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PREPARATION OF ZONAL MASTER PLAN OF ECO-SENSITIVE ZONES OF NATIONAL PARKS AND SANCTUARIES LISTED IN CLUSTER 1 OF MADHYA PRADESH

ZONAL MASTER PLAN

SANJAY NATIONAL PARK AND SANJAY DUBRI WILDLIFE SANCTUARY

VOLUME 1

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DEFINITION

Eco-Sensitive Zone. Eco-Sensitive Zones (ESZs) are areas notified by the Ministry of Environment, Forests and Climate Change (MoEFCC), Government of India around Protected Areas, National Parks and Wildlife Sanctuaries. The purpose of declaring ESZs is to create some kind of "shock absorbers" to the protected areas by regulating and managing the activities around such areas.

Ecologically Sensitive Area. ESA refers to an area around protected areas, National parks and Wildlife sanctuaries which acts as a transition zone from areas of high protection to areas involving less protection. Ecologically Sensitive Areas (ESAs) have been identified and notified by the Ministry of Environment, Forests and Climate Change (MoEFCC), Government of India since 1989.

Ecosystem Services. The Millennium Ecosystem Assessment defined Ecosystem Services as "the benefits people derive from ecosystems".

Environmentally Sensitive Area. Environmentally sensitive areas (ESAs) are landscape elements or places which are vital to the long-term maintenance of biological diversity, soil, water or other natural resources both on the site and in a regional context. They include wildlife habitat areas, steep slopes, wetlands, and prime agricultural lands.

Protected Area. A protected area is a clearly defined geographical space, recognized, dedicated and managed, through legal or other effective means, to achieve the long-term conservation of nature with associated ecosystem services and cultural values. (IUCN Definition 2008)

Core Zone. Core zone formed by undisturbed ecosystems and characteristic of a specific region. It is the area with the greatest protection, it only allows activities that do not interfere in the conservation of the ecosystem and must ensure the protection of biodiversity in the long term.

Buffer Zone. Buffer zones are areas created to enhance the protection of a specific conservation area, often peripheral to it. Within buffer zones, resource use may be legally or customarily restricted, often to a lesser degree than in the adjacent protected area so as to form a transition zone.

National Park. A national park is a park in use for conservation purposes. Often it is a reserve of natural, semi-natural, or developed land that a sovereign state declares or owns.

Wildlife Sanctuary. Wildlife sanctuaries refer to an area which provides protection and favorable living conditions to the wild animals. Wildlife Sanctuary is a natural habitat, owned by the government or private agency that safeguards particular species of birds and animals.

Zonal Master Plan (ZMP). Zonal Development/Master Plan is a detailed plan for a Zone conceived and prepared within the framework of a Master Plan containing proposals for various land uses, roads and streets, parks and open spaces, community facilities, services and public utilities, etc.

Carrying Capacity. As per the WTO (World Trade Organization) carrying capacity is defined as "The maximum number of people that may visit a tourist destination at the same time, without causing destruction of the physical, economic, socio-cultural environment and an unacceptable decrease in the quality of visitors' satisfaction."

Keystone Species. A keystone species is a plant or animal that plays a unique and crucial role in the way an ecosystem functions. Without keystone species, the ecosystem would be dramatically different or cease to exist altogether.

ABBREVATIONS

SNP	Sanjay National Park
SDTR	Sanjay Dubri Tiger Reserve
CBD	Convention on Biological diversity
COP	Conference of parties
ESA	Eco-Sensitive Area
ESZ	Eco-Sensitive Zone
MOEFCC	Ministry of Environment, Forest & Climate Change
MPTB	Madhya Pradesh Tourism Board
NP	National Park
PA	Protected Area
SEPL	Socio- ecological Production Landscape
ULB	Urban Local Body
WLS	Wildlife Sanctuary
ZMP	Zonal Master Plan

CHAPTER 1 PLANNING A GREEN LANDSCAPE

1.1 The vision

The Zonal Master Plan for Sanjay Dubri Eco-Sensitive Zone (ESZ) advances a vision aimed at appreciating the vital ecosystem services of the landscape, improving the socio-economic situation of local communities, building diversified and resilient livelihood options, promoting nature-based tourism, and fostering participatory conservation of natural assets. The section highlights water resource management issues caused by overuse of existing natural resources, the need for diversified agriculture and alternative livelihoods, and the importance of connectivity corridors as part of holistic, participatory conservation.

1.2 Objectives of management

Management objectives focus on sustainable use and regeneration of resources, maintenance of ecosystem services, enabling sustainable livelihoods, promoting nature-based tourism, scientific habitat management, and building an integrated governance framework for the ESZ. Emphasis is placed on balancing community needs, ecological health, and institutional effectiveness.

1.3 Short-term objectives

Short-term objectives prioritize reducing human-animal conflicts, conserving wildlife habitats, promoting sustainable livelihoods, rejuvenating groundwater, supporting agriculture, and regulating tourism and residential development to lessen the pressures on protected areas and local resources.

1.4 Long-term objectives

The long-term strategy is to promote habitat connectivity, reduce dependence on groundwater, foster sustainable development and tourism, improve socio-economic conditions, and develop robust institutional frameworks for green infrastructure, waste management, and pollution control.

1.5 Problems in achieving objectives

Challenges include limited awareness, bureaucratic and institutional hurdles, lack of capacity, operational risks within ESZ, and conflicts from fragmented decision-making among involved agencies, requiring improved inter-agency coordination and community engagement.

CHAPTER 2 : ESZ ZONATION PLAN AND GUIDELINES

2.1 Ecofriendly Suggestive Land use planning

The eco-sensitive zone (ESZ) Zonal Master Plans do not define any land use or land cover in the ESZ Master Plan.

Land use planning was based on a detailed environmental sensitivity mapping methodology, integrating natural resource properties (wildlife habitats, water bodies, land use, slope, administrative boundaries) with the intensity of human activities (vehicular movement, transmission lines, agriculture, settlements), enabling a composite zoning for management and protection

2.1.1 Environmental Sensitivity Mapping:

The ESZ's environmental sensitivity was evaluated using parameters such as wildlife habitats (dahas), water bodies, stream orders, administrative boundaries, and slope. Key wildlife habitats and riverbed stretches were marked as highly sensitive, while land cover, wetlands, and buffer areas received varying sensitivity rankings as per mapping outputs (Refer to Volume 2, Annexure-2, Chapter 2, Section 2.1.1, Table 2 to 10, Map 1 to 23)

2.1.2 Human Activity and Impact assessment:

An assessment of human impact considered vehicle traffic, population density, agriculture, fuel use, groundwater extraction, and livestock, demonstrating the significant cumulative pressure on sensitive ecological zones, shaping the management zoning and priorities (Refer to Volume 2, Annexure-2, Chapter 2, Section 2.1.2, Table 11 to 29, Map 24)

2.1.3 Composite Zoning (Spatial zones):

The comprehensive assessment led to the definition of multiple management zones: Eco-development, Eco-development Future Settlement, Camping, Ecological sensitive, Restoration, and Green buffer zones, considering spatial concentration of sensitive habitats and eco-tones for regulated development (Refer to Volume 2, Annexure-2, Chapter 2, Section 2.1.3, Exhibit 3, Map 25)

2.1.4 Application of Zoning in regulatory framework:

Zoning regulations integrate spatial analysis with the ESZ regulatory framework, directing that project approvals follow the zone's specific prescriptions for promoted, regulated, or prohibited activities, using an SOP for project scrutiny (Refer to Volume 2, Annexure-2, Chapter 2, Section 2.1.4)

2.2 Areas for Sustainable Development & Nature Conservation

Eco-development areas are allowed limited human activity; future settlement areas guide managed expansion; camping zones promote low-impact tourism; conservation and green buffer areas cover sensitive habitats where conservation and plantations are prioritized (Refer to Volume 2, Annexure-2, Chapter 2, Section 2.2 and 2.3).

2.3 Areas for Eco-Restoration

Degraded areas identified for restoration with community-driven interventions to reinstate ecosystem services and potential future community or conservation usage (Refer to Volume 2, Annexure-2, Chapter 2, Section 2.4).

