ENVIRONMENT, CLIMATE CHANGE AND FOREST DEPARTMENT

FORESTS

POLICY NOTE
2024-2025

DEMAND No.54

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POLICY NOTE 2024-2025

FORESTS DEPARTMENT

குமிழ் உண் வெள்ளை மறுவாய் பெயர்த்த
வெண்காழ் தாய் வண்காற் பந்தர்.

(புறநானூறு.324; 9, 10)

குமிழம் பழங்களை உண்ட வெள்ளாடு தன் வாயினின்றும் துப்பிய விதைகள் எங்கும் பரவி காணப்பட்டது என்ற புறநானூற்று பாடல் வரிகளிலிருந்து, காடுகள் உருவாக விலங்குகள் பெரிதும் காரணமாக உள்ளன என்பதை அறியமுடிகிறது.

Vision

Making Tamil Nadu the leading State in India in scientific and socially responsible forest and wildlife management to provide economic, social, environmental and cultural benefits sustainably to the present and future generations.

Mission

The Forest and Wildlife Management in Tamil Nadu shall be done with the objectives of

creating healthy and resilient forests through innovations, community partnerships, collaboration, and scientific management. The Department will strive to empower forest officers with the necessary knowledge and tools for better management of the forest wealth of Tamil Nadu and its wildlife. Transparency and objectivity shall be at the core of our policies and programmes with the sole objective of sustaining our forests for the present and future generations.

1. Introduction

Tamil Nadu, located in the southern part of India, boasts diverse forest ecosystems that are integral to the state's ecological, environmental, and socio-economic well-being. The state's forests, encompassing a variety of vegetation types and landscapes, play a crucial role in supporting biodiversity, conserving natural resources, and providing livelihoods to millions of people.

Diversity of Forests: Tamil Nadu's forests are characterized by their rich biodiversity and varied ecosystems. The state is home to tropical evergreen forests, dry deciduous forests, thorn forests, scrublands, grasslands, mangroves, and coastal ecosystems. Each of these forest types harbors a unique array of plant and animal species, including many endemic and endangered ones.

Geographical Distribution: Forests in Tamil Nadu are distributed across different regions of the state, including the Western Ghats, Eastern Ghats, plains, foothills, and coastal areas. The Western Ghats, a UNESCO World Heritage Site, is renowned for its biodiversity hotspots and serves as a crucial habitat for several endemic species. The Eastern Ghats, though less explored, also host diverse forest ecosystems and wildlife.

Importance of Forests: Tamil Nadu's forests provide a wide range of ecosystem services and natural resources essential for human well-being and environmental sustainability. These include:

Biodiversity Conservation: Forests support a rich variety of flora and fauna, including rare and endangered species. They serve as habitats for wildlife, nesting grounds for birds, and breeding sites for aquatic organisms.

Water Resources: Forests play a vital role in regulating hydrological cycles, maintaining water quality, and preventing soil erosion. They act as catchment areas for rivers, streams, and reservoirs, contributing to water security and irrigation.

Climate Regulation: Forests help mitigate the adverse effects of climate change by sequestering

carbon dioxide from the atmosphere and storing it in biomass and soil. They also regulate local and regional climates, reducing the impacts of extreme weather events and natural disasters.

Livelihoods and Socio-economic Benefits: Forests provide livelihoods to forest-dependent communities, including indigenous tribes and rural populations. They offer opportunities for sustainable harvesting of timber, non-timber forest products (NTFPs), medicinal plants, and other resources. Additionally, forests support eco-tourism, agroforestry, and forest-based industries, contributing to local economies.

Challenges and Conservation Efforts: Despite their ecological and socio-economic significance, Tamil Nadu's forests face various threats, including deforestation, habitat fragmentation, illegal logging, encroachment, forest fires, and

wildlife poaching. Conservation efforts in the state focus on forest protection, afforestation, habitat restoration, wildlife conservation, community participation, and sustainable forest management practices.

Tamil Nadu covers an area of 1,30,060sq km which is 3.96 % of the geographical area of the country. Physiographically, the State can be divided into four major regions, namely, Coastal Plains, Eastern Ghats, Central Plateau and Western Ghats.

The Forest Department is taking appropriate steps and making ceaseless efforts to formulate schemes to achieve the objectives mentioned in National Forest Policy 1988, State Forest Policy 2018 and Sustainable Development Goals (SDGs). It will be the commitment of the Department to

increase the forest cover through protection, restoration, afforestation and reforestation.

Tamil Nadu's forests are invaluable natural assets that warrant careful stewardship and conservation efforts to ensure their preservation for future generations. Effective forest management, biodiversity conservation, and sustainable development are essential for safeguarding the ecological integrity and socio-economic vitality of the state's forests.

2. Forest Wealth of Tamil Nadu

Tamil Nadu boasts diverse forest ecosystems that contribute significantly to its environmental, ecological, and economic wealth. The state's forest wealth encompasses various natural resources, biodiversity, and ecosystem services. The key components are:

Biodiversity: Tamil Nadu's forests are home to a wide range of plant and animal species, including many endemic and endangered species. The state's rich biodiversity includes lush tropical forests, dry deciduous forests, scrublands, grasslands, wetlands, and coastal ecosystems. These diverse habitats support a plethora of flora and fauna, contributing to the state's ecological richness.

Timber and Non-Timber Forest Products (NTFPs): Tamil Nadu's forests yield a variety of timber species, such as teak, rosewood, sandalwood, and bamboo, which are valuable for commercial and industrial purposes. Additionally, forests provide a range of non-timber forest products like medicinal plants, herbs, resins, gums, honey, rattan, and minor forest produce, which have cultural, medicinal, and economic significance for local communities.

Water Resources: Forests play a crucial role in water conservation, regulating hydrological cycles, maintaining soil moisture, and preventing erosion. Tamil Nadu's forests act as catchment areas for rivers, streams, and groundwater recharge, thereby ensuring water security for both rural and urban areas.

Carbon Sequestration and Climate Regulation: Forests in Tamil Nadu contribute to climate change mitigation by sequestering carbon dioxide through photosynthesis and storing it in biomass and soil. They also help regulate local and regional climates, mitigate the impacts of natural disasters like floods and cyclones, and provide resilience against climate change-induced challenges.

Livelihoods and Socioeconomic Benefits: Forests support the livelihoods of millions of

people, including indigenous communities, forest-dwelling tribes, and rural populations dependent on forest resources for food, fuel, fodder, and other subsistence needs. Sustainable utilization of forest resources generates income opportunities through eco-tourism, agroforestry, forest-based industries, and community-based conservation initiatives.

Ecosystem Services: Forests provide essential ecosystem services, such as air and water purification, soil fertility enhancement, pollination, pest control, and biodiversity conservation, which are critical for human well-being, public health, and sustainable development.

As per India's State of Forest Report, 2021(Biennial), the forest cover in the State is 26,419.23 sq km which is 20.31% of the State's Geographical area.

In terms of forest canopy density classes, the State has 3,593.01 sq. km of very dense forest (VDF) (2.76 % of geographical area), 11,034.03 sq. km of moderately dense forest (MDF) (8.48% of geographical area) and 11,792.19 sq. km of open forest (9.07 % of geographical area). Forest cover inside the Recorded Forest Area (RFA) is 17,531 sq km and the Forest cover outside the RFA is 8,888 sq km.

Tamil Nadu has shown an increase in forest cover of 55.21 sq km as per the India State of Forest Report 2021 as compared to India State of Forest Report 2019. The Tree cover in Tamil Nadu has been estimated at 4,424 sq. km assessed through sampling-based methodology. The total Forest and Tree Cover in the State is 30843.23 sq. km which is 23.71% of the State's geographical area.

The forests in Tamil Nadu can be classified into nine forest type groups which are further divided into 39 forest types. The major forest-type groups are as below.

(1) Tropical wet evergreen, (2) Tropical semi-evergreen, (3) Tropical moist deciduous, (4) Littoral and swamp, (5) Tropical dry deciduous, (6) Tropical thorn, (7) Tropical dry evergreen, (8) Sub-Tropical Broad-leaved hill, (9) Montane wet temperate.

Western Ghats is one of the 36 global biodiversity hotspots with a distinctive biogeographic region. The region has significant levels of biodiversity. It is one of the 3 mega centres of endemism in India. The State is also endowed with a unique coastline home to mangroves, and coral reefs enclosed with rich biodiversity. The Eastern Ghats of Tamil Nadu

contribute to the vast richness of the biodiversity in the State. Protection and conservation of rare and endangered species, restoration and improvement in the quality of the forests are aimed at enriching the biodiversity of Tamil Nadu’s forests as envisaged in the National Wildlife Action Plan 2017-2031.

Preserving and sustainably managing Tamil Nadu's forest wealth is vital for maintaining ecological balance, biodiversity conservation, climate resilience, and socio-economic development. Effective forest governance, community participation, conservation efforts, and afforestation programs are essential for safeguarding and enhancing the state's forest resources for present and future generations.

2.1 Floral diversity

Tamil Nadu's forest floral diversity is incredibly rich and diverse, owing to the state's varied geography, climatic conditions, and ecosystems. The state's forests encompass a wide range of vegetation types, from lush tropical rainforests to dry deciduous forests and thorny scrublands.

The Angiosperm diversity of India includes 17,672 species. With 5,640 species, Tamil Nadu ranks 1st among all the States in the Country. This includes 533 endemic species, 230 red-listed species, 1,559 species of medicinal plants and 260 species of wild relatives of cultivated plants. The Gymnosperm diversity of the country is 64 species, of which Tamil Nadu has 4 species of indigenous Gymnosperms and about 60 introduced species. The Pteridophytes diversity of India includes 1,022 species of which Tamil Nadu has about 184 species.

Tamil Nadu’s wild plant diversity also includes a vast number of Bryophytes, Lichens, Fungi, Algae and Bacteria.

Tamil Nadu's forest floral diversity is a testament to the state's ecological richness and botanical heritage. Conservation efforts aimed at preserving and restoring forest ecosystems are essential for safeguarding this biodiversity and ensuring the sustainable use of forest resources for future generations.

2.2 Faunal diversity

Tamil Nadu's forest faunal diversity is remarkably rich and varied, reflecting the state's diverse habitats, ranging from tropical rainforests to dry deciduous forests, scrublands, grasslands, and coastal ecosystems.

The faunal diversity of Tamil Nadu includes 165 species of freshwater Pisces, 76 species of

Amphibians, 177 species of reptiles, 454 species of birds and 187 species of mammals. According to the Conservation Assessment and Management Plan (CAMP) reports, the red-listed species include 126 species of Pisces, 56 species of Amphibians, 77 species of reptiles, 32 species of birds and 40 species of mammals. The endemic fauna includes 36 species of Amphibians, 63 species of reptiles, 17 species of birds and 24 species of mammals.

Tamil Nadu has been a pioneer in the conservation of forests and wildlife and in setting up Protected Areas (PA) that comprise National Parks, Wildlife Sanctuaries, Conservation Reserves and Community Reserves. 5 Tiger Reserves have been constituted especially for protecting tigers as an umbrella species giving thrust for conserving forests and wildlife. In addressing the biodiversity of wetlands, 15 Ramsar sites have been declared.

It is a matter of pride that Tamil Nadu has 36.13% (8,378.528 sq km) of forest area as Protected Area, as against the mandate of 25 % envisaged in the National Wildlife Action Plan 1988.

Preserving and protecting Tamil Nadu's forest fauna diversity is crucial for maintaining ecological balance, biodiversity conservation, and ecosystem services. Conservation efforts, including habitat protection, wildlife corridors, anti-poaching measures, and community-based conservation initiatives, are essential for safeguarding the state's rich wildlife heritage for future generations.

2.3 National Parks

Tamil Nadu is home to several national parks, each showcasing unique ecosystems and biodiversity. National Parks are notified under Sec 35 of the Wildlife (Protection) Act, 1972 as an area which needs to be protected for its ecological,

faunal, floral, geomorphological or zoological significance to protect, propagate or develop wildlife therein or its environment.

The Government has notified the following 5 National Parks in the State, known for their ecological, geomorphological and natural significance.

1. **Guindy National Park**: It is situated in the heart of Chennai, covers an area of 270.57 ha area in Chennai district and was established in the year 1978. Guindy National Park is one of the smallest national parks in India, known for its unique urban forest ecosystem. The park is home to various wildlife species, including blackbucks, spotted deer, jackals, langurs, and over 130 bird species. It also features Guindy Snake Park, which houses a variety of snake species and reptiles.

