

Operational Guidelines

MISHTI Programme



**Ministry of Environment Forest and Climate Change
Government of India**

2023-24

Operational Guidelines under MISHTI Programme

Blue economy is 6th dimension of India's vision for New India by 2030, and has an indispensable role to play in the promotion of ecological and socio-economic resilience of the country's coastal ecosystems. In other words, persevering and enhancing the sustainability of the coastal habitats like mangroves, seagrasses, coral reefs, salt marshes and mudflats is imperative.

To address this, MISHTI: "Mangrove Initiative for Shore line Habitats and Tangible Incomes" has been announced in para 85 of the Union Budget FY 2023-24 to promote and conserve mangroves as unique, natural ecosystem having very high biological productivity and carbon sequestration potential, besides working as a bio-shield.

Considering the above, the MISHTI ('Mangrove Initiative for Shoreline Habitats & Tangible Incomes) Programme has been taken up in response to climate change in terms of green energy transition and green economy. "MISHTI" comes after India joined the 'Mangrove Alliance for Climate' launched during the 27th Conference of Parties (COP27) to the United Nations Framework Convention on Climate Change held in Egypt in November 2022.

Background

Mangroves are the important carbon sink and are diverse group of salt-tolerant plant community of tropical and subtropical intertidal regions. They act as an important source of livelihood for the coastal communities and also play role in protecting the coastal areas from tsunamis, storm surge and soil erosion.

Mangroves are salt-tolerant trees, also called halophytes, and are adapted to live in harsh coastal conditions. They contain a complex salt filtration system and a complex root system to cope with saltwater immersion and wave action. They are adapted to the low-oxygen conditions of waterlogged mud, but are most likely to thrive in the upper half of the intertidal zone.

The mangrove biome, is a distinct saline wood land or shrub land habitat characterized by depositional coastal environments, where fine sediments (often with high organic content) collect in areas protected from high-energy wave action. The saline conditions tolerated by various mangrove species range from brackish water, through pure seawater (3 to 4% salinity), to water concentrated by evaporation to over twice the salinity of ocean seawater (up to 9% salinity).

The word "mangrove" is used in at least three senses:

- most broadly to refer to the habitat and entire plant assemblage or mangal, for which the terms mangrove forest biome and mangrove swamp are also used;

- to refer to all trees and large shrubs in a mangrove swamp; and
- narrowly to refer only to mangrove trees of the selective genus and family

Occurrence

Mangrove forests also called mangrove swamps or mangals, are found in tropical and subtropical tidal areas. Areas where mangroves occur include estuaries and marine shorelines.

The intertidal existence to which these trees are adapted represents the major limitation to the number of species able to thrive in their habitat. High tide brings in salt water, and when the tide recedes, solar evaporation of the seawater in the soil leads to further increases in salinity. The return of tide can flush out these soils, bringing them back to salinity levels comparable to that of seawater.

At low tide, organisms are also exposed to increases in temperature and reduced moisture before being then cooled and flooded by the tide. Thus, for a plant to survive in this environment, it must tolerate broad ranges of salinity, temperature, and moisture, as well as several other key environmental factors—thus only a select few species make up the mangrove tree community

Mangrove plants require a number of physiological adaptations to overcome the problems of low environmental oxygen levels, high salinity, and frequent tidal flooding. Each species has its own solutions to these problems; this may be the primary reason why, on some shorelines, mangrove tree species show distinct zonation. Small environmental variations within a mangal may lead to greatly differing methods for coping with the environment. Therefore, the mix of species is partly determined by the tolerances of individual species to physical conditions, such as tidal flooding and salinity, but may also be influenced by other factors, such as crabs preying on plant seedlings.

Accordingly, the mangrove areas can be categorized for consideration under the MISHTI Programme as detailed below: -

- a.) Areas submerged throughout day and have fresh water infusion
- b.) Areas where fresh water available but not submerged throughout the day
- c.) Areas that have no infusion of freshwater but submerged under high tide and low tide conditions
- d.) Areas that have no infusion of freshwater and not submerged under high tide.