2.4 Prohibited activities in ESZ

Activities like mining, polluting industries, establishment of sawmills, commercial firewood use, major hydroelectric projects, hazardous substances, untreated effluent discharge, wood-based industries, and goat farming are outrightly prohibited throughout all zones (Refer to Volume 2, Annexure-2, Chapter 2, Section 2.5).

2.5 Regulated activities in ESZ

Regulated activities (hotels/resorts, construction, tree felling, resource extraction, water and power infrastructure, road building, vehicular movement, introduction of exotics, waste discharge, small scale industry, tourism activities) are subject to approval contingent on location and must align with the specific zoning and management guidelines (Refer to Volume 2, Annexure-2, Chapter 2, Section 2.6).

2.6 Promoted activities in ESZ

Promoted activities include sustainable agriculture, rainwater harvesting, organic farming, green technology, cottage industries, renewable energy, agro-forestry, skill development, and environmental awareness, aiming to enhance community livelihoods while supporting conservation (Refer to Volume 2, Annexure-2, Chapter 2, Section 2.7).

CHAPTER 3 THEME PLANS

3.1 Addressing Conservation-Development Issues

Recognizing the risks of unplanned settlement expansion and resource exploitation is a key issue and indicated towards the necessity for regulating land use and infrastructure, and proposes strict buffers around water bodies, wetlands, streams, and other key ecological features. Sustainable land management is promoted through best practices like linear infrastructure planning and eco-friendly construction guidelines that minimize noise, watercourse pollution, and habitat fragmentation. (Refer to Volume 2, Annexure-2, Chapter 3, Section 3.1).

Importantly, the plan mandates that all new developments adhere to green building standards, stringently limiting the size and impact of settlements. By integrating community rights (such as Recognition of Forest Rights) and decentralized decision-making, it aims to foster an inclusive, participative approach to land use that is sensitive to both forest preservation and local aspirations.

Findings. This theme pushes for conservation-development integration hinging on enforcing rigorous zoning, advancing community-based planning, and maintaining compliance with established regulatory frameworks.

3.1.1 Development of Green Infrastructure

Green infrastructure is presented as essential not only for ecosystem integrity but also for community well-being and climate resilience (Refer to Volume 2, Annexure-2, Chapter 3, Section 3.1.1). Strategies are proposed for preserving.

- open space
- developing parks and community gardens
- promoting compact and mixed-use development
- building walkable neighbourhoods with trails and bicycle routes

The plan encourages the adoption of local species for landscaping, advocates for community involvement in green infrastructure design, and mandates sustainable building codes.

Protecting natural areas and creating green corridors are further highlighted as integral to both environmental protection and the enhancement of Bandhavgarh's sense of place.

3.1.2 Protection of Wildlife through Community-Based Interventions

Recognizing that effective conservation is inseparable from community participation, this theme details mechanisms for local involvement in wildlife protection. Bandhavgarh's Tiger Protection Force (TPF), comprised of local youth and ex-servicemen, exemplifies this integrative approach by pairing modern law enforcement with grassroots stewardship. Community-based activities include environmental patrols, fire management, the engagement of children in conservation, and the capping of wells to prevent wildlife hazards. (Refer to Volume 2, Annexure-2, Chapter 3, Section 3.1.2)

Community-Based Interventions also champions bio-fencing using living plant barriers instead of wires to mitigate crop depredation by wildlife.

3.1.3 Fire Control and Prevention Measures

Managing forest fires is singled out as a critical ecological and social priority. Most fires in Bandhavgarh's ESZ are attributed to human activity, with deliberate burning for NTFP collection, accidental sparks, and field clearing among the chief causes (Refer to Volume 2, Annexure-2, Chapter 3, Section 3.1.3). Preventative strategies include;

- cutting and maintaining fire lines,
- creating fire watch towers at strategic locations
- mobilizing community fire-fighting squads

The plan emphasizes education and vigilance, particularly during festivals or high-risk seasons, and encourages technology integration (such as mobile communications and satellite data) for rapid response.

Findings. Reducing forest fire incidence in Bandhavgarh requires both systematic preventive infrastructure and robust community engagement to ensure rapid detection and containment.

3.1.4 Protection of Wildlife and Its Habitat

While current wildlife densities in parts of the ESZ may be modest, proactive habitat management is regarded as vital for future wildlife population recovery. Strategies revolve around intensive patrolling by forest guards, especially during monsoon or at night, and the establishment of rigorous protocols for intelligence gathering, waterhole monitoring, and surveillance for illegal activities like poaching. (Refer to Volume 2, Annexure-2, Chapter 3, Section 3.1.4).

Collaboration with local police and continuous community vigilance is advocated, as are specific anti-poaching measures such as tracking possible electrocution sites or iron traps. Notably, operational transparency and coordination with district authorities are considered essential for long-term habitat security.

Findings. The ESZ's habitat protection is both a physical and organizational endeavour, dependent on dedicated staffing, strong oversight, and community collaboration.

3.1.5 Building Construction and Approval System

A key institutional reform in the ESZ is the establishment of a construction authorization authority to scrutinize and approve all building activities. This body will enforce alignment with the Zonal Master Plan, support planned resettlement and rehabilitation, and prevent unauthorized development. The introduction of this authority reflects the plan's commitment to structured, transparent urbanization and guarantees that future growth will not compromise conservation values. (Refer to Volume 2, Annexure-2, Chapter 3, Section 3.1.5).

Findings. A centralized oversight of construction is deemed essential to preserving Bandhavgarh's ecological integrity while allowing necessary socio-economic development.

3.1.6 Phase-out of the Beohari-Madwasgram Rail Line

After the privatization drive of the Indian Railways new opportunity has emerged to phase out the railway line passing through the national park. Alternate route can be planned and constructed circumventing the national park from Beohari to Madwasgram. (Refer to Volume 2, Annexure-2, Chapter 3, Section 3.1.6).

3.2 Restoration of Soil Moisture Regime

This theme addresses the challenges of soil degradation and groundwater depletion, proposing site-specific techniques such as conservation agriculture, integrated nutrient management, dense tree planting, controlled livestock grazing, contour bunding, check dams, and vegetative barriers. The theme further proposes for the rejuvenation of traditional water harvesting structures and use of vegetative cover to reduce soil erosion.

The restoration of soil thematic plan proposes for monitoring and local ownership of restoration projects as enablers of sustainability, placing community-led watershed management with funding convergence through MGNREGS and related schemes. (Refer to Volume 2, Annexure-2, Chapter 3, Section 3.2).

3.3 Restoration of Corridors and Connectivity

Ensuring habitat connectivity is a central conservation goal, particularly to mitigate wildlife movement fragmentation and ensuing human-wildlife conflict. The plans proposes for the following actions;

- afforestation in corridors
- development of water sources
- removal of invasive weeds
- acquisition of private or revenue lands to consolidate critical passages

Furthermore, technological interventions and infrastructure, such as seismic sensors for elephant intrusion alerts and underpasses/overpasses on busy road segments, are highlighted for conflict prevention. (Refer to Volume 2, Annexure-2, Chapter 3, Section 3.3).

3.4 Rainwater Harvesting

Faced with declining groundwater levels, the plan prioritizes rainwater harvesting as a water security and ecosystem resilience strategy. Rainwater harvesting is mandated for all government and new private establishments over a specified size, with agricultural and non-agricultural applications showcased through diverse pilot projects. (Refer to Volume 2, Annexure-2, Chapter 3, Section 3.4).

Findings. A culture of rainwater capture supported by institutional incentives holds the key to Bandhavgarh's sustainable water future.

3.5 Municipal Waste Management

Unregulated waste disposal has emerged as a threat to the aesthetic, ecological, and public health aspects of the ESZ, especially in and around tourism hotspots. The plan envisions a decentralized solid waste management system which incorporates;

- door-to-door collection
- source segregation
- composting of organic waste
- recycling of non-biodegradables

Emphasis is placed on capacity building of local self-help groups (SHGs), establishment of material recovery facilities (MRFs), and awareness campaigns to instill responsible waste behaviour, and to lead towards collaborations with the Swachh Bharat Mission and District

Administration for efficient service delivery. (Refer to Volume 2, Annexure-2, Chapter 3, Section 3.5).