2. **Gulf of Mannar Marine National Park**: Located along the southeastern coast of Tamil Nadu, Gulf of Mannar Marine National Park is renowned for its rich marine biodiversity and coral reef ecosystem. The park comprises a chain of 21 uninhabited islands and is home to diverse marine life, including corals, sea turtles, dolphins, dugongs, and numerous fish species. It offers opportunities for snorkelling, scuba diving, and glass-bottom boat rides to explore its underwater wonders. It is spread over an area of 52,602 ha area in Ramanapuram & Tuticorin, Tirunelveli and Kanyakumari districts and was notified in the year 1986.

3. **Indira Gandhi Wildlife Sanctuary and National Park**: Situated in the Anaimalai Hills of the Western Ghats, this national park

is named after the former Prime Minister of India, Indira Gandhi. It encompasses a range of habitats, from tropical rainforests to montane grasslands. The park is home to a variety of wildlife, including elephants, tigers, leopards, Nilgiri Tahrs, sambar deer, macaques, and endemic bird species like the Nilgiri laughingthrush. The park also features the Anaimalai Tiger Reserve. It covers an area of 11,710 ha in Coimbatore and was established in the year 1989.

4. **Mukurthi National Park** was established in the year 2001 in the Nilgiris Districts and covers an area of 7,846 ha. It is well known for its floral and faunal Diversity in the Western Ghats.

5. **Mudumalai National Park**: Located in the Nilgiris District, Mudumalai National Park is

part of the Nilgiris Biosphere Reserve and forms a crucial habitat corridor between the Western Ghats and the Eastern Ghats. The park is known for its diverse wildlife, including elephants, tigers, leopards, Nilgiri Tahrs, gaur, deer species, langurs, and numerous bird species. It offers opportunities for wildlife safaris, nature walks, and birdwatching. It covers an area of 10,323 ha area in the Nilgiris district and was established in the year 2005.

These national parks play a crucial role in biodiversity conservation, habitat protection, and eco-tourism in Tamil Nadu. They offer visitor opportunities to experience the state's natural heritage and witness its diverse wildlife in their natural habitats.

2.4 Wildlife Sanctuaries

Tamil Nadu is home to several wildlife sanctuaries, which are protected areas dedicated to conserving and preserving the state's rich biodiversity. These sanctuaries provide habitats for a variety of flora and fauna and offer opportunities for wildlife observation and eco-tourism.

Wildlife sanctuaries are areas notified under Sec 18 and 26A of the Wildlife (Protection) Act 1972 owing to their ecological, faunal, floral, geomorphological, natural or zoological significance. These areas are notified to protect, propagate or develop wildlife or its environment. Details of wildlife sanctuaries in Tamil Nadu are as follows.

Sl. No	Name of Wildlife Sanctuary	Extent (in ha)	Districts	Year of Notification
1	Mudumalai Wildlife Sanctuary	21,776.00	Nilgiris	1940

Sl. No	Name of Wildlife Sanctuary	Extent (in ha)	Districts	Year of Notification
2	Mundanthurai Wildlife Sanctuary	58,207.58	Tirunelveli and Tenkasi	1962
3	Point Calimere Wildlife Sanctuary	1,728.81	Nagapattinam	1967
4	Indira Gandhi Wildlife Sanctuary	84,149.00	Coimbatore, Tiruppur	1976
5	Kalakad Wildlife Sanctuary	22,358.00	Tirunelveli and Tenkasi	1976
6	Vallanadu Black Buck Sanctuary	1641.00	Tuticorin	1987
7	Grizzled Squirrel Wildlife Sanctuary	48,520.00	Virudhunagar	1988
8	Kanyakumari Wildlife Sanctuary	40,239.55	Kanyakumari	2007
9	Sathyamangalam Wildlife Sanctuary	141,160.94	Erode	2008 & 2011
10	Megamalai Wildlife Sanctuary	26,910.81	Theni and Madurai	2009
11	Point Calimere Wildlife Sanctuary, Block A&B	12,407.27	Thanjavur, TiruvarurNagapattinam	2013
12	Kodaikanal Wildlife Sanctuary	60,895.482	Dindigul and Theni	2013
13	Gangaikondan Spotted Deer Sanctuary	288.40	Tirunelveli	2013
14	Cauvery North Wildlife Sanctuary	50,433.48	Krishnagiri& Dharmapuri	2014
15	Nellai Wildlife Sanctuary	35,673.33	Tenkasi	2015
16	Kadavur Slender Loris Sanctuary	11,806.56	Karur and Dindigul	2022

Sl. No	Name of Wildlife Sanctuary	Extent (in ha)	Districts	Year of Notification
17	Cauvery South Wildlife Sanctuary	68,640.613	Krishnagiri & Dharmapuri	2022
18	Thanthai Periyar Wildlife Sanctuary	80,114.80	Erode	2024

These wildlife sanctuaries play a crucial role in biodiversity conservation, habitat protection, and eco-tourism in Tamil Nadu. They offer visitors opportunities to experience the state's natural heritage and witness its diverse wildlife in their natural habitats. Conservation efforts, including habitat restoration, anti-poaching measures, and community involvement, are essential for safeguarding these sanctuaries and their ecosystems for future generations.

2.5 Bird Sanctuaries

Tamil Nadu is home to several bird sanctuaries, which provide crucial habitats for both resident and migratory bird species. These sanctuaries are important for avian conservation and offer excellent opportunities for birdwatching and eco-tourism.

Tamil Nadu has 254 bird genera and 493 Bird species. The State of Tamil Nadu is well known globally for attracting a large number of migratory birds. Every year migratory birds from different parts of the world, flock to various tanks, ponds and lakes in Tamil Nadu as they find suitable ecological conditions and habitats for feeding, breeding and raising their young ones.

Tamil Nadu State notified Vedanthangal Bird Sanctuary way back in 1936, which is the first Bird

Sanctuary in India. Tamil Nadu Government has notified 17 Bird Sanctuaries as below:-

Sl. No	Name of Bird Sanctuary	Extent (in ha)	Districts	Year of Notification
1	Vedanthangal Bird Sanctuary	30.00	Kancheepuram	1936
2	Vettangudi Bird Sanctuary	38.40	Sivaganga	1977
3	Pulicat Lake Bird Sanctuary	15,367	Tiruvallur	1980
4	Karikili Bird Sanctuary	61.21	Chengalpet	1989
5	Kanjirankulam Bird Sanctuary	104.00	Ramanathapuram	1989
6	Chitrangudi Bird Sanctuary	47.63	Ramanathapuram	1989
7	Koonthankulam-Kadankulam Bird Sanctuary	129.00	Tirunelveli	1994
8	Vellode Bird Sanctuary	77.18	Erode	2000
9	Udayamarthandpuram Bird Sanctuary	45.28	Tiruvarur	1998
10	Melaselvanur-Kilaselvanur Bird Sanctuary	593.08	Ramanathapuram	1998
11	Vaduvoor Bird Sanctuary	128.10	Tiruvarur	1999
12	Karaivetti Birds Sanctuary	453.71	Ariyalur	1999
13	Theerthangal Bird Sanctuary	29.29	Ramanathapuram	2010
14	Sakkarakottai Tank Bird Sanctuary	230.49	Ramanathapuram	2012
15	Oussudu Lake Bird Sanctuary	331.785	Villupuram	2015
16	Kazhuveli Bird Sanctuary	5151.60	Villupuram	2021
17	Nanjarayan Tank Birds Sanctuary	125.865	Tiruppur	2022

2.6 Conservation Reserves

Tamil Nadu has established Conservation Reserves to protect and conserve areas that are of ecological significance or contain unique biodiversity. Conservation Reserves are areas where the landscape, flora, and fauna are protected and managed for conservation and sustainable use. These reserves complement national parks and wildlife sanctuaries in conserving biodiversity and maintaining ecological balance.

The State Government notified the following 3 Conservation Reserves under Sec 36A of the Wildlife Protection Act, 1972.

SI. No	Name of Conservation Reserve	Extent (in ha)	District	Year of Notification
1	Thiruppudaimaruthur Birds Conservation Reserve	2.84	Tirunelveli	2005

SI. No	Name of Conservation Reserve	Extent (in ha)	District	Year of Notification
2	Suchindrum-Theroor –Managudi Conservation Reserve	483.92	Kanniyakumari	2015
3	Dugong Conservation Reserve in Palk Bay	44,834	Thanjavur	2022

These Conservation Reserves in Tamil Nadu are managed to protect natural habitats, conserve biodiversity, and promote sustainable use of natural resources. They play a crucial role in maintaining ecological balance, preserving unique ecosystems, and providing opportunities for research, education, and eco-tourism.

2.7 Tiger Reserves

Tamil Nadu is home to Five Tiger Reserves. Tiger Reserve is an area specifically designated for the conservation and protection of

tigers and their habitats. The "Project Tiger" was launched in April 1973 to ensure the maintenance of a viable population of Tigers in India for scientific, economic, aesthetic, cultural and ecological values, and to preserve for all times, areas of biological importance as a national heritage for the benefit, education and enjoyment of the people.

The State of Tamil Nadu has been a Pioneer in declaring a Tiger Sanctuary at Mundanthurai way back in 1962, eleven years before the launch of 'Project Tiger' in the country. Tamil Nadu has notified the following five Tiger Reserves in the State

Area in sq. km

Sl. No	Name of Reserve	District(s)	Core area	Buffer area	Total area
1	Kalakad-Mundanthurai Tiger Reserve	Tirunelveli and Tenkasi	895.000	706.542	1,601.542
2	Anamalai Tiger Reserve	Coimbatore and Tiruppur Districts	958.590	521.280	1,479.870
3	Mudumalai Tiger Reserve	The Nilgiris	321.000	367.590	688.590
4	Sathyamangalam Tiger Reserve	Erode	793.493	614.912	1,408.405
5	Srivilliputhur-Megamalai Tiger Reserve	Virudhunagar, Theni and Madurai	641.862	374.709	1,016.571

Conservation efforts in Tiger Reserves will focus on habitat protection, anti-poaching measures, wildlife monitoring, and community engagement. These reserves are an important stronghold for tiger conservation in southern India and play a crucial role in maintaining ecological balance and preserving biodiversity in the region.

2.8 Elephant Reserves

Tamil Nadu has 5 Elephant Reserves. The state is home to a significant population of Asian elephants, and conservation efforts are in place to protect their habitats and mitigate human-elephant conflicts to sustain the elephant population in Tamil Nadu.

Project Elephant was launched by the Government of India in 1992 to protect elephants and their habitat. The key objective of Project Elephant is to protect elephant corridors and elephant habitats for the survival of the elephant population in the wild. For habitat and corridor management and based on the spatial distribution of elephant movements, Elephant Reserves are notified encompassing two or more Districts and States. An area of 1,19,748.26 ha in Kalakad Mundanthurai Tiger Reserve (KMTR) and

Kanyakumari Wildlife Sanctuary was notified as Agasthyamalai Elephant Reserve in 2022- 23.

Tamil Nadu Government notified the following five Elephant Reserves in the State;-

Sl. No	Name of the Elephant Reserve	District(s)	Area in ha
1	Nilgiris – Eastern Ghat (Nilgiri Elephant Reserve)	Nilgiris, Erode, Dharmapuri Krishnagiri	4,66,245
2	Nilambur Silent Valley - Coimbatore Elephant Reserve (Nilambur Elephant Reserve)	Coimbatore, Nilgiris	56,557
3	Periyar Elephant Reserve (Srivilliputhur Elephant Reserve)	Theni, Virudhunagar, Tenkasi	1,24,910
4	Anamalai – Parambikulam Elephant Reserve (Anamalai Elephant Reserve)	Coimbatore, Dindigul	1,45,723
5	Agasthyamalai Elephant Reserve	Tirunelveli and Kaniyakumari	119748.26

Conservation initiatives in these regions focus on habitat protection, mitigating human-elephant conflicts, promoting eco-sensitive practices, and raising awareness among local communities about

the importance of elephant conservation. It's important to note that elephant conservation in Tamil Nadu is a dynamic and ongoing process, and efforts to protect these magnificent animals and their habitats continue to evolve with the changing landscape and conservation challenges.

2.9 Biosphere Reserves

Tamil Nadu is home to three Biosphere Reserves, designated by UNESCO to recognize their unique biodiversity and the coexistence of humans and nature sustainably.

The programme of Biosphere Reserve was initiated by UNESCO in 1971 under the Man and the Biosphere (MAB) Programme. The purpose of the formation of Biosphere Reserves is to conserve "*in situ*" all forms of life, along with its support system, in its totality, so that it could serve as a

referral system for monitoring and evaluating changes in natural ecosystems.