Status of Mangrove Cover

As per ISFR, 2021 the Mangrove cover in the country is 4992sq and there is net increase of 17 sq km in the Mangrove cover of the country as compared to 2019 assessment. As per the geographical feature, the mangroves are present in 12 States of India. The State wise details of mangrove cover are given below.

Table:1 State-wise Mangrove Cover in India as per ISFR 2021

Sl. No.	State/UT	Very Dense Mangrove	Moderately Dense Mangrove	Open Mangrove	Total	Change with respect to ISFR 2019
1	Andhra Pradesh	0	213	192	405	1
2	Goa	0	21	6	27	1
3	Gujarat	0	169	1006	1175	-2
4	Karnataka	0	2	11	13	3
5	Kerala	0	5	4	9	0
6	Maharashtra	0	90	234	324	4
7	Odisha	81	94	84	259	8
8	Tamil Nadu	1	27	17	45	0
9	West Bengal	994	692	428	2114	2
10	A&N Islands	399	168	49	616	0
11	D&NH and Daman & Diu	0	0	3	3	0
12	Puducherry	0	0	2	2	0
	Total	1475	1481	2036	4992	17

Source: ISFR, 2021

As per the current status, there is a potential area of 2036 sq. km of Open Mangroves and 1481 sq km of Moderately Dense Mangrove which will be focused.

Vision

To enhance resilience of Indian coast and ensure the protection of coastal life, livelihood and infrastructure against the climate change consequences such as sea-level rise through conservation and management of coastal habitats.

Aim and objectives

The aim of the MISHTI is to “*Restoration of mangrove forests*” by undertaking

mangrove reforestation/ afforestation measures along the coast of India by adopting existing best practices in India and globally.

Among the diverse coastal habitats, mangroves are the most dominant ecosystem along the Indian coast. MISHTI Programme is focused on mangrove restoration with following features:

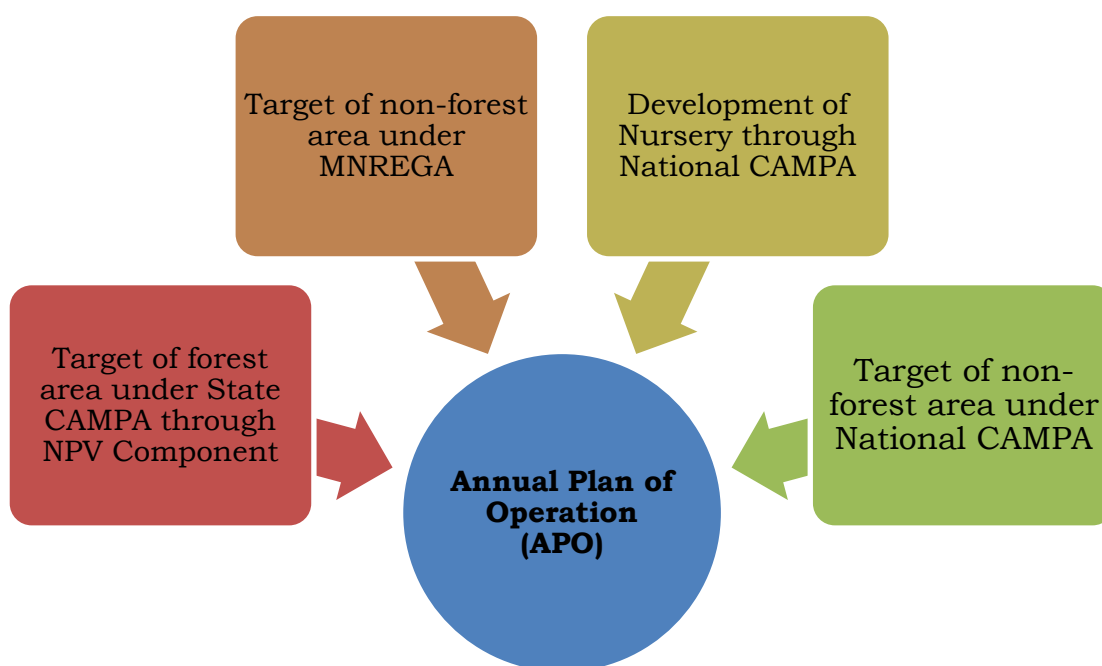
- (1) MISHTI is to be implemented by converging Compensatory Afforestation Fund Management and Planning Authority (CAMPA) Fund, Mahatma Gandhi National Rural Employment Guarantee Scheme (MGNREGS), and other sources.
- (2) Categorization of Targeted areas for this programme:
 - a. Mangrove plantation/restoration of gap or degraded areas or accretion areas,
 - b. Mangrove restoration of mudflat areas (areas that had historical mangroves),
 - c. Mangrove restoration in abandoned aquaculture ponds & salt pans, and
 - d. Rehabilitation of areas infested with invasive or alien species having mangrove potential.