3.6 Wastewater Treatment

The growing number of households, tourist facilities, and commercial establishments has increased wastewater discharge, posing pollution risks to water bodies and soil. The plan proposes decentralized wastewater treatment systems (DEWATS), particularly in cluster villages and tourism promotion areas.

Greywater reuse for agriculture and landscaping is encouraged to reduce freshwater demand, along with drainage planning integration with green infrastructure like vegetative swales and infiltration trenches to ensure eco-friendly filtration. (Refer to Volume 2, Annexure-2, Chapter 3, Section 3.6).

3.7 Solid Waste Management

While municipal waste is addressed broadly, the plan specifically focuses on handling domestic, commercial, and tourism-related solid waste in a sustainable manner with the ESZ. It underscores the need for segregation at source, home composting, and community compost units.

The plan proposed for restricted plastic use and awareness campaigns around zero-waste practices are emphasized. The plan recommends each village to prepare its own solid waste action plan and to localized solutions, behavioural change, and systematic implementation. (Refer to Volume 2, Annexure-2, Chapter 3, Section 3.7).

3.8 Bio-Medical Waste Management

Health facilities generate biomedical waste which, if improperly handled, poses serious environmental and health hazards. The plan calls for strict segregation, labelling, and disposal protocols aligned with CPCB guidelines. It also recommends mapping of all biomedical waste generators, periodic training of medical staff, and linking rural health centres to authorized disposal service providers.

Though biomedical waste volumes are small in rural areas, their impact can be disproportionately large. Hence, safe disposal ensures health system resilience and protects water and soil quality in ecologically fragile areas. (Refer to Volume 2, Annexure-2, Chapter 3, Section 3.8).

3.9 Management of Storm Water

Urbanized pockets and new infrastructure often alter natural drainage patterns, leading to flooding and erosion. This thematic plan promotes the integration of stormwater planning with landscape design. (Refer to Volume 2, Annexure-2, Chapter 3, Section 3.9). The plan recommends intervention on the lines of;

- vegetative swales
- rain gardens
- proper slope alignment for drains
- restoration of natural nullahs
- restoration of check bunds

3.10 Vehicular Traffic Control

The movement of high-speed vehicles, especially along highways and district roads cutting through wildlife corridors, poses a direct threat to animal populations. (Refer to Volume 2, Annexure-2, Chapter 3, Section 3.10). The plan advocates for;

- speed regulation
- signages
- wildlife crossings
- time-based vehicle restrictions
- designated transport corridors
- eco-friendly e-vehicles for local mobility and tourism

3.11 Management of Resource Extraction

Illegal sand mining, stone quarrying, and over-harvesting of fuelwood or medicinal plants are depleting natural resources in the ESZ. (Refer to Volume 2, Annexure-2, Chapter 3, Section 3.11). The theme plan proposes

- mapping extraction hotspots
- strengthening surveillance
- promoting regulated community harvesting with rotational use
- alternative energy promotion (e.g., LPG, solar cookers)

The approach shifts from prohibition to regulated and sustainable use, ensuring that communities can still access resources without endangering ecological integrity.

3.12 Management of Hazardous Waste

The presence of agrochemical residues, oil waste from transport, and occasional industrial runoff poses toxic threats to the environment. (Refer to Volume 2, Annexure-2, Chapter 3, Section 3.12). The recommendations establish.

- collection centres for hazardous waste
- launching awareness campaigns for safe disposal
- launching awareness campaigns for farmers and transport operators.

3.13 Surface and Ground Water Withdrawal

With groundwater being over-exploited for irrigation and domestic use, the plan stresses the importance of mapping all extraction points and regulating usage through permits. It promotes water metering, drip irrigation, and community-based groundwater monitoring. The plan also suggests for policy formulation for limiting water-intensive crops in fragile areas are also suggested. (Refer to Volume 2, Annexure-2, Chapter 3, Section 3.13).

3.14 Protection of the Source Water

Natural springs, ponds, and recharge zones are ecologically and culturally significant. The plan proposes for a participatory source protection plans with local user groups and village councils on a focus of (Refer to Volume 2, Annexure-2, Chapter 3, Section 3.14);

- afforestation
- fencing of recharge areas
- banning of waste disposal around source waters.

3.15 Development of Resilience to Climate Change

Climate vulnerabilities such as erratic rainfall, rising temperatures, and increased forest fires necessitate a proactive strategy. (Refer to Volume 2, Annexure-2, Chapter 3, Section 3.15). This includes the promotion of the following;

- drought-resistant crops
- fuel-efficient technologies
- early warning systems
- institutional preparedness

The plan calls for integration with State Action Plans on Climate Change (SAPCC). (Refer to Volume 2, Annexure-2, Chapter 8, Section 8.2).

3.16 Tourism and Heritage Conservation (Sub-Zonal Tourism Plan)

The plan proposes a conservation-compatible and community-oriented activity, grounded in the region's natural beauty and rich cultural heritage. The plan aims to minimize ecological disruption while creating local livelihood opportunities through a carefully zoned and participatory tourism model. (Refer to Volume 2, Annexure-2, Chapter 3, Section 3.16).

3.16.1 Vision and Objectives

The tourism vision emphasizes fostering low-impact, eco-sensitive tourism that enhances environmental education, supports cultural preservation, and provides direct economic benefits to local communities. The objectives include promoting nature and heritage-based tourism, improving community capacities, and ensuring infrastructure aligns with sustainability principles.

3.16.2 Site Identification

Potential tourism locations were identified based on ecological sensitivity, scenic appeal, and cultural significance. Sites such as Nebuha, Banjari, Juri, Thadipathar, and Dev Fort have been prioritized for eco-tourism interventions. These locations represent a blend of natural attractions (rivers, meadows, forests) and cultural heritage (temples, tribal settlements, prehistoric caves), offering immersive visitor experiences.

3.16.3 Tourism Infrastructure

The plan proposes infrastructure that is minimal, eco-friendly, and locally managed. Key components include:

- Eco-campsites, homestays, and interpretation centres.
- Nature trails, bird-watching platforms, and signage systems.
- Use of local materials (bamboo, stone, mud) and renewable energy (solar lighting, dry toilets). Infrastructure is designed not just to serve visitors but to generate employment for local youth and women, especially through operation of facilities and hospitality services.

3.16.4 Capacity Building of Communities

Community empowerment is central to the tourism model. The plan advocates for:

- Training in hospitality, guiding, handicrafts, and local cuisine.

- Formation of village tourism committees and SHGs to manage and govern tourism operations.
- Exposure visits to successful eco-tourism sites and support for entrepreneurship.

3.16.5 Interpretation Centres

To foster environmental and cultural awareness, interpretation centres are proposed at major tourism nodes. These centres will offer curated displays on wildlife, forest ecology, local traditions, and tribal knowledge systems using audio-visual tools and locally sourced content. They also serve as orientation points for responsible tourism practices.

3.17 Agriculture and Livestock Management

Traditional agriculture and unregulated grazing are degrading forest fringes. The plan recommends sustainable practices such as agroforestry, organic farming, improved livestock breeds, and stall feeding. It promotes fodder development, training, and market linkages for alternative crops. (Refer to Volume 2, Annexure-2, Chapter 3, Section 3.17).

3.18 Cottage Industries Promotion

The ESZ has rich potential for local entrepreneurship in crafts, forest products, and cultural goods. This thematic plan promotes training, design support, branding, and digital marketing platforms for SHGs and artisans. Convergence with skill development programs is also emphasized to diversify the rural economy and reducing forest dependency. (Refer to Volume 2, Annexure-2, Chapter 3, Section 3.18).

3.19 Abatement of Pollution

Air, water, noise, and land pollution from roads, settlements, and tourism activities are rising within the ESZ (Refer to Volume 2, Annexure-2, Chapter 3, Section 3.19). The plan focuses on proactive pollution control/mitigation measures such as;

- dust suppression
- bioremediation of contaminated sites
- regulated use of firecrackers
- plantation of buffer belts
- continuous pollution monitoring and early warning systems

3.20 Human-Wildlife Conflict (HWC) Management

HWC incidents (crop damage, livestock loss, and human casualties) are increasing.

