourism practices, such as limiting visitor numbers, creating designated pathways, and promoting responsible tourism, helps minimize the impact on the site.

These conservation strategies aim to ensure the long-term preservation and sustainable management of heritage sites, allowing future generations to appreciate and learn from their cultural and historical significance.

For all these activities necessary permissions as per final ESZ notification and relevant guidelines should be followed.

3.4 Ecotourism

3.4.1 Ecotourism as mentioned in the Eco Tourism Policy-2021

Ecotourism is a form of sustainable tourism within a natural or cultural heritage area where community participation, protection and management of natural resources, culture, indigenous knowledge and practices, environmental education and ethics, as well as economic benefits are fostered and pursued for the enrichment of host community and satisfaction of visitors. According to the United Nation's World Tour Organization (UNWTO), ecotourism refers to forms of tourism which have the following characteristics:

a. All nature-based forms of tourism in which the main motivation of the tourists is the conservation and appreciation of nature as well as the traditional cultures prevailing in natural areas.

- b. It contains educational and interpretation features.
- c. It is generally, but not exclusively, organized by specialized tour operators for small groups. Service provider partners at the destinations tend to be small locally owned businesses.
- d. It minimizes negative impacts upon the natural and socio-cultural environment. Providing alternative employment and income opportunities for local communities;

It supports the maintenance of natural areas which are used as ecotourism attractions by:

- Generating economic benefits for host communities, organizations and authorities managing natural areas with conservation purposes;
- Increasing awareness towards the conservation of natural and cultural assets, both among locals and tourists.

The Ministry of Environment, Forest and Climate Change describes Ecotourism as:

'Responsible travel to natural areas that conserves the environment and improves the well-being of local people'.

Such tourism is low-impact, educational, and conserves the environment while directly benefiting the economic development of local communities. Therefore, the focus of ecotourism is on its educational as well as economic benefits and at the same time is compatible with fragile natural ecosystems. This policy is based on the basic understanding that local communities are the most vital pillar of ecotourism in the state. Ecotourism is an important vehicle for reconciling conservation and economic considerations for local stakeholders and includes most of the low impact tourism in the natural heritage areas which Guidelines for ecotourism in and around protected areas, Ministry of Environment and Forest, 2 June 2011 are facilitated by the local communities as partners in the process. Promoting eco-tourism involves strategies aimed at encouraging responsible travel practices, raising awareness about environmental conservation, and supporting local communities. Here are some eco-tourism promotion strategies:

- a. **Education and Awareness**: Implement educational campaigns to raise awareness among tourists about the importance of eco-tourism and the benefits of sustainable travel practices. This can be done through informative brochures, interpretive signage, visitor centers, and online platforms.
- b. Community Involvement: Engage local communities in eco-tourism initiatives by providing training and employment opportunities. Empowering communities to actively participate in tourism activities fosters a sense of ownership and ensures that local people benefit economically and socially from tourism.
- c. **Conservation Programs**: Collaborate with conservation organizations and local communities to develop and implement conservation programs. These programs may include habitat restoration, wildlife protection, waste management, and sustainable resource utilization to minimize the negative impact of tourism on the environment.
- d. **Partnerships and Collaboration**: Establish partnerships with tour operators, travel agencies, and accommodation providers who prioritize eco-friendly practices. Collaborate with these stakeholders to create eco-tourism packages and experiences that emphasize sustainable tourism practices.
- e. **Interpretation and Guided Tours**: Offer guided tours led by knowledgeable guides who can provide insights into the local ecology, cultural heritage, and conservation efforts. Interpretive signage and information boards can also be placed at key sites to educate visitors about the importance of the ecosystem and conservation measures.
- f. **Supporting Local Products and Services**: Encourage tourists to support local businesses and purchase locally made products, which

contribute to the local economy and promote sustainable development. This may include promoting local handicrafts, organic produce, and locally sourced materials.

- g. **Infrastructure and Facilities**: Develop infrastructure and facilities that align with eco-tourism principles. This includes eco-friendly accommodation options, waste management systems, renewable energy solutions, and sustainable transportation alternatives to minimize the environmental footprint of tourism activities.
- h. **Responsible Visitor Behaviour**: Promote responsible visitor behaviour through the dissemination of guidelines and codes of conduct. Encourage tourists to respect the local culture, wildlife, and natural surroundings, minimize waste generation, and follow designated trails and paths to prevent ecological disturbance.
- i. **Monitoring and Evaluation**: Regularly monitor and evaluate the impact of eco-tourism activities on the environment, local communities, and cultural heritage. This helps identify areas for improvement and ensures that eco-tourism practices remain sustainable and effective.

3.4.3 Eco-tourism/tourism activities to be permitted:

Ecotourism is unique among commercial opportunities in rural areas because, unlike so many other activities, ecotourism works best when it builds on local knowledge and authenticity. A carefully designed ecotourism initiative shall have the potential to contribute both to ecological conservation and local community development.