The Programme will cover approximately 540 sq km area across nine (9) coastal States and four (4) Union Territories in five years (2023-2028). It will create around 22.8 million man-days with estimated carbon sink of 4.5 million tons of Carbon. It will also create potential areas for nature tourism and livelihood potential for local communities.



Implementation Mechanism for MISHTI Programme

The overall responsibility for implementation of programme vests with the State Forest Department. The MISHTI programme will be implemented in convergence with the CAMPA (around 70% of financial allocation) and MGNREGS and other sources (about 30%). The targets under the restoration of mangroves for forest and non-forest land will be taken up under State CAMPA through NPV Component, National CAMPA and MGNREGS. The Implementation of the MISHTI programme shall follow the implementation pattern of the Nagar Van Yojana for funding mechanism, implementation and monitoring.



Activities

The Core activities undertaken by State CAMPA will include Restoration through Gap Plantation; afforestation; and enrichment plantation. The funding for activities other than core activities will be done through National CAMPA, MNREGA and other sources. Any gap in financing through State CAMPA will be considered by National CAMPA.

The core activities include-

- a.) Mapping and delineation of target intervention areas
- b.) Preparation of inventory based on scientific assessment of topography, hydrology etc.
- c.) Nursery Development
- d.) Mangrove Restoration/Plantation

In addition, the support activities, funded by the National CAMPA and other sources will supplement the implementation on the MISHTI Programme and in achieving its mandate and include-

- a.) Livelihood Diversification activities
- b.) Awareness and Capacity Building
- c.) Research and Development
- d.) Publicity, Media and Outreach
- e.) Monitoring and Evaluation
- f.) Ecotourism with the help of SHGs

The Detailed Project Report (DPR) will be submitted in format at **Annexure-1**. The Year wise work plan for 5 years of cycle for the activities under the MISHTI Programme is detailed below. However, after 5th year if any required, the same will be taken up by the State MISHTI Cell and District MISHTI Cell through MGNREGS.

Category	Year	Type of Activities	To be funded from
Core Activity	Year-1	Mapping and delineation of target intervention areas.	CAMPA
		Preparation of inventory based on scientific assessment of topography, hydrology etc.	CAMPA
		Nursery Development	CAMPA/MGNREGS/Public Private Partnership/eminent NGOs
	Year-2	Mangrove Plantation	CAMPA/ MGNREGS (In case of non-forest land plantation can also be done through MGNREGS)
	Year-3	Stabilization	CAMPA & MGNREGS
	Year-4	Stabilization & Exit	CAMPA & MGNREGS
	Year-5	Exit	CAMPA
Support Activities	Year 1-5	Livelihood Diversification	MGNREGS
		Organization and Contingency	CAMPA & MGNREGS
		Capacity Building	CAMPA & MGNREGS

		Research and Development	CAMPA
		Publicity, Media and Outreach	CAMPA & MGNREGS
		Monitoring and Evaluation	CAMPA & MGNREGS
		Ecotourism with the help of SHGs	CAMPA & MGNREGS