The plan proposes bio-fencing, compensation schemes, early warning systems, and training of community response teams to tackle the growing issues. Long-term strategies include habitat restoration and better land-use planning to reduce interface zones identified within the ESZ. (Refer to Volume 2, Annexure-2, Chapter 3, Section 3.20, Table-3)

CHAPTER 4 LIVELIHOOD ISSUES

4.1 Stakeholder Consultation

The plans highlights the extensive stakeholder engagement process conducted to understand the socioeconomic realities and livelihood challenges of the communities residing in the Sanjay Dubri ESZ. Participatory Rural Appraisals (PRAs), Focus Group Discussions (FGDs), and semi-structured interviews were held in several villages including Thadipathar, Khokra, and Bastua.

These interactions provided critical insights into existing livelihood dependencies, perceptions about conservation policies, and aspirations for alternative income sources. The consultations revealed that most households rely heavily on forest resources such as fuelwood, fodder, and Non-Timber Forest Products (NTFPs), and face seasonal unemployment, inadequate access to markets, and lack of skill-based employment options. Women and marginalised groups particularly voiced the need for inclusive livelihood strategies and greater institutional support. (Refer to Volume 2, Annexure-2, Chapter 4, Section 4.1)

4.2 Promotion of Eco-Development Activities

In response to the concerns raised during consultations, the plan proposes a wide range of eco-development activities to reduce dependence on forest-based resources while enhancing local incomes. These activities are environmentally sustainable, locally appropriate, and economically viable. (Refer to Volume 2, Annexure-2, Chapter 4, Section 4.2). Proposed interventions include:

- Setting up of community nurseries for afforestation and native plant propagation.
- Promotion of vermicomposting, mushroom cultivation, organic farming, and bio-fencing.
- Livelihood diversification through, beekeeping, poultry rearing, and backyard livestock units.
- Establishment of Goshalas (cattle shelters) to reduce open grazing pressure on forests.
- Pilot interventions such as homestays under eco-tourism initiatives, bamboo-based crafts, and SHG-led food processing enterprises.

The eco-development activities are designed not only to supplement incomes but to create a sense of ownership and responsibility among local communities toward the conservation of natural resources. Successful examples from villages like Juri and Khokra serve as scalable models.

4.3 Micro-Plan Preparation

The plan describes the process of preparing **village-level micro-plans**, which serve as bottom-up instruments for integrated livelihood and conservation planning. The preparation process involves detailed baseline surveys, mapping of natural resources, household profiling, and vulnerability assessments. Each micro-plan identifies livelihood priorities, resource gaps, potential interventions, and capacity-building needs. Emphasis is placed on customizing plans to local contexts, such as village-specific dependence on NTFPs or proximity to tourism zones

and aligning them with available government schemes and forest department resources. (Refer to Volume 2, Annexure-2, Chapter 4, Section 4.3)

Micro-plans are developed through participatory processes involving Gram Sabhas, Eco-Development Committees (EDCs), and village-level stakeholders to ensure legitimacy, ownership, and relevance. They also serve as a tool for planning eco-tourism-linked initiatives and identifying convergence opportunities across departments.

4.4 Implementation of Micro-Plan

The successful implementation of micro-plans depends on institutional convergence and strong community institutions. (Refer to Volume 2, Annexure-2, Chapter 4, Section 4.4). The plan recommends:

- Leveraging existing government programs such as NRLM, MGNREGA, and PMKSY to finance micro-plan activities.
- Operationalizing **EDCs and JFMCs** as the key institutions for delivery, monitoring, and grievance redressal.
- Building the capacities of community members through **training, exposure visits**, and **technical handholding**.
- Setting up **monitoring frameworks** that assess progress through defined indicators (e.g., household income diversification, forest dependence reduction, women's participation).

Pilot projects and eco-development clusters are proposed to demonstrate impact before scaling up to all 90+ villages identified within the ESZ. This phased approach ensures adaptive learning and community feedback integration.

CHAPTER 5 SUB-ZONAL TOURISM MASTER PLAN

5.1 Promotion of Sustainable Tourism

Tourism in the Sanjay Dubri ESZ is positioned as a driver of conservation-compatible development. The chapter begins with a vision to build a nature-based, community-led tourism economy that is ecologically benign, culturally enriching, and economically empowering. A key tenet of the strategy is spatial zoning that delineates tourism activities based on ecological sensitivity and community readiness. (Refer to Volume 2, Annexure-2, Chapter 5, Section 5.1)

5.1.1 Vision and Objectives for the Sector

The tourism vision emphasizes creating a network of low-impact tourism hubs offering wildlife, cultural, and rural experiences that align with conservation goals (Refer to Volume 2, Annexure-2, Chapter 5, Section 5.1.1). The objectives include:

- Enhancing local livelihoods through eco-tourism.
- Reducing negative environmental impacts through regulation and zoning.
- Promoting Sanjay Dubri as a destination with rich biodiversity, scenic landscapes, and cultural uniqueness.

5.1.2 Tourism Assets, Zones and Circuits

The various features are mapped and classified as existing and potential tourism assets into:

- **Natural attractions** like the Banas River, meadows of Birchuli, and scenic valleys.
- **Cultural and man-made heritage** such as prehistoric rock shelters, temples, and traditional villages.

The zones are defined into Core Tourism Zone (CTZ), Buffer Tourism Zone (BTZ), and Community Ecotourism Zone (CETZ), each catering to specific tourism themes and management intensities (Refer to Volume 2, Annexure-2, Chapter 5, Section 5.1.2). Furthermore, Tourism circuits are proposed around:

- **Marwasgram**, connecting to cultural villages.
- **Bandhavgarh**, forming a wildlife heritage route.
- **Thadipathar and Nebuha**, as eco-camping and river-side tourism sites.

5.1.3 Potential Tourism Sites, Zones and Circuits

Site-specific assessments were carried out for developing infrastructure and experiences at locations such as:

- **TPA-1: Nebuha**, with eco-camps and nature trails.
- **TPA-2: Banjari**, with homestays, cultural events, and interpretation centres.

These circuits integrate forest trails, water bodies, heritage monuments, and tribal settlements into comprehensive visitor itineraries. (Refer to Volume 2, Annexure-2, Chapter 5, Section 5.1.3).

5.1.4 Tourism Forecast and Challenges

Visitor projections indicate steady growth, with tourism expected to rise 5–8% annually (Refer to Volume 2, Annexure-2, Chapter 5, Section 5.1.4). However, several challenges are identified:

- Poor last-mile connectivity and road conditions.

- Limited trained human resources.
- Absence of standardized eco-tourism services.
- Risk of carrying capacity breaches and unmanaged waste.

5.1.5 Delineation of Tourism Promotion Areas (TPAs)

To address spatial and regulatory concerns, two **Tourism Promotion Areas** (Refer to Volume 2, Annexure-2, Chapter 5, Section 5.1.5) are delineated:

- **TPA-1 (Nebuha)** and **TPA-2 (Banjari)** are prioritized for infrastructure development.
- Government land parcels are mapped for eco-lodges, watch towers, sanitation blocks, and interpretation nodes.
- Activities permitted in each TPA are clearly defined, with environmental safeguards and stakeholder roles assigned.

5.1.6 Assessment of Carrying Capacities of TPA

The plan presents a carrying capacity framework, including:

- **Physical capacity** (visitor footfall, vehicle limits, trail width).
- **Social capacity** (tolerance of local communities).
- **Ecological capacity** (impact on biodiversity, resource use).
- **Infrastructure capacity** (sanitation, waste, water availability).

Detailed methodology and calculations are provided for TPA-1 (Refer to Volume 2, Annexure-2, Chapter 5, Section 5.1.6), including thresholds for daily visitors and intervention points to avoid ecological degradation.

5.2 Conservation Education

The tourism strategy is closely linked to environmental education (Refer to Volume 2, Annexure-2, Chapter 5, Section 5.2). This section outlines:

- Establishment of interpretation centres, signage, and educational trails.
- Community-led storytelling on flora, fauna, and folklore.
- Outreach programs in local schools and institutions to foster conservation ethics.

Interactive materials, mobile apps, and digital kiosks are proposed to enhance awareness among tourists and residents alike.