Any travel focused on experiencing Rajasthan's fairs and festivals which promote eco-tourism and sustainability of local traditions; are defined as nature-based activities exclusively performed to sensitize people about the beauty, richness and fragility of the state's natural and cultural heritage, and shall not just focus on creating destinations in natural area or using natural environment for outdoor activities. Ecotourism activities have to be coordinated by a qualified nature and cultural interpreter trained to entertain and educate the visitors. Following activities may be permitted under eco-tourism activities within the ESZ of Sitamata wildlife sanctuary. if it is satisfying the provisions of the final notification of ESZ and other relevant rules and guidelines:

- i. Boating / River Cruising to view wildlife and experience wilderness;
- ii. Trekking, nature walk, bird and wildlife watching, hiking, flora and fauna observation, photography, etc.;
- iii. Star Gazing in designated sites / forts / other monuments;
- iv. Activities in specified areas of the forests such as jungle safari in vehicles or elephant / camel safari, trekking / nature walk, overnight camping in designated sites, bird watching and study of flora & fauna, etc.
- v. Ecotourism Assets both within and beyond areas administered by the Forest Department: Natural and cultural
- vi. Lodging in campsites, eco-lodges, homestays and guesthouses that are located in an area of natural and/ or cultural beauty, and involves local specificities.

3.4.4 Guidelines for Eco-tourism in ESZ of Sitamata Wildlife sanctuary

The Department of Tourism (DoT), Government of Rajasthan proposes these guidelines for facilitating identification, promotion and development of lesser-known areas having ecotourism potential in addition to popular destinations. At the same time, these guidelines aim for diversification in the range of tourism activities available at destinations and facilitate involvement of the local communities living in, and dependent on peripheral and other areas for their livelihood. The provisions and directions in the final notification of the ESZ of Sitamata WLS. is to be strictly followed along with the provisions of various Acts related to Forests and Environment, viz. Wildlife Protection Act 1972, Forest Conservation Act, 1980, Environment Protection Act, 1986, and the directives and guidelines issued by the Central/ State Government from time to time.

3.5 Developing Tourist Information Centre:

A Tourist Information Centre (TIC) should be developed as a dedicated space outside forest area within a building for interpretive displays, programs, services, and information. It should have support facilities like Audio-visual presentations, café; souvenir kiosks etc. for the conveniences of the tourist. A TIC may be developed by public or private sector following the provisions and directions in the notified ESZ and other relevant guidelines and rules.

3.6 Heritage Trails and Nature Trails:

Eco Sensitive Zone (ESZ) of Sitamata WLS is having water bodies of Karmochini & Jakham river, Jakham and Nagliya Dam. It forms several picturesque points in the ESZ. Important roads also pass through ESZ. There are several points of ecological and natural importance where the naturalists would like to visit and interact with nature. Moreover, there are several tourist sites of natural, social, religious, historical, heritage and cultural importance lying beyond PA boundaries and forest areas which may be connected to the outer world through nature trails. Under such circumstances, it is essential to develop heritage and nature trails in selected areas giving priority to Historical, heritage and natural forest areas. The trails if any falls inside the PA or forest area should follow all the relevant guidelines and provisions of the acts and rules. Development of trails should follow the provisions and directions in the notified ESZ and other relevant guidelines and rules.

3.7 Rural Tourism

Rural Tourism has been advocated to showcase the rural & tribes life, art, culture and heritage at rural locations, to benefit the local community, economically and socially. It also enables interaction between the tourists and the locals for a more enriching & rewarding tourism experience. Rural tourism is essentially an activity which takes place in the countryside. It is multifaceted and may entail farm/agricultural tourism, cultural tourism, nature tourism, adventure tourism, and eco-tourism. Rural tourism has certain typical characteristics like; it is experience-oriented, the locations are sparsely populated, it is predominantly in natural environment, it meshes with seasonality and local events, and is based on preservation of culture, heritage and traditions. Government of Rajasthan intends to promote village/rural tourism and spread its socio-economic benefits to rural and backward areas in the state. Rural areas provide many opportunities for the development of tourism, as an alternative means of income-generation. Land is inexpensive in comparison to urban areas; the environment is green and unpolluted; and buildings which previously served other purposes can easily be refurbished. Some of the potential benefits include generation of additional/off-farm income, job creation, farm support, landscape conservation, services retention, and support to rural arts and crafts, nature conservation, environmental improvements, and enhanced role of women.

Rajasthan Government has notified the "Rajasthan Rural Tourism Scheme 2022" to benefit the local community, economically and socially. Under this scheme following units are permitted:

- i. Rural Guest House
- ii. Agro tourism Unit
- iii. Camping Site
- iv. Caravan Park
- v. Home stay (Paying Guest house)

These rural tourism units may be permitted in the rural areas falling in the ESZ of Sitamata WLS as per the provisions in the final notification of ESZ and other relevant guidelines in this regard.







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