1. **Nilgiris Biosphere Reserve**: Located in the Western Ghats, the Nilgiris Biosphere Reserve is spread across Tamil Nadu, Kerala, and Karnataka. It encompasses several protected areas, including national parks, wildlife sanctuaries, and reserved forests. The reserve is known for its high levels of biodiversity and endemic species. Key components within the Tamil Nadu portion of the Nilgiris Biosphere Reserve include the Mudumalai Wildlife Sanctuary and Mukurthi National Park. The Nilgiris Biosphere Reserve was designated as a UNESCO World Heritage Site in 2012.

2. **Gulf of Mannar Biosphere Reserve**: Situated along the southeastern coast of Tamil Nadu, the Gulf of Mannar Biosphere Reserve encompasses

a marine area rich in biodiversity, including coral reefs, seagrass beds, mangroves, and diverse marine fauna. The biosphere reserve includes 21 islands and stretches from Rameswaram to Tuticorin. It is known for its rich marine biodiversity, including threatened species such as sea turtles, dugongs, and various fish species. The Gulf of Mannar Biosphere Reserve was designated by UNESCO in 1989. It covers an area of 10,50,000 ha in Ramanathapuram, Tuticorin, Tirunelveli and Kanyakumari Districts.

3. **Agasthiyamalai Biosphere Reserve**. It covers an area of 1,67,236 ha in Tirunelveli, Kanyakumari and Tenkasi Districts.

These Biosphere Reserves play a crucial role in conserving biodiversity, protecting ecosystems, and promoting sustainable development in the region. They serve as living laboratories for

research, education, and community involvement in conservation efforts. Additionally, they contribute to the preservation of cultural heritage and traditional knowledge of local communities. Management of Biosphere Reserves involves collaboration between government agencies, local communities, conservation organizations, and other stakeholders to balance conservation with sustainable development goals.

3. Recent initiatives by the Tamil Nadu Forest Department to tackle Human-Wildlife Conflict

- The Tamil Nadu Forest Department has been implementing various initiatives to tackle human-wildlife conflict (HWC) in the state. These initiatives aim to minimize conflicts between humans and wildlife while ensuring the conservation of biodiversity and the

protection of both human and animal lives. Some recent initiatives include:

- The Chief Minister of Tamil Nadu has launched India's first-ever Elephant Death Audit Framework to conduct a detailed analysis of the death of elephants in the wild to understand issues relating to unnatural and preventable deaths and prescribe suitable management interventions.
- To prevent the unnatural death of wild animals especially elephants by country-made explosives, a District Level Committee was constituted. The committee convenes periodic meeting and interacts with various stakeholders involved and ensures the prevention of illegal supply of explosives and erection of illegal electric lines. Frequent joint inspections with police and TANGEDCO Officials are also being carried out.

- Rules have been framed in 2023 for erection of solar electric fences in the vicinity of forest areas on private and government lands to streamline the power fences along the forest boundaries as well as to control illegal fencing practices which are harmful to wild animals.
- Tamil Nadu is a pioneer in conservation of bird species in the country. The State has 17 bird sanctuaries out of which 14 are declared as Ramsar sites. In order to strengthen the conservation efforts, the government has constituted "State Bird Authority" for conservation of birds.
- Artificial Intelligence based surveillance system - To use the latest available technology to watch the elephant movement and alert the loco pilots as well as other concerned persons regarding the movement

of elephants along the railway tracks, the Government had accorded sanction to install Artificial intelligence based Surveillance system to monitor the movements of elephants, even during night hours to address the above conflict situation completely at Madukarai, Coimbatore. It was established at a cost of Rs.7.24 Cr. and inaugurated on 09.02.2024.

- **Unmanned drone:** In order to keep elephants from wandering on to railway tracks and causing accidents, drone equipped with loud speaker are proposed to be deployed in Madukkarai Forest, Coimbatore at a cost of Rs. 8.28 crores under Modernisation of Forest Force Scheme.
- **Command Control Centre:** Under the Tamil Nadu Modernization of Forest Force Scheme, to monitor the wild animals entering human

habitats from the forest areas, artificial intelligence-equipped sensor to be installed at about 90 places at a cost of Rs.6.00 crore and the information obtained from them will be sent from command control room to the public and concerned officials to take prompt action. The project is to be implemented in Gudalur, The Nilgiris District for human wildlife conflict management and prevention.

- The Government had sanctioned Rs. 10.00 Crores towards setting up Real time Monitoring System to monitor movement of Elephant herds by strengthening alert mechanisms and address human-elephant conflict under TANII Scheme. A pilot project on laying overhead Aerial Bunched Cable (ABC) 11 KV Line from Thorappalli to Theppakkadu in core area of Mudumalai

Tiger Reserve at a cost of Rs.5.00 Cr has been initiated.

- **State of Art facilities for better maintenance and upkeep of captive elephants**: The Government has sanctioned a sum of Rs. 8.00 Crores for setting up of a new elephant camp at Sadivayal in Coimbatore District. The Government has also accorded sanction to upgrade 2 old elephant camps in Kozhikamuthi and Theppakkadu.
- A sum of Rs 10.465 crores has been sanctioned to provide better accommodation to 91 traditional Mahouts and Cavadies engaged in the camps by the Forest Department.
- Training had been given to 13 Mahouts and Cavadies in Thai elephant conservation centre, Thailand in February 2023 to learn

about the best practices used in captive elephant management. Another team will also be sent this year.

- The Government of Tamil Nadu constituted two committees for submissions of report on consolidated viable Elephant Corridors in Tamil Nadu to ensure free movement of elephants between different habitats.
- **Farmers-Wildlife Conflict Resolution Committee:** A special committee of representatives from Agricultural and Forest Department, Revenue Department, Agriculture Department, Horticulture department, scientific experts, volunteers and wildlife enthusiasts has been constituted to study the impact of raids by wild animals such as elephants and wild pigs on agricultural crop and send recommendations to the Government.

- Conventional measures like Creation of Elephant Proof Trenches, Solar Powered Fence, Stone wall fences, steel wire rope fences, hanging solar fences along with creation of fodder resources, percolation ponds, check-dams, water holes, water troughs inside forest areas, Deployment of Anti-depredation squads, Regular patrolling by Anti-poaching watchers have been carried out to avoid straying of wildlife into human habitations.
- The Forest Department has taken proactive measures like Early Warning system, Radio collaring of wild elephants and other conflict animals for real time monitoring, Artificial Intelligence based Elephant Alert system, Trip wire Alarm System, Geo-referenced elephant monitoring system to augment the conventional measures.

- Along with the above, the strayed wild animals are being driven back to the Forests by using rapid response teams and Anti-poaching watchers with the help of the above-mentioned systems.
- Some of the frequently straying wild animals are being identified and captured using Kumki elephants and tranquilizers under the supervision of expert veterinarians under Section 11(1) of the Wildlife (Protection) Act, 1972.
- Awareness about the Human wildlife conflict is being created among the public and frequent meetings with the District Administration are being conducted for effective management of the conflict.
- Compensation is being provided to the affected persons and farmers for human

fatality, human injury, crop and property damages

- Project Dolphin was launched and implemented in Ramanathapuram from November 2023.
- 1st Interstate Synchronized Census of Vultures was conducted on 25.02.2023 and 26.02.2023 by Tamil Nadu (Mudumalai Tiger Reserve & Sathyamangalam Tiger Reserve), Kerala (Wayanad Wildlife Sanctuary), and Karnataka (Bandipur Tiger Reserve & Nagarhole Tiger Reserve). It revealed that the Vulture population has significantly increased in Tamil Nadu from 100 to 142.
- Thanthai Periyar Wildlife Sanctuary was notified in Erode District.
- Climate resilient turtle hatcheries can protect sea turtle eggs from the adverse effects of climate change, such as rising temperatures,

sea level rise, and extreme weather events. A climate-proof hatchery can ensure the optimal incubation conditions for the eggs, and produce healthy and resilient hatchlings that can survive and contribute to the population. 53 such hatcheries across 10 coastal Districts of Tamil Nadu were formed to ensure better survival of Olive Ridley turtle hatchlings.

- A new ambulance has been purchased at a cost of Rs 13.5 lakh for the benefit of 124 families living in Kozhikamuthi settlement of Anamalai Taluk in Coimbatore district.

These initiatives reflect the proactive approach of the Tamil Nadu Forest Department in addressing human-wildlife conflict challenges and promoting harmonious coexistence between humans and wildlife. Ongoing efforts are focused on continuous monitoring, evaluation of effectiveness, and

adaptive management strategies to minimize conflicts and ensure the conservation of biodiversity in the state.

3.1 Wildlife Management Outside Protected Areas:

Tamil Nadu Forest Department implements various wildlife management strategies outside protected areas to mitigate human-wildlife conflicts, conserve biodiversity, and promote coexistence between wildlife and local communities. These efforts primarily focus on areas where wildlife habitats overlap with human settlements, agricultural lands, and other human-dominated landscapes. Here are some key wildlife management initiatives undertaken outside protected areas in Tamil Nadu:

i. Corridor Conservation: Efforts have been initiated to identify and conserve wildlife

corridors that connect fragmented habitats, allowing for the movement of animals between protected areas. These corridors are vital for maintaining genetic diversity, facilitating seasonal migrations and reducing genetic isolation among wildlife populations. These corridors are required to reduce man animal conflict in critical areas of dis connectivity between different wildlife habitats.

ii. Community-Based Conservation: Engaging local communities in wildlife conservation efforts through participatory approaches such as Community Reserves, Community Forest Management (CFM), and Joint Forest Management (JFM). These initiatives empower communities to take ownership of natural resources, protect wildlife habitats, and benefit from sustainable resource use practices.

iii. Human-Wildlife Conflict Mitigation: Implementing measures to minimize conflicts between human and wildlife outside protected areas, particularly in agricultural landscapes. This includes the deployment of deterrents like electric fences, chilli smoke barriers, and beehive fences to prevent crop raiding by elephants, wild boars, and other animals.

iv. Wildlife Rescue and Rehabilitation: Establishing wildlife rescue and rehabilitation centers to provide medical care and shelter to injured, orphaned, or displaced wildlife outside protected areas. These centers also play a crucial role in rescuing and relocating conflict-prone animals, mitigating human-wildlife conflicts, and raising awareness about wildlife conservation.

v. Awareness and Education: Conducting awareness programs, workshops, and training

sessions to educate local communities, farmers, and stakeholders about wildlife conservation, sustainable land management practices, and the importance of coexisting with wildlife. Public outreach activities aim to foster a sense of stewardship towards wildlife and promote positive attitudes towards conservation.

vi. Livelihood Enhancement: Supporting alternative livelihood options for communities living in wildlife-affected areas to reduce dependency on natural resources and alleviate poverty. This may include promoting eco-tourism, agroforestry, sustainable agriculture, and other income-generating activities that are compatible with wildlife conservation objectives.

vii. Research and Monitoring: Conducting scientific research, wildlife surveys, and monitoring programs to assess wildlife

populations, habitat status, and human-wildlife interactions outside protected areas. Data obtained from research studies inform evidence-based conservation strategies and management decisions aimed at safeguarding biodiversity and ecological integrity.

Monitoring the status of Sea turtles at important nesting and foraging sites along the coastal line of Tamil Nadu and excavation and relocation of nests in 53 hatcheries of Forest Department and releasing of nearly two lakh turtle hatchlings after emergence every year.

These wildlife management initiatives outside protected areas in Tamil Nadu demonstrate a holistic approach to wildlife conservation that integrates ecological, social, and economic considerations. By engaging local communities, implementing sustainable practices, and

fostering coexistence with wildlife, the Tamil Nadu Forest Department strives to ensure the long-term viability of wildlife populations and habitats across the state.

3.2 Invasive Species

Introduction:

Invasive species are non-native organisms that, when introduced to a new environment, can cause harm to the ecosystem, economy, or human health. Tamil Nadu, like many other regions, faces challenges associated with invasive species. Tamil Nadu Forest areas are enriched with enough floral reserves since time immemorial. Plants which are useful for medicine and fodder were seen in abundance in the Tamil Nadu Forest. Due to the introduction of foreign species as fodder, forest areas were invaded by above species due to grazing. Due to this the floral resources of forest were depleted massively. Due to the depletion of

fodder and medicinal plant area the population of the fauna has forced to move out of the forest. To avoid and prevent the outside movement of the Wild animals in the forest, Government has taken steps to remove invasive species from the forest.

Invasive species are considered one of the most significant threats to conservation of Biodiversity due to their impact on native species in Ecosystems around the world.

Efforts undertaken:

In order to protect the native species, Government has sanctioned an amount of Rs. 7.00 Cr. for removal of 3 major invasive species such as *Prosopis juliflora*, *Lantana camara* and *Wattle* over an extent of 1,041 Ha for the year 2023-24.

Total Extent of invasives removed in Tamil Nadu:

During 2023-2024, the invasive species were removed over a total extent of 7,198.47 Ha.