5.3 Management Guidelines for Tourism

To maintain ecological integrity and ensure quality visitor experiences, and lays out comprehensive management guidelines (Refer to Volume 2, Annexure-2, Chapter 5, Section 5.3):

- Codes of conduct for tourists, guides, and tour operators.
- Regulatory framework for homestay registration, guide licensing, and monitoring.
- Waste management systems, vehicle permits, and timing regulations.
- Formation of Tourism Management Committees (TMCs) for governance.

Tourism development is to be continuously evaluated through participatory monitoring, feedback collection, and third-party audits to uphold environmental standards and equity in benefit sharing.

CHAPTER 6 RESEARCH, MONITORING, AND TRAINING

6.1 Prioritization of Research and Monitoring

The plan emphasizes the need for targeted research to support science-based policy making and adaptive management. (Refer to Volume 2, Annexure-2, Chapter 6, Section 6.1). Priority areas include:

- Conservation of key species (especially gharial and other aquatic fauna),
- Monitoring changes in water quality and flow regimes of the Son River and its tributaries,
- Vegetation mapping and forest health assessments,
- Socio-economic monitoring of communities dependent on natural resources,
- Climate variability and its impact on resource access and vulnerability.

The ZMP will be coordinated with academic institutions, government bodies (e.g., Wildlife Institute of India, State Forest Research Institute), and NGOs to establish baselines and a long-term monitoring and research protocol backed by real-time data systems which are essential for adaptive management, regulatory enforcement, and measuring the impact of eco-development interventions. Currently there is no centralized repository for ecological and socio-economic data, which hampers planning and policy refinement.

6.2 Development of Human Resource for Implementation

Human resource development is identified as a critical component of the plan, as Field-level personnel often lack ecological and community engagement skills. The shortage of skilled personnel, especially at the field level, has severely limited the effective enforcement of conservation laws and implementation of eco-restoration programs. Key initiatives include:

- Recruitment of dedicated ESZ staff such as eco-development officers, forest watchers, and biodiversity monitors.
- Hiring of technical personnel ecologists, hydrologists, GIS analysts to support specialized functions.
- Assigning focal points within departments (e.g., tourism, pollution control) to oversee ESZ-related activities.

Sustained investment in recruiting and training skilled personnel, combined with clear job descriptions and accountability mechanisms, will enhance institutional capacity and improve ESZ management outcomes. (Refer to Volume 2, Annexure-2, Chapter 6, Section 6.2)

6.3 Skill Development and On-The-Job Training

Currently there is significant local interest in eco-tourism, forestry, and organic agriculture, but limited access to structured learning pathways, furthermore, most government officials have not received training specific to ESZ planning, community engagement, or ecosystem services. Skill development is designed for both government staff and community stakeholders, particularly those involved in implementing or benefiting from eco-development projects. The plan outlines multi-tiered training programs that include:

- For frontline staff: biodiversity monitoring, GPS use, species identification, conflict mitigation, patrolling techniques.
- For community members: PRA methods, NTFP value addition, ecotourism guiding, organic farming, and solid waste management.
- For institutional stakeholders: inter-departmental coordination, MIS handling, reporting systems.
- Training will be delivered via district-level workshops, mobile training units, and partnerships with training institutes such as State Institute of Rural Development (SIRD).

Decentralized, practical, and context-specific training programs delivered at regular intervals will increase the effectiveness and equity of ESZ implementation. (Refer to Volume 2, Annexure-2, Chapter 6, Section 6.3)

6.4 Establishing a Learning Centre

The plan proposes the creation of a dedicated Eco-Learning and Training Centre within the Son Gharial ESZ. This centre would serve multiple purposes:

- Host training programs for officials, community members, students, and researchers.
- Act as a knowledge hub for ecosystem services, biodiversity, and traditional ecological knowledge.
- House a resource library, digital MIS interface, and audiovisual learning material.
- Facilitate research partnerships and student internships with universities and institutes.
- The facility will also serve as a demonstration site for eco-technologies such as composting, water harvesting, and bio-fencing.

A centralized learning centre will enhance institutional memory, support lifelong learning, and promote knowledge co-creation between experts and communities. (Refer to Volume 2, Annexure-2, Chapter 6, Section 6.4)

6.5 Capacity Building and Convergence

To ensure long-term effectiveness, the plan calls for inter-departmental and cross-sectoral capacity building. This includes:

- Joint training modules for staff from the Forest, Agriculture, Tourism, Pollution Control, Panchayati Raj, and Rural Development departments.
- Development of a shared MIS platform to enable real-time reporting and data exchange.
- Creation of inter-agency task forces at the district level to organize joint reviews and progress assessments.
- Capacity building also includes budget literacy, fund utilization tracking, and compliance reporting. NGOs and training institutes will be enlisted as training partners.

Institutionalizing joint training and convergence mechanisms—supported by an integrated knowledge management system—will ensure holistic, transparent, and responsive ESZ governance. (Refer to Volume 2, Annexure-2, Chapter 6, Section 6.5)

CHAPTER 7 THE BUDGET

7.1. The plan budget

The estimated budget for the implementation of the proposals as mentioned in the plan for the duration of the planning period will be around INR 265 Cr. (Refer to Volume 2, Annexure-2, Chapter 7, Section 7.1)

The major component of the budget provisions will be capacity building, livelihood development, infrastructure augmentation and environmental management. The expenditure is likely for improving the community resilience and environmental conservation status of the Protected area.

7.2. Source of funding

The convergence of funds will be the key requirement of the management and project implementation of the ESZ as this is a special area requiring simultaneous focus of many departments. (Refer to Volume 2, Annexure-2, Chapter 7, Section 7.2)

NRLM & MANREGA: The livelihood activities including some of the pilot projects for development tourism products, plantation, etc. can be taken up under the programs of NRLM and MANREGA. The fund managers have to be sensitized by the agencies to take up specific projects which are linked to conservation, development or livelihoods.

Pradhan Mantri Matsya Sampada Yojana (PMMSY) of the Government of India, will be key source of funding for the project development, establishment of facilities and operation for livelihood development.

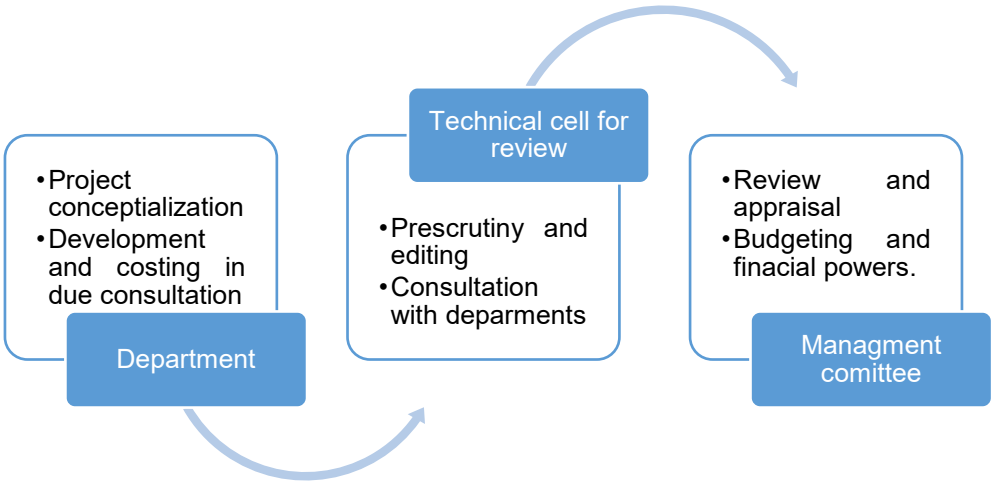
The second source of funding can be through the **National Fisheries Development Board (NFDB)** assistance for the farmers, Honorarium to resource persons, Assistance to implementing agencies the assigned department will be responsible for selection of beneficiaries and co-ordination with NFDB for receiving funds. Apart from the above **Various wildlife conservation programs**: Various wildlife Action plans for tiger, elephant and other wildlife conservation projects are available which can be cross lined with the proposals of the ESZ Master Plan.

For Area restoration and plantation **State Action Plan for Climate Change (SAPCC) and fund** can be updated as any plantation will help in carbon sequestration. The project formulation, appraisal, sanction, disbursement of fund, monitoring & evaluation and capacity building of can be taken up by the Nodal agencies including forest and environment department.