The Annual Plan of Operation will be prepared by the Divisional Forest Officer by clearly indicating the targets/activities taken under State CAMPA, National CAMPA, MNREGA and other sources. The plans will be prepared following the guidelines of National CAMPA, State CAMPA and MGNREGS as per the extent of rules and guidelines of funding sources and at the same, the approval of Annual Plan of Operations will also be done as per the provision of rules/standard procedures of the funding source. Norms/rates for activities under MISHTI will be applicable as per the existing rates/norms of the particular state as well as scheme. In case of non-forest land, efforts will be made to have funding from MGNREGS/Public Private Partnership or any suitable convergence mechanism. However, any plan for mangrove restoration shall be routed through District MISHTI Cell and State Forest Department

Fund flow mechanism under MISHTI Programme

The initial one time developmental and non -recurring grant including the development of nurseries will be given to the State Forest Department mainly through **National CAMPA/MGNREGS**. Based on the Annual Plan of Operations (APOs), the financial assistance for the recurring cost will be provided on an annual basis.

The gaps, if any from MGNREGS, in the financial allocation will be fulfilled under National CAMPA as per the proposal from the concerned Principal Chief Conservator of Forest of the state.

The financial assistance will be governed by existing cost norms under CAMPA and based on the cost norms prevalent in the respective states. On receipt of project proposals from the state and approved by the designated officer not below the rank of PCCF, the same will be collated and examined in the Ministry before presenting it to the Executive Committee of the National Authority for approval. The National and State Authorities under CAMPA shall release the funds as grant directly to respective SFDs, in accordance with the provisions of Compensatory Afforestation Fund Act, 2016 and Rules made thereunder as being done in case of Nagar Van Yojna.

The guidelines of the respective schemes shall be scrupulously followed in the implementation of interventions through convergence. This dovetailing of funds will be well formulated at village, panchayat, district and State level so that timely release of funds is done through PMU at district level, headed by the Divisional Forest Officer as per the existing guidelines of different programmes and schemes.

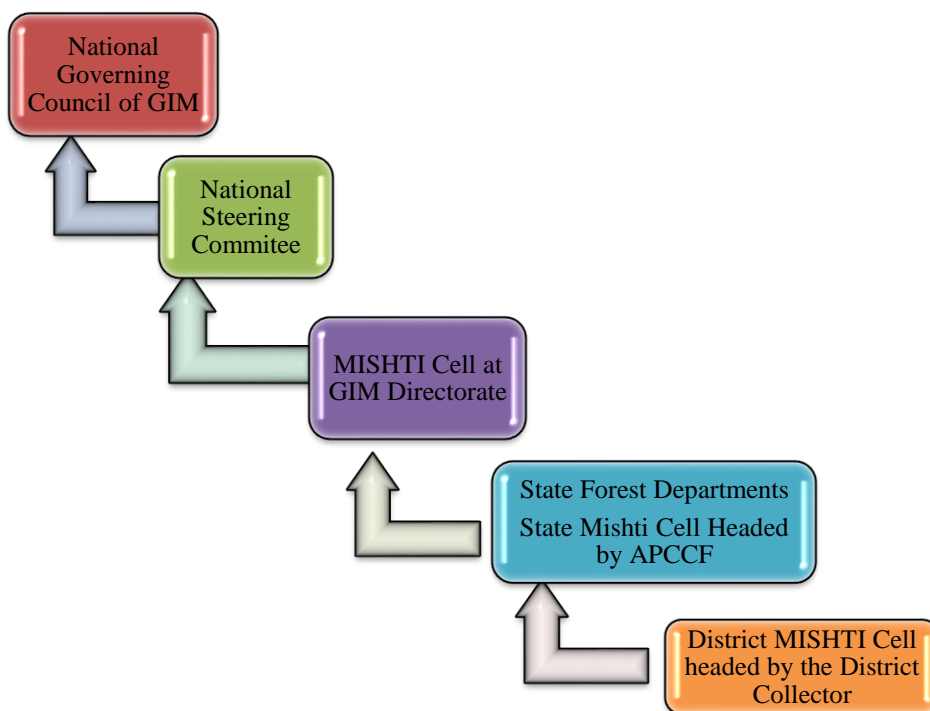
The different type of funding pattern followed under the MISHTI Programme is detailed below:

- **National CAMPA:** The MISHTI Cell will receive proposal forwarded by the State after the technical and administrative approval of the PCCF of the state concerned. The MISHTI Cell will present the proposal to the National Executive Committee of CAMPA for approval and accordingly funds will be released to the state by the National Fund under CAMPA, and its implementation will be governed by general and specific conditions (to this scheme) for similar works undertaken from the National Fund under CAMPA (similar to Nagar Van Yojna) and as per the provisions of CAF Act 2016 and rules therein regarding National Fund.
- **State CAMPA:** The core activities will be funded through State CAMPA. The APCCF in charge of State MISHTI Cell will present the proposal to the State Steering Committee of CAMPA for approval. The funding will be done in accordance with the provision of CAF Act 2016 and rules therein regarding State CAMPA fund.
- **MGNREGS and other sources:** The District MISHTI Cell will prepare the holistic plan in convergence with the applicable scheme along with MGNREGS and approvals and execution of work will be done as per the respective guidelines and rule of the schemes/programmes.



Structural Organization/Institution for Planning & Implementation:

The institutional framework will follow the pattern of Nagar Van Yojana. Following will be the proposed **Three tier** Institutional Structure for the MISHTI Programme-



At National Level

GIM Directorate will be the National Implementing Agency for the MISHTI Programme in close coordination with the National CAMPA. The mandate of GIM Directorate will be to support the MISHTI Programme in term of

policy, technical, monitoring and coordination for convergence.

MISHTI Cell will be headed by the Inspector General of Forests, GIM who will be assisted by technical Experts from National Centre for Sustainable Coastal Management (NCSCM), Institutes of ICFRE, Scientists from Sustainable Coastal Management Division (SCMD), and other experts hired as per the requirements for screening and approval of plans received from State/UTs.

To monitor the overall activities and achievements under the MISHTI Programme, there will be a National Level Monitoring Committee. The Composition of National Level Monitoring Committee may be seen at **Annexure-2**.

At State Level

A State MISHTI Cell shall be established in the State Forest Headquarter under the head of APCCF, and will have the overall responsibility of implementation of the activities in coordination with the Rural Development Department in their respective states. The Cell shall finalize and collate the APOs to be taken up under National and State CAMPA, MGNREGA & other sources for mangrove restoration/plantation with a clear physical and the corresponding financial outlay. The APO for the interventions to be taken under National CAMPA shall be submitted to the National MISHTI Cell. On the other hand, the interventions to be taken under State CAMPA shall be presented to the State Level Steering Committee of CAMPA for approval. At State level, there will be oversight committee headed by respective PCCF & HoFF with the overall responsibility for implementation of activities and on issues of monitoring and coordination.

District/Division level:

To facilitate the Mission activities, at the district/division level, A District MISHTI Cell will be established under the leadership of District Collector to ensure effective compliance and convergence. The Annual Plan of Operation will be prepared by the Divisional Forest Officer by clearly indicating the targets/activities taken under State CAMPA, National CAMPA, MGNREGS and other sources. For core activities Divisional Forest Officer will submit the action plan for approval in the State CAMPA Steering Committee. For other activities, the action plan will follow the guidelines of individual scheme/programmes e.g., CAF rules and MGNREGS act.

The Divisional Forest Officer (DFO) will develop explicit linkages with District Rural Development Officer to ensure convergence of schemes and programmes. The DFO of a particular area will be the reporting officer for physical and financial achievements done under programme from State

CAMPA and MNREGA. He will also be responsible for the development, upkeep and the supervision of Nurseries funded for under the MISHTI programme through National CAMPA.

Department of Rural Development will issue advisories for MGNREGS for giving priority to Mangrove restoration and plantation.

Technical Support:

The technical support for the programme will be from National Centre for Sustainable Coastal Management (NCSCM) Chennai, Institutes of ICFRE, Forest Survey of India (FSI) Dehradun, and Coastal Management Division and other Institute of this Ministry and other State research institutes.