S. No.	Name of the species	Invasive cleared (in Ha)
1.	Lantana Camara	3,270.78
2.	Prosopis juliflora	2,116.19
3.	Senna Spectabilis	990.50
4.	Wattle	787.00
5.	Euphatorium	10.00
6.	Parthenium hysterophorus	24.00
	Total	**7,198.47**

Tamil Nadu Policy on Invasive Plants and Ecological Restoration (TN PIPER):

Tamil Nadu has exclusive policy and initiatives aimed at managing invasive plants and promoting ecological restoration.

As per the announcement of the Hon'ble Minister for Forests on the floor of the Legislative

Assembly on 03.09.2021, "Tamil Nadu Policy on Invasive Plants and Ecological Restoration (TN PIPER)" has been notified, which is one of first policy on invasives in India.

The Policy aims at identification, prevention of spread, development appropriate control and eradication of all invasive alien plant species in terrestrial and wetland ecosystems of Tamil Nadu.

1. **Invasive Species Management**: The Tamil Nadu Forest Department, in collaboration with other relevant agencies, implements strategies to control and manage invasive plant species. This includes surveys to identify invasive species, monitoring their spread, and implementing control measures such as manual removal, herbicide application, and biological control using natural enemies.

2. **Legislation and Regulations**: There are legislation and regulations in place to prevent the introduction and spread of invasive species. These include quarantine measures, restrictions on the import and sale of invasive plant species, and penalties for non-compliance.

3. **Awareness and Education**: Public awareness campaigns and educational programs is conducted to inform communities, stakeholders, and the general public about the threats posed by invasive species and the importance of preventing their spread. These initiatives include workshops, seminars, posters, and outreach activities.

4. **Ecological Restoration**: The Tamil Nadu government have policies and programs

focused on ecological restoration, including efforts to rehabilitate degraded ecosystems, restore native vegetation, and enhance biodiversity. Restoration activities include reforestation, afforestation, soil conservation, wetland restoration, and habitat enhancement projects.

5. **Research and Monitoring**: There are efforts to conduct research and monitoring to assess the impact of invasive species on ecosystems, evaluate the effectiveness of management strategies, and identify priority areas for restoration and conservation. Research findings can inform evidence-based decision-making and adaptive management approaches.

6. **Partnerships and Collaborations**: Collaboration with research institutions, non-

governmental organizations (NGOs), community groups, and other stakeholders is likely key to the success of invasive species management and ecological restoration initiatives. Partnerships can leverage expertise, resources, and community engagement to achieve shared conservation goals.

7. **Integration with Sustainable Development Goals**: Efforts to address invasive species and promote ecological restoration are integrated with broader sustainable development goals (SDGs), including biodiversity conservation, climate change mitigation and adaptation, poverty alleviation, and sustainable livelihoods.

These are some of the key components that is part of Tamil Nadu's approach to addressing invasive plants and promoting ecological restoration.

4. Important Schemes

In order to achieve the policy initiatives, SDGs and key results, the following programmes are aligned accordingly and are being implemented in the Department:

4.1. Major State Schemes

4.1.1. Tamil Nadu Biodiversity Conservation and Greening Project for Climate Change Response (TBGPCCR)

The "Tamil Nadu Biodiversity Conservation and Greening Project for Climate Change Response (TBGPCCR)" with an outlay of Rs.920.52 crores is under implementation from 2022-23. This project will be implemented over a period of 8 years till 2029-30. The project aims to mitigate and adapt to

climate change and improve ecosystem in tune with the forest policy. Five major components viz. (i) Ecosystem based climate change measures, (ii) Human wildlife conflict measures, (iii) Promoting supply chain development, (iv) Livelihood improvement activities, and (v) Management capacity development, are being implemented with focus on climate change mitigation and socio-economic development of villagers. The project aims to - increase Carbon storage through Urban and Peri-urban Forestry (UPF), Restore coral reef area (blue carbon storage), Restore Sea weed / Sea grass area (blue carbon storage), Increase area of mangroves, arrest the rate of increase in human wildlife conflict incidences, Increase annual household income of tribal people in 155 Integrated Tribal Development Programme (ITDP) villages & 4 Community Based Eco-Tourism (CBET)

sites, increase in Trees Outside Forest (TOF) cover and provide capacity Building to Stakeholders.

Apart from these, the project provides for undertaking various research activities including wildlife research, and various studies which are expected to help in formulating policies in the future.

Moreover, the project would focus on the Demand Supply Chain Linkage of Non Timber Forest Produce (NTFP), New techniques for Rejuvenation / Rehabilitation of coral, mangrove and sea grass habitats, Mitigation of Human Wildlife Conflicts by adopting combination of techniques, Financially self-sustaining CBET, Financially self-sustaining Ex-situ Wildlife Conservation by implementing the activities enshrined in different components.

This project will be implemented during 2024-25 at an outlay of Rs.75 crores.

4.1.2. Restoration of Degraded Forests Landscape in Tamil Nadu

The "Restoration of Degraded Forests Landscape in Tamil Nadu (Funded by NABARD)" at an outlay of Rs.481.148 Crore is under implementation from 2022-23. This project will be implemented over a period of 5 years till 2026-27. The project aims to revive and enliven the watersheds / catchments, harvesting and storing maximum rainwater in the Forest areas, facilitating natural regeneration and providing sustained supply of water for crops & drinking water to people and eliciting judicious use of water.

Various activities including maintenance works such as Restoration of Degraded Forests Landscape, Restoration of Sandal Landscape, Restoration of Mangrove Landscape, Restoration of Red Sanders landscape, Rejuvenation of Kosasthalaiyar & Araniyar river landscape and

Forest fire protection and disaster management are proposed to be implemented during 2024-25 at an outlay of Rs 94.44 Crore.

4.2 Ongoing Schemes

4.2.1 Teak Plantations

The scheme of Raising Teak plantations, over an area of 6,000 ha, was approved for a period of 8 years from 2017-18 at a total financial outlay of Rs.52.64 Crore. An extent of 5,565.55 ha was planted till 2021-22 at a total cost of Rs.24.05 Crores.

4.2.2 Sandal Plantations

In Tamilnadu Jawadhi Hills, Shervaroyan Hills, Kolli Hills, Pachamalai Hills and Chitheri Hills are the traditional sandalwood-bearing areas. The scheme of Raising Sandal Plantations in Reserve Forests for a period of 10 years from 2015-16 to 2024-25 with a financial outlay of Rs.100 crores

was sanctioned to enhance the growing stock of sandal in traditional sandalwood areas. Approximately 7.10 lakh seedlings were planted at a cost of Rs.8.94 Crore.

4.2.3 Elephant Conservation Scheme

Tamil Nadu implements various schemes and initiatives for elephant conservation.

Habitat Conservation: Protecting and conserving elephant habitats is a key aspect of elephant conservation efforts. This involves maintaining and restoring forested areas, wildlife corridors, and water sources that are essential for elephant populations. The Tamil Nadu Forest Department works to secure and manage protected areas, national parks, wildlife sanctuaries, and other forested landscapes to ensure suitable habitats for elephants.

1. **Human-Elephant Conflict Mitigation**: Addressing human-elephant conflicts (HECs) is crucial for the well-being of both elephants and human communities. The Tamil Nadu Forest Department implements strategies to mitigate conflicts, such as deploying early warning systems, installing physical barriers like trenches and electric fences, promoting crop protection measures, and providing compensation for crop damage and loss of life or property caused by elephants.

2. **Monitoring and Research**: Conducting scientific research and monitoring programs to study elephant populations, behavior, movement patterns, and health status is essential for informed decision-making and effective management. The Tamil Nadu Forest Department collaborates with research institutions, conservation

organizations, and academic partners to gather data and insights into elephant ecology and conservation needs.

3. **Awareness and Education**: Raising awareness among local communities, stakeholders, and the general public about the importance of elephant conservation and the need for coexistence is essential. The Tamil Nadu Forest Department conducts awareness campaigns, educational programs, and outreach activities to promote understanding, tolerance, and support for elephant conservation efforts.

4. **Capacity Building**: Building the capacity of forest department staff, frontline workers, and local communities to effectively manage and conserve elephant populations is critical. Training programs, workshops, and skill-

building initiatives are conducted to enhance knowledge, skills, and capacities related to elephant conservation, habitat management, and conflict mitigation.

5. **Collaboration and Partnerships**: Collaboration with various stakeholders, like government agencies, non-governmental organizations (NGOs), research institutions, local communities, and other states, is essential for comprehensive elephant conservation efforts. Partnerships can facilitate resource mobilization, knowledge sharing, and collective action to address conservation challenges.

6. **Policy Support**: Enacting and enforcing policies and regulations that support elephant conservation, habitat protection, and human-elephant conflict management is

fundamental. The Tamil Nadu government formulates and implements policies, guidelines, and legal frameworks to safeguard elephant populations and their habitats.

As a result of increasing human-wildlife conflict, various mitigation measures are taken up by adopting a multi-pronged strategy involving habitat improvement and augmenting water sources, improving fodder resources for wildlife inside the forest area, formation of physical barriers along the forest boundary, as well as awareness creation amongst the local people. During 2023-24, an amount of Rs.241.190 lakh was spent and it will be continued in 2024-25.

Elephant conservation in Tamil Nadu involves a multi-faceted approach that integrates habitat conservation, conflict mitigation, research,

awareness, capacity building, and policy support. By addressing the various challenges facing elephants and their habitats, Tamil Nadu aims to ensure the long-term survival and well-being of elephant populations in the state.

4.2.4. Payment for Compensation for the damages caused by wild animals

Compensation for damages caused by wild animals, is provided by the state government through the Tamil Nadu Forest Department. The compensation aims to alleviate the economic losses incurred by individuals, especially farmers, due to crop damage, livestock predation, or property damages caused by wild animals.

Human-wildlife conflict refers to a negative interaction between human and wild animals, with undesirable consequences for both people and their resources and wildlife and their habitats (IUCN,2020). This not only impacts the person but

has very adverse impacts on the whole family. Development of barriers such as trenches and fences along the forest boundaries, monitoring of movement of wildlife, and augmenting fodder and water resources are the major activities carried out to prevent conflicts. The Department is paying compensation to legal heirs of deceased families, and farmers who lose their crops and properties in these conflicts. During 2023-24, an amount of Rs.16.40 crores was sanctioned by the State Government. A dedicated bank account for speedy settlement of compensation was opened in all Forest Divisions. This scheme will be continued during 2024-25.

It's important to note that while compensation provides relief to affected individuals, efforts to prevent and mitigate human-wildlife conflicts through habitat management, community engagement, and awareness programs

are equally important. By addressing the root causes of conflicts and promoting coexistence between humans and wildlife, the Tamil Nadu Forest Department aims to reduce the occurrence of damages caused by wild animals and ensure the sustainable conservation of wildlife populations.

4.2.5. Construction of Concrete Wall and bio-fencing to protect RF in and around Chennai from encroachment/ garbage dumping

"Providing Concrete and live fencing for protection of Reserve Forests around Chennai city" has been sanctioned and is being implemented to prevent encroachments and prevent the forest area from pollution due to the activities of rapid urbanisation, at a cost of Rs.25.00 crore. As of 31.3.2024, an amount of Rs. 24.73 crore was

incurred for the Construction of compound and bio-fencing.

4.3 Centrally Sponsored Schemes

The following schemes are jointly funded by the Central and the State Government in a ratio of 60:40 and are categorised as the Centrally Sponsored Schemes.

4.3.1. Integrated Development of Wildlife Habitats

Integrated Development of Wildlife habitats has the following components: -

- Support to Protected Areas (National Parks, Wildlife Sanctuaries, Conservation Reserves and Community Reserves)
- Protection of wildlife outside protected areas.
- Recovery programs for saving critically endangered species and habitats.

The Government of India has sanctioned funds for the developmental activities in National Parks, Wildlife Sanctuaries and Conservation reserves. During 2023-24, an amount of Rs.32.25 Crore has been sanctioned and this scheme will be continued during 2024-25.

4.3.2. Project Tiger

Project Tiger, launched in 1973 by the Government of India, aims to conserve the Bengal tiger and its habitat through the establishment and effective management of tiger reserves across the country. In Tamil Nadu, the Project Tiger initiative has led to the establishment of several tiger reserves and the implementation of conservation measures to protect the Bengal tiger and its associated ecosystems.

Conservation Measures: Project Tiger in Tamil Nadu implements various conservation measures

to protect tigers and their habitats. These include habitat management, anti-poaching patrols, wildlife monitoring, community participation, and scientific research. Efforts are made to mitigate human-wildlife conflicts, address habitat fragmentation, and enhance ecological connectivity within tiger reserves.