For Livestock and related conservation and management activities RKVY (Rashtriya Krishi Vikas Yojana) and Various other livestock and agriculture development schemes) can be utilized for the management of the special areas under the P.A. it is noted that already such initiatives have been taken up for the project areas.

7.3. Drawing and Distribution mechanism

The drawing and distribution of funds will be in conformity with the proposed institutional framework of implementation under the purview of the management committee. (Refer to Volume 2, Annexure-2, Chapter 7, Section 7.3)



The project development and detailed cost estimates will be the responsibilities of various department in consultation with the technical cell for implementation. The same will be placed for decision of the management committee in presence of the finance representative. Once the disbursement is approved the same can be implemented through due procurement process.

CHAPTER 8 REGULATIONS IN THE ESZ

Protected areas have been identified through the Wildlife protection act, 1972. The purpose of declaring ESZs is to create some kind of “shock absorbers” to the protected areas by regulating and managing the activities around them. Guidelines for declaring Eco-sensitive Zones (ESZs) were notified by MoEF&CC under Environment Protection Act, 1986 with an aim to regulate certain activities around National Parks and Wildlife Sanctuaries so as to minimize the negative impacts of such activities on the fragile ecosystem encompassing the protected areas.

The MoEF&CC through a Gazette notification notified ESZ for Sanjay National Park and Sanjay Dubri Wildlife Sanctuary. The Sanctuary spans over an area of 1674.512sq.km. It has a Protected Area of 812.58sq.km. and buffer area spanning 861.93sq.km, is spread over Sidhi, Singrauli and Shahdol districts of Madhya Pradesh.

As per the recommendations of the ESZ Notification and consecutive Departmental Meetings, the ZMP comprise of following key sections:

A. Spatial Zones for Development (Recommended) (Refer to Volume 2, Annexure-2, Chapter 2)
B. Suggested Tourism Promotion Areas (TPA) (Refer to Volume 2, Annexure-2, Chapter 5, Section 5.1.5)
C. Non-spatial (Restricted, Regulated and Promoted Activities)
D. Management Guidelines and Policy (Refer to Volume 2, Annexure-2, Chapter 5, Section 5.3)
E. Pilot projects and interventions (Refer to Volume 2, Annexure-2, Chapter 3)
F. Regulatory zones

This chapter further elaborates on section F. Regulatory Zones.

8.1. Issuance of Permissions in ESZ Area

For the purpose of issuance of permission in the ESZ area following process should be considered.

1. The eco-sensitive zone (ESZ) Zonal Master Plans do not define any land use or land cover in the ESZ Master Plan. (Refer Chapter 2 of volume 2, Annexure-3 for suggestive land use zoning)
2. The permission will be issued as per provisions laid down in the ESZ Notification, only for the activities which are not Prohibited. (Refer sections 2.6 & 2.7 of volume 2, Annexure-3)
3. The Permission for Regulated and Promoted activities has to be provide by Regulatory Authorities after recommendation of Monitoring Committee as per the provisions laid down in this ESZ Master Plan. (Refer sections 8.3 of volume 2, Annexure-3)
4. For Activities which are not mentioned in the ESZ Notification or in this ESZ Master Plan, the permission will be provided by Regulatory Authority after recommendation by the Monitoring Committee. (Refer sections 8.3 of volume 2, Annexure-3)
5. As per provision of this ESZ Master Plan, the Regulated and Promoted activities, are Spatially Permitted in the Sensitive Zone defined in Chapter 2 of Volume 2, Annexure-3.
6. The per Permission within the Sensitive Zone are to be provided on the basis of:
    a. Activity Classification for ESZ in Section 8.2, Table no. 13 of Volume 2, Annexure-3.

b. Sensitive Zones of ESZ. Refer Map no. 37 & 38 of Volume 2, Annexure-3.

7. For area outside Sensitive Zone, Suggestive Zones has been identified in Chapter 2 (Volume 2, Annexure-3) of this ESZ Master Plan, the Permission shall be allowed by Regulatory Authorities after recommendation of Monitoring Committee. Due consideration shall be given to the Theme Plans (Chapter 3 of Volume 2, Annexure-3) of this ESZ Master Plan before permission from concerned department.
8. For details of building regulation Bhumi Vikas Rule 2012 or subsequent regulation to be followed.
9. List of Regulatory Authority is mentioned in Section 8.3 of Volume 2, Annexure-3.

Sensitive Zone

Based on the suggestions received from all the stakeholders and as per the Minutes of the Meeting from 1st, 2nd, 3rd and 4th inter-state departmental meeting dated 10.10.2024, 08.11.2024, 14.05.2025, and 16.09.2025, the Sensitive Zones are defined as follows:

(i) 1 km distance from the Protected Area: As per the Supreme Court Order dated June 2022 and subsequent modification in April 2023, this is a protective ring extending 1 kilometer from the core Tiger Reserve or the Eco-Sensitive Zone (ESZ) boundary, whichever is closer. Its primary purpose is to minimize immediate human impact, hence the restriction on new construction. (Refer to Volume 2, Annexure-3, Chapter 8, Section 8.1)

(ii) Steep Hill Slopes (≥ 20°): These zones encompass areas with significant inclines, vulnerable to erosion and landslides. They require special protection to maintain soil stability and prevent environmental degradation. In these zones, only Local people shall be permitted to undertake construction on their land for their residential use, widening and strengthening of existing roads and construction of new roads and Construction and renovation of infrastructure and civic amenities. (Refer to Volume 2, Annexure-3, Chapter 8, Section 8.1)

(iii) Water Body Conservation Areas (Green Buffer): These areas surround water bodies (lakes, rivers, etc.) and are critical for maintaining aquatic ecosystems and water quality. They aim to prevent pollution and protect riparian habitats. (Refer to Volume 2, Annexure-3, Chapter 8, Section 8.1)

The green buffers or recreational zones are proposed to large water Bodies/wetlands, major streams and water flow channels and no building activity should be proposed in the buffer area. The following are the buffer proposed [1]:

- 50 m from the river edge for large rivers.
- 50 m from the boundary of lakes of area 4 acre and above,
- 15 m from the boundary of lakes of area less than 4 acre / ponds/tank bed lands,
- 15 m from the boundaries of major canal, stream, nallahs and storm-water drains

(iv) Denuded Areas: These are regions where vegetation cover has been significantly depleted, leading to soil erosion and reduced biodiversity. Restoration and reforestation efforts are prioritized in these zones. (Refer to Volume 2, Annexure-3, Chapter 8, Section 8.1)

[1] Please refer 'Urban Wetland/Water Bodies Management Guidelines' issues by National Mission for Clean Ganga with School of Architecture and Planning, New Delhi.

(v) Locations of Religious Importance: These are areas that hold cultural and religious significance. They are required to be handled with care, balancing the religious needs, and the environmental needs. (Refer to Volume 2, Annexure-3, Chapter 8, Section 8.1)

(vi) Silent Zone: The silent zone should be clearly defined and should be enforced within 1 km of the PA (Protected Area) boundary, where the permissible noise level should be 50 dB(A) in day-time and 40 dB(A) in night-time. For the entire ESZ beyond one km from PA, the permissible noise level should be limit of 65 dB(A) in day-time and 55 dB(A) in night-time as per the Noise Pollution (Regulation and Control) Rules, 2000. Noise pollution should be prevented and controlled in accordance with the Gazette notification. (Refer to Volume 2, Annexure-3, Chapter 8, Section 8.1)

(vii) Tiger Corridors: As per the National Tiger Conservation Authority published guidelines for development in the Tiger Corridor (Refer to Volume 2, Annexure-3, Chapter 8, Section 8.1 & Annexure-10 of Volume 2). Following regulations are:

a. Residential Construction shall be allowed in all abadi land and till 100 meters distance from the Abadi Land.
b. In non-Abadi land, residential construction is allowed with FAR restriction of 0.1
c. Widening and strengthening of roads shall be allowed only after obtaining approval from the Forest Department. (Wildlife board)
d. Construction and renovation of infrastructure and civic amenities are allowed.
e. No new commercial construction allowed in Tiger corridor area.

8.2. Regulations as per the zones

Refer to Volume 2, Annexure-2, Chapter 8, Section 8.2.