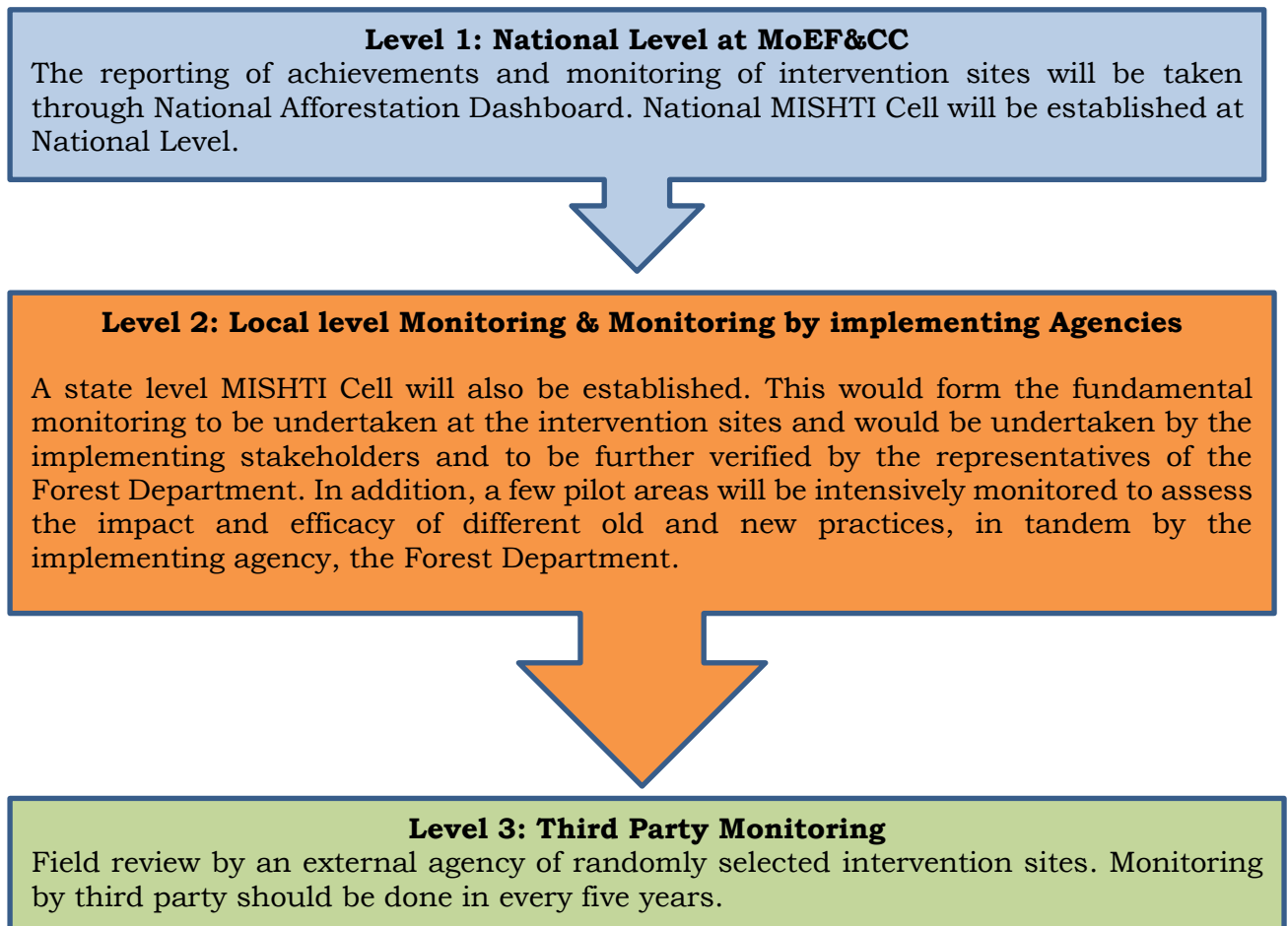


Monitoring and Auditing of the Activities

Monitoring and Evaluation (M&E) has been acknowledged as a key programme management function with significant bearing on programme efficiency and effectiveness. Acknowledging the role of M&E in programme delivery, monitoring at three different levels will be taken up. The M&E system would be as a concurrent system to monitor performance of the MISHTI Programme on the basis of output and outcome levels. The M&E system would also provide critical inputs to the entire planning process besides ensuring accountability on part of the implementers at the same time ensure transparency in the process of implementation.