1. **Community Participation**: Project Tiger promotes community participation and stakeholder engagement in tiger conservation efforts. Local communities living in and around tiger reserves are involved in conservation initiatives, including eco-development programs, livelihood support, and awareness campaigns. Collaborative efforts aim to reduce human-wildlife conflicts, promote sustainable livelihoods, and garner support for tiger conservation.

2. **Research and Monitoring**: Project Tiger facilitates research and monitoring programs to assess tiger populations, monitor habitat status, and evaluate conservation interventions. Scientific studies on tiger ecology, behavior, genetics, and health provide valuable insights for conservation planning and management. Camera trapping, radio telemetry, and genetic analysis are used to study tiger populations and their dynamics in Tamil Nadu's tiger reserves.

3. **Tourism and Education**: Project Tiger promotes responsible nature-based tourism as a means to generate revenue for tiger conservation and raise awareness among visitors about the importance of tiger conservation. Ecotourism initiatives, interpretation centers, nature trails, and

educational programs offer opportunities for visitors to learn about tigers, biodiversity, and forest ecosystems while supporting local communities and conservation efforts.

To reduce the anthropogenic disturbances in Critical Tiger Habitats in Tiger Reserves, 435 families have been relocated from the core area of Mudumalai Tiger Reserve. With respect to recurring works, the funds are sanctioned in the ratio of 50:50 and for Non-Recurring it is 60:40 by the Central and State Governments. During 2023-24, an amount of Rs.42.34 crore has been sanctioned and this scheme will be continued during 2024-25.

Project Tiger has played a significant role in the conservation of tigers and their habitats in Tamil Nadu, contributing to the state's efforts to safeguard its natural heritage and promote sustainable development. Ongoing conservation

efforts under Project Tiger are essential for ensuring the long-term survival of tigers and maintaining ecological balance in Tamil Nadu's forests.

4.3.3. Project Elephant

Project Elephant is a conservation initiative launched by the Government of India in 1992 to protect elephants, their habitats, and corridors across the country. Tamil Nadu, with its significant elephant population and extensive forest cover, is actively involved in implementing Project Elephant to address the conservation needs of elephants in the state. Here are the key aspects of Project Elephant in Tamil Nadu:

1. **Elephant Reserves**: Tamil Nadu is home to 5 elephant reserves designated under Project Elephant to protect critical elephant habitats and migratory routes. The elephant

population in Tamil Nadu has been estimated to be about 2,961 as per the last synchronized census conducted in 2022. It provides habitat for a significant population of Asian elephants and supports biodiversity conservation in the region.

2. **Habitat Management**: Project Elephant in Tamil Nadu focuses on habitat management to conserve and restore elephant habitats. Initiatives include habitat improvement, soil and water conservation, afforestation, invasive species control, and restoration of degraded landscapes to enhance food and water availability for elephants.

3. **Human-Elephant Conflict Mitigation**: Project Elephant implements measures to mitigate human-elephant conflicts in Tamil Nadu, where incidents of crop raiding

and property damage by elephants are common. Strategies include the establishment of elephant-proof trenches, solar-powered electric fences, bio-fencing using thorny plants, early warning systems, and compensation schemes for affected communities.

4. **Anti-Poaching and Law Enforcement**: Project Elephant supports anti-poaching efforts and strengthens law enforcement measures to combat wildlife crime, including poaching of elephants for ivory and other body parts. Forest department personnel are trained and equipped to patrol elephant habitats, monitor illegal activities, and apprehend poachers and wildlife traffickers.

5. **Community Participation**: Project Elephant promotes community participation

and stakeholder engagement in elephant conservation efforts. Local communities living in and around elephant habitats are involved in conservation initiatives, including awareness campaigns, livelihood support programs, and alternative income-generating activities to reduce dependency on forest resources and minimize human-elephant conflicts.

6. **Research and Monitoring**: Project Elephant facilitates research and monitoring programs to assess elephant populations, monitor habitat status, and evaluate conservation interventions. Scientific studies on elephant ecology, behavior, genetics, and health provide valuable insights for conservation planning and management.

7. **Tourism and Education**: Project Elephant encourages responsible wildlife tourism and educational programs to raise awareness about elephant conservation among visitors and local communities. Ecotourism initiatives, interpretation centers, elephant safaris, and nature trails offer opportunities for visitors to learn about elephants, biodiversity, and forest ecosystems while supporting conservation efforts.

During 2023-24 an amount of Rs.6.84 crore has been sanctioned and this scheme will be continued during 2024-25.

Project Elephant plays a crucial role in the conservation of elephants and their habitats in Tamil Nadu, contributing to the state's efforts to safeguard its natural heritage and promote

harmonious coexistence between humans and elephants. Ongoing conservation efforts under Project Elephant are essential for ensuring the long-term survival and well-being of elephants in Tamil Nadu's forests.

4.3.4. Forest Fire prevention and Management Scheme (CSS)

Tamil Nadu is also implementing various Forest fire prevention and management initiatives as it is done in other states. Following are the Tamil Nadu Government's approach on Forest fire prevention and management:-

1. **Fire Lines and Firebreaks**: Creating and maintaining fire lines and firebreaks in forest areas to prevent the spread of wildfires. These are cleared areas where vegetation is removed to create barriers that can help to contain fires and prevent them from spreading to adjacent areas.

2. Early Warning Systems: Implementing early warning systems to detect and respond to forest fires promptly. This may involve the use of watchtowers, remote sensing technology, and community-based surveillance to detect smoke or signs of fire activity.

3. Capacity Building: Training forest department staff, frontline workers, and local communities in fire prevention, firefighting techniques, and emergency response protocols. Capacity-building programs aim to enhance skills, knowledge, and preparedness to deal with forest fires.

4. Public Awareness and Education: Conducting awareness campaigns, workshops, and training programs to educate forest-dependent communities, stakeholders, and the general public about the causes of forest fires, fire

safety measures, and the importance of preventing wildfires. Public outreach activities aim to foster a culture of fire prevention and responsible forest management practices.

5. **Community Participation**: Engaging local communities in forest fire prevention and management efforts through participatory approaches such as community-based fire management committees, fire volunteer groups, and collaborative fire management initiatives. Community participation enhances the effectiveness of fire prevention and response activities and promotes shared responsibility for forest protection.

6. **Research and Monitoring**: Conducting research, monitoring, and assessment of fire risk factors, fire behavior, and ecological impacts of wildfires. Research findings inform evidence-

based decision-making and adaptive management strategies for forest fire prevention and management.

7. Policy Support: Formulating and implementing policies, guidelines, and regulations related to forest fire prevention, management, and response. Policy support include provisions for fire bans, restrictions on fire-prone activities, and incentives for sustainable land management practices that reduce fire risk.

8. The funds are sanctioned in the ratio of 60:40 by the Central and State Governments. During 2023-2024 an amount of Rs.496.00 lakhs has been sanctioned and this scheme will be continued during 2024-2025.

By implementing these forest fire prevention and management schemes, Tamil Nadu aims to reduce

the incidence and severity of wildfires, protect valuable forest resources, and safeguard biodiversity, ecosystem services, and livelihoods dependent on forests.

5. Special Institutions

5.1. Arignar Anna Zoological Park (AAZP) Vandalur

The Arignar Anna Zoological Park (AAZP), commonly known as Vandalur Zoo, is one of the largest zoological parks in India and is located in Vandalur, Chennai, Tamil Nadu. It is named after Arignar Anna, a former Chief Minister of Tamil Nadu. It started functioning from the present campus in the year 1985. It is one of the oldest zoos which was established in the year 1855.

1. During 2023 –24, animals were brought to AAZP from Kanpur Zoological Park, Uttar

Pradesh, Jambu Zoo, Jammu, Bannerghatta Biological Park & Sri Chamarajendra Zoological Gardens, Mysore, Karnataka. Surplus animals were donated to Gorakhpur Zoo under an animal exchange programme. Exchange program aims to facilitate the conservation efforts of various species by allowing zoos to exchange surplus animals, thereby promoting genetic diversity and ensuring the welfare of the animals involved.

2. This year, the park has introduced Quick Response (QR) code and WhatsApp ticketing systems that provide visitors with convenient options for purchasing tickets along with digital payment facilities. Live rearing units for freshwater fish, super worms, meal worms, and roaches were established this year. A new operation theatre with modern veterinary care equipment was constructed

in the veterinary hospital. A biometric attendance system is introduced to monitor staff attendance. The park is establishing a Zootorium and a 7D theatre under the TANII scheme.

3. Surplus stock of zoo animals of Indian Porcupine (6 No), Common Peafowl (13 No), Little Egret (34 No), Night Heron (312No), White Ibis (12 No), Painted Stork (122 No), Grey heron (10 no), Black Kite (11 No) and Rat Snake (18 No) were successfully released into suitable Reserve Forest Areas of Tamil Nadu as per the orders of the Principal Chief Conservator of Forests and Chief Wildlife Warden, Tamil Nadu.

4. The 24 X 7 animal live-streaming of 15 zoo animal species received an overwhelming response from people. The Zoo has strengthened its protection by installing

additional CCTV cameras. At present, there are 306 no. of such cameras.

5. AAZP Zoo school runs various educational programmes such as Zoo Outreach for distant schools & colleges, zoo orientation, zoo explorer programme for visiting schools, Zoo Ambassador programme, species ambassador, special themed workshops, Zoo in-house training, Zoo club for volunteering activities, celebration of important forest and wildlife days to spread conservation education and sensitize people regarding the importance of co-existence of human beings and wildlife as well as protecting the environment.
6. Through Corporate Social Responsibility, 10 no of battery-operated vehicles, 3 no. of A/C safari vehicles, construction of a modernized Vedanthangal bird enclosure, renovation and

modernization of a nocturnal animal house, establishment of a solar power plant for up to 70 KW were undertaken. Procurement of gardening equipment and construction of rainwater channel in the additional car parking area under the Corporate Environment Responsibility (CER) fund.

7. The dedicated in-house zoo veterinary team is involved in providing dedicated healthcare to the animals housed in the zoo. Scientific health management is being practiced in coordination with Tamil Nadu Veterinary and Animal Science University (TANUVAS) and the state animal husbandry department, and also by seeking required inputs from experienced veterinarians all over the state whenever situations warrant.

The Arignar Anna Zoological Park in Vandalur is not only a popular tourist attraction but also a

center for wildlife conservation, research, and education in Tamil Nadu. It contributes to the preservation of biodiversity and the promotion of responsible stewardship of natural resources.

5.2 Advanced Institute for Wildlife Conservation (AIWC)

The Advanced Institute for Wildlife Conservation (AIWC), a unique establishment by the Tamil Nadu Government, is dedicated to infusing scientific knowledge into wildlife protection and law enforcement. With an initial outlay of Rs. 14.13 crores, this initiative aims to bolster wildlife conservation efforts in the state. The institute houses three functional centres, namely the Centre for Wildlife Forensic Sciences (CWFS), Centre for Animal Care Sciences (CACS), and Centre for Conservation Education (CCE), with a fourth Centre, 'Centre for Conservation Ecology', soon to be operational. Additionally, an International

Hostel has been constructed at the institute campus, costing Rs. 7.65 crores.

Basic wildlife forensic research and diagnostic operations are conducted in two laboratories of CWFS: i) the Morphometry Laboratory and ii) DNA and Scat DNA laboratories. An advanced DNA Sanger Sequencer instrument for in-house DNA sequencing at CWFS helps identify the species using tissues and wildlife articles. To date, CWFS in AIWC has created a genetic reference database for 61 important animal species of Tamil Nadu, which includes 38 mammals,12 reptiles and 11 bird species. The morphometry laboratory is developing a reference repository of wildlife articles ranging from skulls, long bones, horns, antlers, ivory, hair samples, feathers, hide and skin samples for morphological comparison study and to establish standards that aid in species identification. CWFS has received

119 case samples, and reports have been generated. CWFS has also received 462 research samples for analysis during 2023-24.

CACS conducts clinical pathology analysis. During the period 2023-24, CACS has generated 61 haematology and 47 biochemical reports. CACS has two laboratories: i) Histopathology laboratory and ii) Microbiology laboratory. The histopathology laboratory aids in identifying animal health parameters in tissue samples (Wild and Captive) and caters to emerging challenges in the field of wildlife conservation. The histopathology unit has provided results for the samples obtained from fields. During the period 2023-24, the histopathology unit has received 84 case samples and 732 research samples. The microbiology laboratory is involved in detecting pathogens in animal tissue samples and elephant trunk wash samples using molecular and ELISA techniques.