Activity Classification for ESZ of Sanjay Dubari Tiger Reserve

Sl No	Activities	1 km distance from the Protected Area	Hill slopes >= 20°	Denuded areas	Conservation areas around water bodies (Green buffer)	Locations of Religious importance
	Regulated Activities (as per extracts of the ESZ Notification)					
1	Commercial establishment of hotels and resorts.	✗	✗	✓	✓	✓
	(i) No new commercial hotels and resorts establishments	✗	✗	✓	✗	✓
	(ii) Renovation and reconstruction of already existing commercial construction are allowed within the existing built-up area.[2]	✓[3]	✗	✓	✗	✓
	(iii) Small temporary structures for eco-tourism activities	✓	✗	✓	✗	✓
	Provided that, beyond one kilometre from the boundary of the Protected Area or up to the extent of Eco-sensitive Zone, whichever is nearer, all new tourist activities or expansion of existing activities shall be in conformity with the Tourism Master Plan and guidelines as applicable.[4]	NA	✗	✓	✗	✗
2	Construction activities: (a) No new commercial construction of any kind shall be permitted within one kilometre from the boundary of the	✗	✗	✗	✗	✗

[2] To prevent development creep, commercial establishments shall be required to declare their existing service capacities at the evaluation stage. The regulatory authority shall ensure that these capacities are maintained during renovation or reconstruction, both at the approval stage and upon post-completion verification.
[3] As per the safeguards mentioned in Section 5.3.2 of Volume 2, Annexure-3. **If Management committee wants to allow camping in any specific area it has to be identified as camping zone and changes have to be made in the ESZ Zoning Maps accordingly.**
[4] Refer Chapter 5 of Sub-Zonal Tourism Plan of Volume 2, Annexure-3 for additional details.

Sl No	Activities	1 km distance from the Protected Area	Hill slopes >= 20°	Denuded areas	Conservation areas around water bodies (Green buffer)	Locations of Religious importance
	Protected Area or up to extent of the Eco-sensitive Zone, whichever is nearer:					
	(b) Provided that, local people shall be permitted to undertake construction in their land for their use including the activities listed in sub- paragraph (1) of paragraph 3 as per building byelaws to meet their residential needs of the local residents such as:					
	(i) Widening and strengthening of existing roads and construction of new roads;	✓	✓	✓	✗	✓[5]
	(ii) Construction and renovation of infrastructure and civic amenities;	✓	✓	✓	✗	✓
	(iii) Small scale industries not causing pollution termed as per Classification done by Central Pollution Control Board of February 2016;	•	✗	•	✗	•
	(iv) Cottage industries including village industries; convenience stores and local amenities supporting eco-tourism including home stays[6]; and	✓	✓	✓	✗	✓
	(v) Promoted activities listed in this Notification.	✓	✓	✓	✓	✓
	(c) 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.	✓	✓	✓	✗	✓
	(d) Beyond one kilometre it shall be regulated as per the Zonal Master Plan.	Applicable same as 2 (b) and (c)				
3	Small scale non-polluting industries	•	✗	•	✗	•

[5] Only temple related activities permitted.
[6] Refer section 5.18.

Sl No	Activities	1 km distance from the Protected Area	Hill slopes >= 20°	Denuded areas	Conservation areas around water bodies (Green buffer)	Locations of Religious importance
	Non-polluting industries as per classification of industries issued by the Central Pollution Control Board in February 2016 and non-hazardous, small-scale and service industry, agriculture, floriculture, horticulture or agro-based industry producing products from indigenous materials from the Eco-sensitive Zone shall be permitted by the competent Authority.					
4	Commercial goat and sheep farming Regulated under applicable laws.[7]	•	•	•	•	•
5	Felling of trees. (a) There shall be no felling of trees on the forest or Government or revenue or private lands without prior permission of the competent authority in the State Government.	•	•	•	•	•
	(b) The felling of trees shall be regulated in accordance with the provisions of the concerned Central or State Acts and the rules made thereunder.	•	•	•	•	•
6	Collection of Forest Produce or Non-Timber Forest Produce (NTFP). Regulated under applicable laws.	•	•	•	•	•
7	Migratory graziers. Regulated under applicable laws.	•	•	•	•	•
8	Erection of electrical and communication towers and laying of cables and other infrastructures. Regulated under applicable law [8].	•	•	•	•	•

[7] Subject to the approval of monitoring committee and Management guidelines

[8] Underground cabling may be promoted as per specific guidelines. Specific linear intrusions to be avoided as per management guidelines.

Sl No	Activities	1 km distance from the Protected Area	Hill slopes >= 20°	Denuded areas	Conservation areas around water bodies (Green buffer)	Locations of Religious importance
9	Infrastructure including civic amenities. Shall be done with mitigation measures, as per applicable laws, rules and regulations and available guidelines.	✓	✓	✓	✗	✓[9]
10	Widening and strengthening of existing roads and construction of new roads[10].	✓	✓	✓	✗	✓[11]
11	Undertaking other activities related to tourism like over flying the Eco-sensitive Zone by regulated under applicable law.					
	a) hot air balloon	✗	✓	✓	✓	✓
	b) helicopter	✗	✓	✓	✓	✓
	c) drones[12]	✓	✓	✓	✓	✓
	d) Microlites	✗	✓	✓	✓	✓
12	Protection of hill slopes and river banks. Regulated under applicable law.	✓	✓	✓	✓	✓
13	Movement of vehicular traffic at night. (Regulated for commercial purpose under applicable laws).	✓	✓	✓	✓	✓
14	On-going agriculture and horticulture practices by local communities along with dairies, dairy farming, and aquaculture. Permitted under applicable laws for use of locals.	✓	✓	✓	✓	✓

[9] Only temple related activities permitted.
[10] Shall be done with mitigation measures, as per applicable laws, rules and regulations and available guidelines
[11] Only temple related activities permitted.
[12] Based on clearances from Forest Department. Can be extensively used for monitoring and policing purposes by law enforcement agencies. .

Sl No	Activities	1 km distance from the Protected Area	Hill slopes >= 20°	Denuded areas	Conservation areas around water bodies (Green buffer)	Locations of Religious importance
15	Discharge of treated wastewater/effluents in natural water bodies or land area. [13]	✓	✓	✓	✓	✓
16	Commercial extraction of surface and ground water. Regulated under applicable law.	•	•	•	•	•
17	Open well; bore well, etc. for agriculture or other usage.[14]	✓	✓	✓	✓	✓
18	Solid waste management/bio-medical waste management.	•	•	•	•	•
19	Introduction of exotic species.	•	•	•	•	•
20	Eco-tourism.	•	•	•	•	•
21	Commercial sign boards and hoardings.	✓	✓	✓	•	✓
	Promoted activities					
1	Rainwater harvesting. Shall be actively promoted.	✓	✓	✓	✓	✓
2	Organic farming. Shall be actively promoted.	✓	✓	✓	✓	✓
3	Adoption of green technology for all activities. Shall be actively promoted.	✓	✓	✓	✓	✓
4	Cottage industries including village artisans, etc. Shall be actively promoted.	✓	✓	✓	✓	✓
5	Use of renewable energy and fuels. Biogas, solar light, etc. to be actively promoted.	✓	✓	✓	✓	✓
6	Agro-forestry. Shall be actively promoted.	✓	✓	✓	✓	✓

[13] The discharge of treated wastewater/effluents shall be avoided to enter into the water bodies and efforts shall be made for recycle and reuse of treated wastewater, and the discharge of treated wastewater/effluent shall be regulated as per applicable laws.

[14] Regulated under applicable laws and the activity shall be monitored by the concerned authority.

Sl No	Activities	1 km distance from the Protected Area	Hill slopes >= 20°	Denuded areas	Conservation areas around water bodies (Green buffer)	Locations of Religious importance
7	Use of eco-friendly transport Shall be actively promoted.	✓	✓	✓	✓	✓
8	Skill development. Shall be actively promoted.	✓	✓	✓	✓	✓
9	Restoration of degraded land/ forests/ habitat. Shall be actively promoted.	✓	✓	✓	✓	✓
10	Environmental awareness. Shall be actively promoted.	✓	✓	✓	✓	✓

**Note: On the basis of the comments received during 1st and 2nd inter-state departmental meeting dated 10.10.2024 and 08.11.2024*

LEGEND

✓ Listed activity permitted in the zone defined

× Listed activity not permitted in the zone defined

• Subject to permission from regulatory authority

8.3. Regulatory Authority

Refer to Volume 2, Annexure-2, Chapter 8, Section 8.3.