The initiatives for APO submission, its monitoring system and fund management will be completed in 1st Year of implementation of MISHTI Programme.

The various strata of Monitoring and Evaluation are depicted in the figure below:



FORMAT FOR PREPARATION OF DPR OF MISSION MISHTI

1. STATE/UT:
2. STATUS NOTE ON MANGROVES:
3. ACTIVITIES PROPOSED UNDER MISSION MISHTTI:
 - i. MAPPING & DELINEATION OF TARGET AREA
 - ii. MANGROVE SPECIES (site wise)
 - iii. PREPARATION OF INVENTORY BASED ON SCIENTIFIC ASSESSMENT OF TOPOGRAPHY, HYDROLOGY ETC.
 - iv. RESTORATION PLAN INCLUDING AFFORESTATION, CONSERVATION WORK AND NURSERIES
 - v. LIVELIHOOD DIVERSIFICATION ACTIVITIES:
 - vi. AWARENESS AND CAPACITY BUILDING
 - vii. RESEARCH & DEVELOPMENT
 - viii. PUBLICITY MEDIA & OUTREACH
 - ix. MONITORING & EVALUATION
 - x. ECOTOURISM ACTIVITIES
 - xi. ANY INNOVATIVE ACTIVITY

(Note- Mangroves restoration and afforestation activities can be taken up on forest as well as non-forest lands)

4. DISTRICTS, FOREST DIVISION, RANGE & VILLAGES FOR SELECTED SITES OF MANGROVE RESTORATION:
5. FINANCIAL DETAILS INCLUDING CONVERGANCE FROM MGNREGA & OTHER SCHEMES/ PROGRAMMES:
6. IMPLEMENTATION AGENCY:

(Note- SPV like Mangrove Cell for focused restoration action and Mangrove Foundation like institution for coordinating and guiding livelihoods & other activities)

7. IMPLEMENTATION SCHEDULE (PHYSICAL & FINANCIAL):

(Note- The restoration/ afforestation sites should indicate location, area, kml file and annual plan of activities)

8. FUNDS REQUIREMENT FROM CAMPA
 - (I) STATE CAMPA
 - (II) NATIONAL CAMPA
9. PROPOSED FUNDS FROM MGNREGA

(I) Area undertaken on non-forest land along with financial provision

(II) Activity wise financial allocation for the activities taken through MNGREGA

10. MONITORING, REPORTING AND VERIFICATION MECHANISM:

(Note- (i) Monitoring mechanism should include internal and external/ third party with integration of appropriate technology.

(ii) Physical and Financial Reports to be submitted annually along with monitoring & evaluation report and comments by the Head of Implementing Agency).

11. SUSTAINABILITY

(Note: The DPR should indicate Stabilization plan and exit plan for long term sustainability after completion of the Project)

12. ANNUAL PLAN OF OPERATION: The State Forest Department will prepare and furnish an Annual Plan of Operation indicating proposed site-specific activities.

Composition of National Monitoring Committee

i.	ADGF (Forestry) & Mission Director (GIM), Mission MISHTI, MoEF&CC	Chairman
ii.	Inspector General of Forests GIM/NAEB	Member Secretary
iii.	Director General, Forest Survey of India	Member
iv.	Director General, Indian Council of Forestry Research and Education	Member
v.	Joint Secretary/Divisional Head, Coastal Division, MoEF&CC	Member
vi.	Inspector General of Forests, Survey and Utilization, MoEF&CC	Member
vii	Inspector General of Forests, Forest Policy, MoEF&CC.	Member
vii	Deputy CEO, CAMPA, National Authority	Member
ix.	Deputy/ Assistant Inspector General of Forests, GIM, MoEF&CC	Member

Responsibility:

- To support to the monitoring of overall activities taken up under MISHTI Programme
- To monitor the fund flow and utilization by the States.
- To conduct period review meeting for take account of quarter wise achievements under the Programme.
- Planning and providing feedback to the stakeholders for implementation of activities.
- Recommendation on the overall progress done by the States.



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