Haemoprotozoan analysis of wild and captive animals' blood samples is done using microscopic and molecular studies. In 2023-24, the microbiology lab has generated 56 haemoprotozoan study reports and 13 ELISA reports. The laboratory has also initiated to provide entomological results for the samples received from the field. Forensically important insects were identified from the dead animal tissues and 5 entomology reports have been generated. The institute will be restructured to provide appropriate functional autonomy in line with the other advanced Scientific Centres of Excellence in the country, with a renewed focus on building the scientific capacity of various stakeholders with its education and outreach programmes.

The Centre for Conservation Education (CCE) has conducted internship programmes and trained college students of varied disciplines, imparted

training programmes to forest officials, biologists and field veterinarians and outreach programmes to researchers. Four students from different colleges have completed a two-month internship programme in 2023-24. Eighteen training programmes, including a one-month certificate course for Forest Range Officers, have been conducted by CCE. A total of 908 stakeholders, such as Assistant Conservator of Forests, Forest Range Officers, Veterinary Assistant Surgeons, Field Biologists, Foresters, Sub-Inspectors of Police, Deputy Superintendent of Police, Fisheries Inspectors and Forensic Department officials, were trained. Awareness programmes were conducted for school children and 730 participants benefitted. During 2023-24, about 715 stakeholders visited AIWC to acquire knowledge about wildlife conservation.

Twenty research projects funded under the Annual Plan of Operation (APO), Tamil Nadu Innovation Initiatives (TANII) and TBGPCCR schemes were completed in 2023-24. Third 'Annual Research Conference' (ARC) was organized by AIWC on 15th and 16th February 2024. Twenty-nine researchers who got permission from the PCCF & CWLW of Tamil Nadu to conduct research in protected areas presented their findings at the conference. The conference was attended by 150 participants. The AIWC library has been strengthened by adding new books from national and international publishers and subscriptions to science journals and magazines for the benefit of our researchers. Under the capacity building programme, 25 in-house research personnel participated in various workshops, training programmes and online courses such as molecular techniques, bioinformatics, laboratory animal

handling and management, taxidermy workshop and field ornithology & bird migration studies.

A 25 KWP solar power plant has been installed on the roof of the building. The solar power plant fulfils nearly 23% of the institute's total electricity needs. The institute has also installed an automatic weather station. It provides data on 8 weather parameters. The institute has applied for PhD recognition from the University of Madras to encourage researchers and field staff to enroll in PhD programs. The institute has initiated to get National Accreditation Board for testing and calibration Laboratories (NABL) accreditation for its forensic laboratories. Laboratory accreditation is a procedure by which an authoritative body formally recognises technical competence for specific tests/measurements based on third-party assessment and following international standards. The institute has also sent a proposal to the

Government of India to be notified as a 'Government Scientific Expert' under section 293(4) of the Code of Criminal Procedure.

5.3. Gulf of Mannar Biosphere Reserve Trust (GOMBRT):

The Gulf of Mannar Biosphere Reserve is a designated UNESCO Biosphere Reserve located along the southeastern coast of Tamil Nadu and the southwestern coast of Sri Lanka.

The Gulf of Mannar Biosphere Reserve Trust undertakes collaborative efforts with government agencies, NGOs, research institutions, and local communities which are essential for the effective management and conservation of this ecologically significant area. These stakeholders work together to address conservation challenges, promote sustainable development, and ensure the long-term protection of the Gulf of Mannar Biosphere Reserve and its biodiversity.

The comprehensive Action Plan for 5 years at an outlay of Rs. 47.41 crores is submitted to the Government.

6. MISSIONS

6.1. Green Tamil Nadu Mission

The prime objective of the Green Tamil Nadu Mission is to ensure that the Mission becomes a people's movement by soliciting their engagement and by actively involving multiple agencies, organizations (Government / Non - Government), individuals, farmers, local bodies, private institutions/agencies, academia, business houses, school and college students, youth organizations in increasing the forest and tree cover from 23.7% to 33% of its geographical area by the year 2031.

2. During the year 2021-2023 about 3.14 Crore saplings were planted across the districts

covering an extent of about 61,551 ha. Out of which 1.01 crore seedlings were raised and planted at an outlay of Rs.67.27 crore utilizing Green Tamil Nadu Mission funds. The said activity generated green jobs to an extent of 9.26 lakh man-days. During the year 2023-24, 1,900 nurseries were raised in the State as per the District Annual Action Plan duly approved by the District Collectors for planting of about 4 crore seedlings. The State Government sanctioned Rs.75 crores to the Green Tamil Nadu Mission for raising and planting 1.49 crore seedlings during the year 2023-2024. The remaining seedlings have been raised by funding support from the Tamil Nadu Biodiversity Greening Project for Climate Change Response, the National Bank for Agriculture and Rural Development, submission of Agroforestry, National Highway Authority of India, etc. The seedlings have been

planted in about 1 lakh ha of area during the year 2023-2024.

3. The Agroforestry is an integral component of the Green Tamil Nadu Mission wherein 50 lakh seedlings over 27,793.40 ha of farmlands were planted with economically valuable species like Teak, Mahogany, Casuarina, Pungam, Neem and other species to augment the income of the farmers as well as to tap the potential Voluntary Carbon Market in future for earning of the Carbon Credits for the farmer. The uniqueness of the Green Tamil Nadu Mission is the geotagging of all the planted seedlings for ensuring accountability and transparency in the implementation of the Green Tamil Nadu Mission works. Further, a toll-free tree helpline number 1800-599-7634 has also been installed to address the requests and grievances of the public including the farmers which is useful in addressing the grievances of the

farmers about the availability of the seedlings. The Non-Governmental Organizations / Trusts being an important stakeholder in the Green Tamil Nadu Mission have planted and geotagged about 23 lakh seedlings in the State during the year 2023-2024 using their fund which is a great contribution of the NGOs towards the Green Tamil Nadu Mission ensuring that Mission becomes a people's movement in true sense. In addition, the public also planted around 19.55 lakh seedlings and uploaded their seedlings on the web portal of Green Tamil Nadu Mission (www.greentnmission.com). The Department of Agriculture and Farmers Welfare has been given 42 lakh seedlings out of the seedlings raised from the Green Tamil Nadu Mission funds for planting in the farmlands depicting an exemplary case of convergence between the Forest Department and Department of Agriculture and Farmers Welfare for the socio-

economic empowerment of the farmers. 4.72 lakh taller seedlings are being raised for avenue plantation on the National Highways falling within the State of Tamil Nadu, for which the National Highway Authority of India has allotted Rs.53 crores.

4. Rehabilitation of Coastal Habitat through the formation of Bio-shield:

(i) The Mangrove is the littoral forest ecosystem in the intertidal region. They are salt-tolerant plants and rich in biodiversity besides being a storehouse for blue carbon. Climate Change is the biggest threat at the global level and the State of Tamil Nadu being a coastal State is most vulnerable to the adverse impact of Climate Change. The mangroves being nature-based solution can capture and store carbon making this ecosystem extremely valuable in fighting Climate

Change. For the restoration of coastal habitats, Rs.25 crore have been released from the Tamil Nadu Climate Change Mission to the Green Tamil Nadu Mission for the creation of bio shields, including the mangrove plantation for climate change mitigation and adaptation as well as for improving the livelihood opportunities for local communities.

(ii) The scheme is being implemented for three years from 2023-24 to 2025-26 covering 10 districts. The prime objective of the scheme is to mitigate the impact of natural disasters such as cyclones and tsunamis by erecting biological barriers. The major components of the scheme are planting of mangroves (new area), restoration of mangroves (degraded area), raising & planting of Palmyra, Casuarina, Cashew, Restoration of seagrass & coral reef, Monitoring & Evaluation,

Documentation & Preparation of micro-plan and Awareness creation.

(iii) During the year 2023-24, 375 ha of degraded mangrove area and 195 ha of new area have been undertaken for restoration in collaboration with Village Mangrove Councils (VMCs) and other local communities in the 10 coastal districts to ensure that the participation of the local communities in the mangrove conservation and production results in the sustainable management of mangrove ecosystem which is the key to livelihood production and improvement of the local communities. 2.7 lakh casuarina seedlings have been planted over an extent of 90 ha along with Palmyrah and Cashew to create bio-shields in the coastal districts to protect the coastal communities against any climate vulnerabilities.

5. Creation of Maragadha Pooncholai in 100 Villages:

The scheme of "Creation of Maragadha Pooncholai in 100 Villages" was announced by the Honorable Forest Minister during 2022-23 in the Legislative Assembly at a total outlay of Rs. 25 crores. The scheme is being implemented on Government land with the active involvement of local communities in 29 districts of the State. The scheme aims at creation of woodlots by providing livelihood opportunities to the local communities. The components such as planting, provision of irrigation, park benches, visitor sheds and other amenities are being undertaken in each of the villages. It is a unique initiative of the State Government and is likely to become a place for recreation, heat mitigation, source of nutritious fodder, fruits, small timber etc. In totality, the creation of Maragadha Pooncholai shall be vital for

food, wood, water and climate security for the villages in future.

6. Hi-Tech Nursery:

Recognizing that the production of high-quality planting material is a key to the sustenance of the Green Tamil Nadu Mission, 5 hi-tech nurseries are being established in Chennai, Cuddalore, Theni, Perambalur and Krishnagiri districts with a total outlay of Rs.3.75 crores. The Hi-tech nursery shall have components like Chain Link Fencing, Pathway, Borewell, Hardening Chamber, Mist tent Chamber, Vermicompost shed, VAM pit, Seed Storage Facilities, and other Modern Tools and Equipment. The hi-tech nurseries are expected to become a Center of excellence in future for catering to the needs of the farmers and Government Departments in terms of Quality Planting Materials (QPM) and technical knowledge on raising high-quality seedlings which are a pre-

requisite for quality planting in the various degraded landscapes.

6.2. Tamil Nadu Wetlands Mission

The Government of Tamil Nadu is committed to protect its wetlands through a comprehensive conservation and management plan. Accordingly, the Government of Tamil Nadu have issued Government orders vide G.O. (Ms) No.59, Environment, Climate Change & Forests (FR.9) Department, Dated 25.03.2022for implementation of the "Tamil Nadu Wetlands Mission", for a period of five years from 2021-2022 to 2025-2026 for an amount of Rs.115.15 crores for ecological restoration of 100 wetlands with focus on livelihood.

6.2.1 The wetlands are among the most productive life-supporting systems in the world with immense socio-economic, ecological and bio-aesthetic

importance. Wetlands provide diverse tangible and intangible benefits to humankind on a sustainable basis and directly support the livelihoods of millions of people and provide enormous ecosystem goods and services like water purification, groundwater recharge, biodiversity conservation, climate change mitigation, adaptation, etc. Wetlands areas affected by climate crises like sea level rise are expected to adversely affect the coastal wetlands; some of them might disappear; several others would experience changes to their morphology, water balance, salinity levels and biodiversity. The mudflats and coral reefs could be considerably affected by sea level rise. The variation in precipitation patterns would have an impact on wetland ecosystems and their wise use. Therefore, there is a need to plan for the future considering climate change and its impact on wetlands. Accordingly, the following activities shall be

undertaken based on the G.O. (Ms.) No.59 Environment, Climate Change & Forests (FR.9) Department under the Tamil Nadu Wetlands Mission: -

i. Identify and map 100 wetlands in the State of Tamil Nadu in 5 years.
ii. Prepare Integrated Management Plans as per the Wetlands (Conservation and Management) Rules, 2017.
iii. Ecosystem based eco-restoration of wetlands following evidence-based methodologies.
iv. Awareness generation on wetland conservation through public awareness campaigns.
v. Promoting research, inventory and monitoring of wetland resources for effective management.

vi. Promoting and supporting sustainable livelihood options to ensure productivity while protecting wetland resources.

vii. Promoting stakeholders' participation in the effective management of wetlands.

viii. Conserving wetlands biodiversity through community-based approaches.

6.2.2 Identification, Mapping and Digital Inventories of 100 wetlands based on notification under Wetlands (Conservation and Management) Rules 2017.

Identification of 100 wetlands has been done under the "Tamil Nadu Wetlands Mission" and mapping of 100 Wetlands shall be done with the

help of Drone LIDAR & RGB technology through "Tamil Nadu Unmanned Aerial Vehicles Corporation" to ensure that the wetlands characterization is undertaken for each wetland and the wetlands boundaries are duly marked on the ground with the help of DGPS. More accurate features of the wetlands shall be instrumental in preventing the degradation of the wetlands in future, which is one of the key deliverables of the "Tamil Nadu Wetlands Mission". The Drone LIDAR & RGB based technology for mapping the wetlands shall have an added advantage over the orbital satellite images in producing high spatial resolution imagery with error **<**5 cm for delineating even the smaller wetlands with great precision for prevention of wetlands degradation from the anthropogenic pressures.