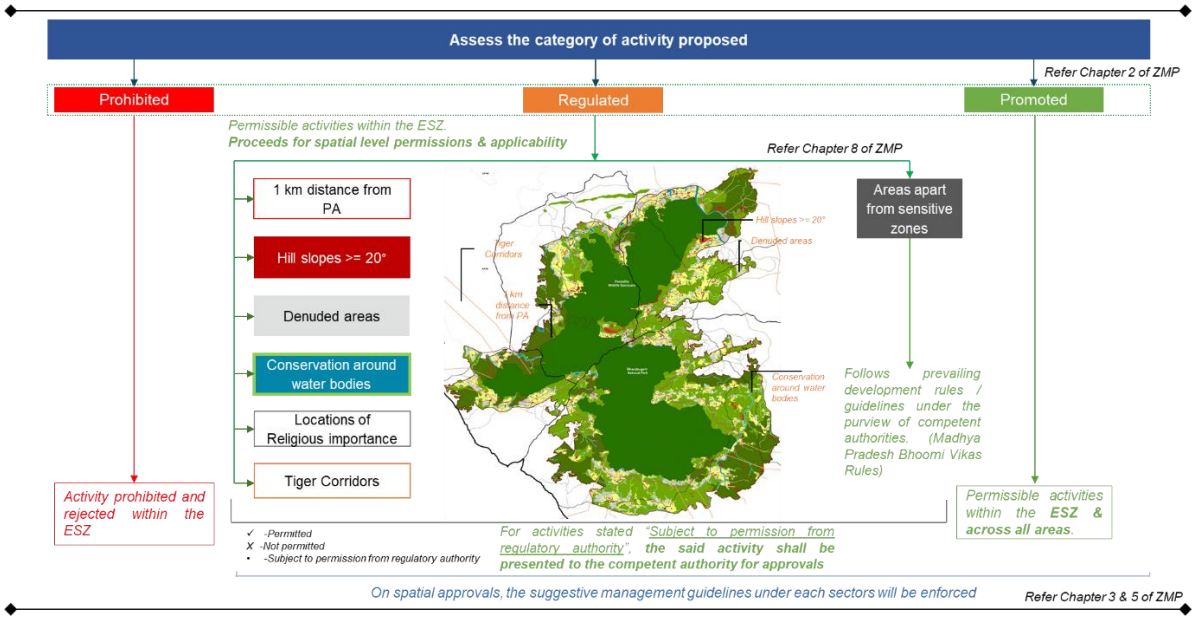
Regulatory authorities for Regulated and promoted activities in ESZ

S.N.	Regulated Activities	Regulatory Authority
1	Commercial establishment of hotels and resorts.	Revenue & Forest Dept., Local body
2	Construction activities	Revenue & Forest Dept., Local body
3	Small scale non-polluting industries.	Revenue & Local Body
4	Commercial Goat and sheep farming	Revenue & Local Body
5	Felling of Trees	Revenue & Forest Dept., Local body
6	Goat Farming	Local Body
7	Collection of Forest produce or Non- Timber Forest Produce (NTFP).	Local Body
8	Migratory graziers	Local Body, Forest Department
9	Erection of electrical and communication towers and laying of cables and other infrastructures	Revenue Dept., Local Body, DISCOM
10	Infrastructure including civic amenities	Revenue & Forest Dept., Local body
11	Widening and strengthening of existing roads and construction of new roads.	Revenue & Forest Dept., Local body
12	Under taking other activities related to tourism like over flying the ESZ area by hot air balloon, helicopter, drones, Microlites, etc.	Revenue & Forest Dept., Local body
13	Protection of Hill Slopes and river banks	Local body, Collector
14	Movement of vehicular traffic at night.	Local body, Forest Department
15	Ongoing agriculture and horticulture practices by local communities along with dairies, dairy farming, and aquaculture.	Local body,
16	Discharge of treated waste water/effluents in natural water bodies or land area.	Local Body, MPPCB
17	Commercial extraction of surface and ground water	Local Body, WRD, CGWA, Collector
18	Open Well, Bore Well etc. for agriculture or other usage	Local Body, Collector
19	Solid Waste Management/Biomedical Waste Management	Local Body, CMHO, MPPCB, Health Department
20	Introduction of Exotic species.	Local Body, Collector, Forest Department
21	Eco-tourism	Local Body, Tourism Department, Forest Department
22	Noise Pollution	Local Body, MPPCB, District administration.
23	Commercial Sign boards and hoardings.	Local Body, Transport Department, Forest Department
24	Any other activity not listed above	Regulated as per the recommendation of the Monitoring Committee

**Note: On the basis of the comments received during 1st and 2nd inter-state departmental meeting dated 10.10.2024 and 08.11.2024*

The concerned department / Regulatory authority should provide relevant permission for execution / operation of the activity as per recommendations of monitoring committee.

8.4. Implementation and process flow



Procedure for Reading and Applying the Zonal Master Plan (ZMP)

Step 1: Activity Categorization

Identify the proposed activity and classify it under the ESZ Act categories of **Prohibited**, **Regulated**, or **Promoted**. (Refer *Volume 2, Chapter 2* for the complete list of categorized activities.)

Step 2: Decision Pathway Based on Categorization

- **Prohibited Activities:** Automatically rejected; no further consideration.
- **Promoted Activities:** Permissible across all areas within the ESZ. Forwarded for approval to the designated Regulatory Authority. (Refer *Volume 2, Chapter 8, Section 8.3.*)
- **Regulated Activities:** Require **spatial and contextual assessment**. For the same, verification of the proposed khasra location against sensitive zones, including:

    a. 1 km distance from the Protected Areas (PA)
    b. Hill slopes >=20°
    c. Denuded areas
    d. Conservation around water bodies
    e. Locations of Religious importance
    f. Tiger corridors

    If located within sensitive zones, the activity must be screened against compliance with *Volume 2, Chapter 8, Section 8.2: "Regulations as per the Zones"*. Upon compliance, the proposal may proceed to the designated Regulatory Authority for approval (*Volume 2, Chapter 8, Section 8.3*).

Step 3: Post-Approval Management

Approved activities shall adhere to the **management guidelines** provided in *Volume 2, Chapters 3 & 5*. These guidelines ensure that development remains sustainable and consistent with the ecological and regulatory framework of the ESZ.

CHAPTER 9 CONCLUSION

The Zonal Master Plan for the Sanjay Dubri Eco-Sensitive Zone presents a comprehensive and integrative framework aimed at aligning conservation imperatives with sustainable development across the ESZ landscape. Anchored in a detailed assessment of ecological conditions, community dependencies, and socio-economic vulnerabilities, the report outlines sector-specific strategies that collectively strive to achieve the objectives of biodiversity protection, environmental restoration, and inclusive growth.

Through its thematic plans, covering forest and biodiversity conservation, soil and water management, organic agriculture, renewable energy, waste management, and pollution abatement, the ZMP proposes actionable solutions that restore ecological functions while building climate resilience. Special emphasis is placed on community participation and institutional strengthening, recognizing the critical role that local stakeholders play in the stewardship of the landscape.

The ZMP's focus on livelihood development and the sub-zonal tourism master plan further demonstrate a pragmatic yet sensitive approach to conservation-linked economic development. Livelihood strategies are tailored to reduce forest dependence while enhancing incomes through agro-ecological practices, NTFP value chains, skill development, and rural enterprise promotion.

The tourism strategy is equally thoughtful, which is spatially zoned, culturally anchored, and designed to operate within the ecological carrying capacity of the region, and ensuring that tourism becomes a tool for conservation financing and local empowerment rather than a source of degradation.

Overall, the Sanjay Dubri ZMP serves not only as a regulatory instrument but also as a vision document that operationalizes the principles of eco-sensitive planning. It proposes a governance model rooted in convergence, decentralization, and ecological responsibility. By integrating environmental priorities with livelihood needs and institutional capacity, the plan offers a scalable and replicable pathway for sustainable landscape management in ecologically fragile zones across India.