Ecological restoration of wetlands as per Wetlands (Conservation and Management) Rules, 2017

The Wetlands (Conservation and Management) Rules, 2017, enacted by the Ministry of Environment, Forest and Climate Change (MoEFCC), provide a legal framework for the conservation and management of wetlands in India, including guidelines for ecological restoration. While the rules are applicable nationwide, they serve as a framework that states can adapt and implement according to their specific needs and context. Here's how the rules address ecological restoration of wetlands:

1. **Identification and Inventory**: The rules emphasize the importance of conducting a comprehensive inventory of wetlands to identify their extent, ecological

characteristics, and condition. This inventory forms the basis for prioritizing wetlands for conservation and restoration efforts.

2. **Ecological Characterization**: Wetlands are classified into various categories based on their ecological characteristics, such as marine, coastal, inland, and human-made wetlands. Understanding the ecological functions and values of different wetland types is essential for planning and implementing restoration activities.

3. **Wetland Conservation and Management Plans**: The rules mandate the preparation of wetland conservation and management plans by state governments. These plans include measures for the ecological restoration of degraded wetlands, such as

habitat enhancement, water quality improvement, and invasive species control.

4. **Regulation of Activities**: The rules prohibit certain activities in wetlands that may cause ecological degradation, such as reclamation, drainage, construction, and discharge of pollutants. By regulating such activities, the rules aim to prevent further degradation of wetland ecosystems and facilitate their restoration.

5. **Pollution Control**: The rules require measures to control pollution in wetlands, including the establishment of buffer zones and the regulation of discharges from industries, agriculture, and urban areas. Pollution control measures are essential for restoring water quality and ecological health in degraded wetlands.

6. **Community Participation**: The rules emphasize the involvement of local communities and stakeholders in wetland conservation and restoration efforts. Community participation ensures that restoration activities are culturally appropriate, socially acceptable, and sustainable in the long term.

7. **Monitoring and Evaluation**: The rules require regular monitoring and evaluation of wetland conservation and restoration activities to assess their effectiveness and identify areas for improvement. Monitoring helps track changes in wetland condition over time and ensures adaptive management of restoration efforts.

8. **Research and Innovation**: The rules encourage research and innovation in

wetland conservation and restoration techniques. By promoting scientific research and technological innovation, the rules support the development of effective strategies for restoring degraded wetlands and enhancing their resilience to environmental change.

The Wetlands (Conservation and Management) Rules, 2017, provide a comprehensive framework for the ecological restoration of wetlands in India, including guidelines for identifying, conserving, and restoring these vital ecosystems.

Ecological restoration of 100 wetlands as per Wetlands (Conservation and Management) Rules, 2017, with focus on livelihood option shall be another prime objective of the "Tamil Nadu Wetlands Mission". The ecological restoration of

the identified wetlands shall be carried out scrupulously following the Wetlands (Conservation and Management) Rules, 2017, focusing on the activities like selective dredging, bathymetric survey, strengthening of the bunds, removal of invasive species, inflow and outflow desilting approved by the District Level Wetland Management Committee.

Recognizing that Ennore Creek had a potential for fishing activities which has drastically reduced in the past two decades due to rapid industrialization of the area and due to invasive species adversely impacting the livelihood of the local fisher folk. The ecological restoration works of the part of the Ennore creek shall be undertaken in consultation with the Water Resources Department (WRD), with focus on the livelihood of local fisherfolk under the "Tamil Nadu Wetlands Mission" for the welfare of nearly 9,000 fisherfolk families.

After the preparation of the bathymetric survey and Detailed Project Report (DPR) by the Water Resources Department, the ecological restoration shall be undertaken by the Water Resources Department under the "Tamil Nadu Wetlands Mission" by selective dredging of part of the Ennore Creek.

Under the Tamil Nadu Wetlands Mission 15 Wetlands of international significance have been declared as Ramsar sites after 20 years making Tamil Nadu a leading State in the Country with the highest number of 16 Ramsar sites out of a total of 82 Ramsar sites in the Country. The details of 16 Ramsar sites are as follows:-

Sl. No.	Name of Ramsar site	Name of District	Area (In ha)
1	Pallikaranai Marsh Reserve Forest	Chennai	1,247.54
2	Karikili Bird Sanctuary	Chengalpattu	58.44

Sl. No.	Name of Ramsar site	Name of District	Area (In ha)
3	Vedanthangal Bird Sanctuary	Chengalpattu	40.35
4	Pichavaram Mangrove	Cuddalore	1,478.64
5	Vellode Bird Sanctuary	Erode	77.185
6	Suchindram Theroor Wetland Complex	Kanyakumari	94.23
7	Vembanur Wetland Complex	Kanyakumari	19.75
8	Chitrangudi Bird Sanctuary	Ramanathapuram	260.47
9	Gulf of Mannar Marine Biosphere Reserve	Ramanathapuram	52,671.88
10	Kanjirankulam Bird Sanctuary	Ramanathapuram	96.89
11	Koonthankulam Bird Sanctuary	Tirunelveli	72.04
12	Udhayamarthandapuram Bird Sanctuary	Thiruvarur	43.77
13	Vaduvur Bird Sanctuary	Thiruvarur	112.64
14	Point Calimere Wildlife and Bird Sanctuary	Nagapattinam and Thiruvarur	38,500.0
15	Longwood Shola	The Nilgiris	116.007
16	Karaivetti Bird Sanctuary	Ariyalur	453.7
		Total Area	**95,343.532**

Out of 16 Ramsar sites, the Integrated Management Plan for 12 Ramsar sites in the State of Tamil Nadu shall be prepared by Salim Ali Centre for Ornithology and Natural History (SACON), Coimbatore for an amount of Rs.71.28 lakh, since the newly designated Ramsar sites have to be ecologically restored after taking into consideration ecological, hydrological, edaphic and biodiversity factors to improve the ecosystem services and livelihood options of the local communities.

25 wetlands ecosystem health cards (brief documents) for estimation of detailed ecological, edaphic & hydrological characteristics along with sediment analysis for estimation of carbon, methane, N_2O profile, etc., shall be prepared by the Centre for Environment Studies, Anna University, Chennai for an amount of Rs.25.00 lakh. Similarly, the wetland ecosystem health cards and brief

documents shall be prepared for the remaining 75 wetlands for its ecological restoration in future.

Restoration of Degraded coastal wetlands with focus on seagrass

Seagrasses are one of the important and highly productive ecosystems and provide shelter and food for near-shore fisheries, marine reptiles and mammals. Seagrasses sequester blue carbon and act as important carbon sinks. Seagrass captures carbon up to 35 times faster than tropical rainforests. Even though it covers 0.2% of the seafloor, it absorbs 10% of the ocean's carbon each year, making it an incredible tool in the fight against climate change. A recent study quantified the blue carbon stock of seagrass meadows in the Gulf of Mannar to be 0.001782 Tg C (for 5170.66 ha of seagrass at 344,720 gC ha^{-1}), and that of Palk

Bay to be 0.043996 Tg C (for 13,323 ha of seagrass at 3,885,615 gC ha^{-1}). The estimated value of blue carbon stored in seagrass meadows of Gulf of Mannar is valued at USD 17,820 and that of Palk Bay at USD 43,99,682 (at a fixed price of USD 10 for blue carbon, Kaladharan et al., 2020). Restoration of degraded coastal wetlands focusing on seagrass meadows in the Gulf of Mannar shall be undertaken by Suganthi Devadason Marine Research Institute (SDMRI) for an amount of Rs.95.54 lakh for improving the climate change mitigation options by way of sequestration of blue carbon in the marine ecosystem as well as for the adaptation of the local communities.

Ecological restoration of Otteri Lake

The Otteri Lake, Aringar Anna Zoological Park, Vandalur being the only water body inside the Zoo premises caters to the drinking water

requirements for the housed animals and the adjoining local communities. The ecological restoration of Otteri Lake shall be undertaken to improve the capacity of the lake for the benefit of local biodiversity, improve the habitat for facilitating the bird's perch, and improve water quality through silt/sediment-free water storage for use by the surrounding local communities. An amount of Rs.1.50 crore has been transferred to the Zoological Authority of Tamil Nadu (ZAT) for the above purpose.

Wetland Mithras (Iranilangalin Nanbargal) in Wetlands of India portal.

The "Tamil Nadu Wetlands Mission" envisages to make the wetlands conservation and management a people's movement. Accordingly, wetland mitras (Iranilangalin Nanbargal) shall be

enrolled in each district, so that the local communities own the wetlands and facilitate the efforts of the Government in protecting these unique productive ecosystems for future generations. So far 166 wetland mitras have been registered in the Wetlands of India Portal and more than 250 wetland mitras shall be enrolled in the future to facilitate people's participation in wetlands protection and conservation in the State.

7. Action Plan for the year 2023-24.

7.1. Tamil Nadu Coastal Restoration Mission

Due to the increasing vagaries of climate change and pressure caused by the burgeoning population, the coastal ecosystem and the livelihood of the coastal population are likely to be severely affected in the near future. The Government will implement the "Tamil Nadu Coastal Restoration Mission" to prevent sea erosion, reduce marine pollution and conserve

marine biodiversity with World Bank assistance at an estimated cost of Rs.1,675 crore in the next 5 years.

7.2 Thanthai Periyar Wildlife Sanctuary

During the Budget Speech for the year 2023-24, the Government announced a new wildlife sanctuary "Thanthai Periyar Wildlife Sanctuary" with an extent of 80,567 ha in the forest areas of Erode as the 18th wildlife Sanctuary in the State.

7.3. International Bird Centre at Marakkanam

Tamil Nadu is located on the Central Asian Flyway and hosts a large number of migratory birds every year. To promote the conservation of birds, encourage research in the field of ornithology and create awareness about the role of birds in nature, the Government has announced setting up an

"International Bird Centre" at Marakkanam, Villipuram at an estimated cost of Rs. 25.00 crores.

8. Forest Policy and Legal Framework

Forest policy and the legal framework surrounding forests are crucial for the management, conservation, and sustainable use of forest resources.

Tamil Nadu has a well-laid down policy and legal framework for the management of forests and wildlife. The Policy framework has been designed to ensure proper implementation of schemes and programmes in the field.

Forest Policy: Forest policy outlines the government's objectives, principles, and strategies for managing forests and forest resources sustainably. It typically addresses issues such as conservation, biodiversity, ecosystem services,

community rights, forest-based industries, and land use planning. Forest policies may be guided by principles of sustainable forest management, conservation of biodiversity, equitable benefit-sharing, and community participation. They often involve collaboration among multiple stakeholders, including government agencies, indigenous and local communities, non-governmental organizations (NGOs), and the private sector.

Forest Laws: Forest laws are legal instruments enacted by governments to regulate and govern the use, protection, and management of forests and forest resources. These laws establish the legal framework for forest management, conservation, and utilization. Forest laws may cover a wide range of issues, including forest tenure, land rights, forest governance, timber harvesting, wildlife conservation, protected areas, environmental impact assessment, and

forest-related crimes such as illegal logging and poaching.

Key Components of Forest Laws:

a) **Forest Conservation and Protection**: Laws aimed at forest conservation and protection establish measures to prevent deforestation, degradation, and loss of forest biodiversity. They may include provisions for establishing protected areas, regulating land use change, and controlling activities that pose threats to forest ecosystems.

b) **Forest Management and Utilization**: Laws related to forest management and utilization govern activities such as timber harvesting, non-timber forest products (NTFPs) extraction, forest restoration, and agroforestry. They may establish rules and regulations for sustainable forest

management practices, forest certification, and forest-based industries.

c) **Community Participation and Rights**: Forest laws increasingly recognize the rights of indigenous and local communities to participate in decision-making processes and benefit from forest resources. They may include provisions for community-based forest management, participatory forest management, and revenue-sharing arrangements.

d) **Enforcement and Compliance**: Forest laws also address enforcement mechanisms, penalties, and legal remedies for violations of forest regulations. They establish institutions responsible for enforcing forest laws, investigating forest-related crimes, and prosecuting offenders.

e) **International Agreements and Conventions**: Many countries are signatories to international agreements and conventions related to forests and biodiversity, such as the United Nations Framework Convention on Climate Change (UNFCCC), the Convention on Biological Diversity (CBD), and the United Nations Declaration on the Rights of Indigenous Peoples (UNDRIP). These agreements influence national forest policies and legal frameworks and promote international cooperation on forest conservation and sustainable management.

Forest policy and the legal framework surrounding forests play a critical role in promoting the sustainable management and conservation of forest resources, ensuring the well-being of forest-dependent communities, and protecting

biodiversity and ecosystem services for future generations.

8.1 National Forest Policy, 1988

The National Forest Policy of 1988 is a policy framework established by the Government of India to guide the management, conservation, and sustainable development of forests across the country. While the National Forest Policy is a central policy, its principles and objectives are implemented by state governments. Here's how the National Forest Policy of 1988 is relevant to forest management in Tamil Nadu:

1. **Conservation and Ecological Stability**: The National Forest Policy emphasizes the conservation of forests for maintaining ecological balance, protecting biodiversity, and mitigating environmental degradation. In Tamil Nadu, forest conservation efforts

align with these objectives, aiming to preserve the state's diverse forest ecosystems and ensure their long-term ecological stability.

2. **Meeting Socio-Economic Needs**: The policy recognizes the socio-economic significance of forests for rural communities, including livelihood support, fuelwood, fodder, and non-timber forest products. In Tamil Nadu, efforts are made to balance conservation goals with meeting the socio-economic needs of forest-dependent communities through sustainable forest management practices and community participation.

3. **Afforestation and Reforestation**: The National Forest Policy emphasizes the importance of afforestation and reforestation

to increase forest cover and restore degraded lands. In Tamil Nadu, afforestation and reforestation programs are implemented to enhance forest cover, improve watershed management, and combat desertification and soil erosion.

4. **Joint Forest Management**: The policy promotes the involvement of local communities and stakeholders in forest management through Joint Forest Management (JFM) and participatory approaches. In Tamil Nadu, initiatives such as Community Forest Management (CFM) and Joint Forest Management Committees (JFMCs) engage local communities in forest protection, afforestation, and sustainable resource management.

5. **Biodiversity Conservation**: The National Forest Policy recognizes the importance of conserving biodiversity and protecting wildlife habitats within forest areas. In Tamil Nadu, efforts are made to establish and manage protected areas, such as wildlife sanctuaries and national parks, to conserve biodiversity and provide habitat for endangered species.

6. **Research and Training**: The policy emphasizes the need for research, training, and capacity-building in forestry science and technology. In Tamil Nadu, research institutions, forest departments, and academic organizations collaborate to conduct research, training programs, and knowledge dissemination activities to improve forest management practices and build the capacity of forest personnel.

While the National Forest Policy of 1988 provides a broad framework for forest management, each state develops its specific policies, programs, and initiatives tailored to its unique ecological, socio-economic, and cultural context. These state-level efforts complement the objectives of the national policy and contribute to the overall conservation and sustainable management of forests in India.

8.2 State Forest Policy, 2018

Tamil Nadu has its own State Forest Policy, which outlines the principles, objectives, and strategies for the management, conservation, and sustainable use of forest resources within the state.

1. Conservation and Biodiversity: The Tamil Nadu State Forest Policy emphasizes the conservation of forests and biodiversity, including protection of endangered species, preservation of ecologically sensitive areas, and restoration of degraded ecosystems.

2. Sustainable Forest Management: The policy is to promote sustainable forest management practices that balance environmental, social, and economic objectives. These include measures to prevent deforestation, promote afforestation and reforestation, and improve forest productivity.

3. Community Participation: Recognizing the role of local communities in forest management, the policy encourages community participation in forest protection, conservation, and livelihood enhancement activities. These involve the establishment of Joint Forest Management Committees (JFMCs) or other community-based forest management initiatives.

4. Livelihood Support: The policy may address the socio-economic needs of forest-dependent communities by promoting sustainable livelihood opportunities such as non-timber forest products (NTFPs), eco-tourism, and agroforestry.

5. Forest Protection and Law Enforcement: Ensuring the enforcement of forest laws and regulations to combat illegal logging, poaching, encroachment, and other threats to forest ecosystems is a key component of the policy.

6. Research and Capacity Building: The policy supports research, training, and capacity-building initiatives aimed at improving forest management practices, enhancing the skills of forest personnel, and promoting scientific research in forestry and ecology.

7. Climate Change Mitigation and Adaptation: Given the importance of forests in climate change mitigation and adaptation, the policy includes measures to enhance the resilience of forest ecosystems to climate change impacts and promote carbon sequestration through sustainable forest management practices.

8. Collaboration and Partnerships: The policy emphasizes collaboration and partnerships with various stakeholders, including government agencies, non-governmental organizations (NGOs), research institutions, and local communities, to achieve its objectives.

Tamil Nadu's State Forest Policy is guided by principles of sustainable development, biodiversity conservation, social equity, and participatory governance, in line with national forest policies and international commitments.

8.3 Acts and Rules

Tamil Nadu has several laws and regulations governing the management, conservation, and utilization of forests and forest resources. These laws are aimed at protecting forest ecosystems, biodiversity, and wildlife, as well as regulating activities such as timber harvesting, non-timber forest products collection, and land use change

within forest areas. Here are some key forest acts and rules applicable in Tamil Nadu:

1. **Tamil Nadu Forest Act, 1882:** This is one of the primary legislations governing forests in Tamil Nadu. It provides for the regulation of forest lands, the management of forests, the protection of forests from illegal activities, and the prevention of forest fires. The act empowers forest authorities to enforce regulations related to forest conservation and management.

2. **Wildlife Protection Act, 1972:** This act provides for the protection of wildlife and their habitats, the establishment of wildlife sanctuaries and national parks, and the regulation of hunting and trade in wildlife species. It prohibits activities that are harmful to wildlife, such as hunting, poaching, and trafficking of protected species.

3. **Forest Conservation Act, 1980:** This central legislation aims to conserve forests by regulating

the diversion of forest land for non-forest purposes. It requires prior approval from the central government for any proposal to use forest land for activities such as mining, industry, or infrastructure development.

4. **Tamil Nadu Forest Rules:** These rules are framed under the Tamil Nadu Forest Act, 1882, and provide detailed regulations and procedures for the implementation of the act. They cover various aspects of forest management, including timber extraction, grazing, protection of forests, prevention of forest fires, and conservation of wildlife.

5. **Tamil Nadu Hill Stations (Preservation of Trees) Act, 1955:** This act aims to preserve trees in hill stations and prevent their indiscriminate felling for commercial purposes. It regulates the cutting and transportation of trees and requires

permits for tree-felling activities in designated areas.

6. **Tamil Nadu Minor Forest Produce (Regulation of Trade) Act, 1982:** This act regulates the trade and collection of minor forest produce such as bamboo, tendu leaves, gums, and resins. It aims to ensure fair prices for forest produce and prevent unsustainable exploitation of forest resources.

7. **Tamil Nadu Biodiversity Rules, 2017:** These rules are framed under the Biological Diversity Act, 2002, and govern the conservation, sustainable use, and equitable sharing of benefits arising from the use of biological resources in Tamil Nadu. They provide for the establishment of biodiversity management committees and biodiversity registers at the local level.

These are some of the key forest acts and rules applicable in Tamil Nadu. They form the legal framework for forest management, conservation, and utilization in the state, and are enforced by the Tamil Nadu Forest Department and other relevant authorities. It's essential for stakeholders, including forest officials, local communities, and businesses, to comply with these laws to ensure the sustainable management of forest resources and the protection of forest ecosystems.

8.4 Sustainable Development Goals

Tamil Nadu aligns its development objectives with the United Nations Sustainable Development Goals (SDGs). The SDGs provide a comprehensive framework for addressing global challenges and promoting sustainable development in various sectors, including social, economic, and environmental dimensions. While the SDGs are universal, each state or region may interpret and

prioritize them based on their specific context and development needs.

1. **Departments work for SDGs**

Two SDG units (i.e.) State Level / District Level have been formed in the Forest Department, for continuous monitoring and updation of data in the SDG Dashboard. The SDG units are functioning in close coordination with the SDG cell under the Planning and Development Department. The goals linked to the Forest Department fall under the working Groups 7 (Goals 13, 14, and 15) and 6 (Goal 12). Goal No.14 (Life below water) and Goal No.15 (Life on Land) have targets that connect directly to the forests and wildlife. Goal 6 (Clean water), Goal No 12 (Responsible Consumption and Production) and Goal 13 (Climate Action) have domains that overlap with the forest and wildlife sectors indirectly.

Various schemes are being implemented for the vulnerable sections in the State. Farmers are benefitted from schemes like supply of free seedlings.

The tribal scheme is also operated to benefit local people adjoining the Forest area. Further, free of cost assistive devices are being provided to disabled persons, along with barrier-free environments in all public buildings including educational institutions.

8.5 National Working Plan Code

As per National Working Plan Code-2023, a Working Plan is a management document of a Forest division, which largely deals with the present stage of forests and outcomes of the past management and proposal of future management on a sustainable basis. It is generally written for 10 years. Working Plan is a tool for scientific

management of forests, and it is extremely useful in evaluating the status of forest resources.

All forests are to be sustainably managed under the prescriptions of the Working Plan. The National Forest Policy, 1988 clearly states, "No forest should be permitted to be worked without an approved Working Plan by the competent Authority". The Ministry of Environment, Forests & Climate Change, Government of India is the Competent Authority for approving Working Plans.

All the Forest and Wildlife divisions in Tamil Nadu are managed scientifically through prescriptions of Working Plans and Management Plans.

Present Status of Forest Division Working Plans in Tamilnadu.

S.No	Total number of Forest Divisions in Tamil Nadu	No of Forest Divisions with approved Working Plans	No of Forest Divisions for which Working Plans to be formulated / approved
1	32	25	7

9. Statutory Bodies

9.1 Tamil Nadu State Biodiversity Board

Biodiversity refers to variability among living organisms which includes from the smallest of creatures such as microbes and insects to the largest of them such as trees and mammals. Biodiversity also provides with abundance of resources that ensure food security and are utilized for livelihood generation of local communities. However, biodiversity faces all-round threats due to anthropogenic pressure, climate change, and unbalanced exploitation. The Convention on

Biological Diversity (CBD) addressed this issue globally at the UNCED conference in Rio in 1992 and evolved triple objectives- conservation of biological diversity, sustainable use of its components, and fair and equitable sharing of the benefits arising out of the utilization of genetic resources. India became a party to the Convention in 1994 and enacted the Biological Diversity Act (BDA), 2002, and the rules in 2004, which provide a legal framework for institutionalizing community led, sustainable biodiversity conservation.

Biodiversity Management Committees (BMCs), are to be constituted in every local body under Section 41 of the BDA, 2002. BMCs are expected to facilitate community-driven biodiversity conservation and management. In Tamil Nadu, so far 13,608 BMCs have been constituted and are continuously assessed for identifying the impacts made through the

implementation of BDA 2002. Based on the findings, strategic actions have been planned by the Tamil Nadu Biodiversity Board (TNBB) to provide handholding support in coordination with multiple stakeholders and experts, particularly for training and capacity building programs of the BMCs. Training of BMCs including online training has been conducted at district, block, and village panchayat levels in 29 Districts. The Global Environment Facility (GEF) supported project, "Strengthening Institutional Capacities for Securing Biodiversity Conservation Commitments" in collaboration with the Tamil Nadu Biodiversity Board is upcoming in the Sathyamangalam area where the primary objective of the project is to mainstream biodiversity conservation and its sustainable use and management into village level self-governance, institutional planning and budgeting systems.

As per Rule 20(6) of the Biological Diversity Rules, 2004, 13,604 peoples' biodiversity registers (PBRs) have been prepared and some of them are being updated and ground validated. TNBB is engaging local domain experts to assist the BMCs in improving bio-resource conservation, sustainable use, cultivation of medicinal plants, and other income generating crops. Market linkages are being steamlined. TNBB has prepared a project, "Tamil Nadu Biodiversity Board: Strengthening and Restructuring Project 2022-25" with an outlay of Rs 8.8 crores for three years and is awaiting approval. In furtherance, a revised proposal with prioritized budget with an outlay of Rs.3,70,74,000 focusing on activities pertinent to urgent actions is being proposed. The Board also received from National Biodiversity Authority (NBA) an amount of Rs. 72 lakhs as start-up funds for 90 Model Block Level BMCs and an amount of

Rs 25 lakhs under preparation of Peoples Biodiversity Registers (PBRs) in Tamil Nadu under the Special Component plan for SC.

In exercise of the powers conferred under Section 37(1) of the Biological Diversity Act, 2002, the State Government in consultation with the local bodies may notify areas of biodiversity importance (wild or cultivated/domesticated) as "Biodiversity Heritage Sites"(BHS).

To strengthen biodiversity conservation and protect the Arittapatti Village from rapid loss of biodiversity the Tamil Nadu Government on the recommendation of Tamil Nadu Biodiversity Board declared Arittapatti Village as Arittapatti Biodiversity Heritage Site. It is the first BHS notified by the Government in Tamil Nadu State. The Board under Section 37 of the Biodiversity Act, 2002, together with Tamil Nadu Biological Diversity Rules, 2017 is considering sacred groves which are

noteworthy for their significance, distinctiveness and biodiversity, to be notified as Biodiversity Heritage Sites.

The following proposals are under consideration of the Government for declaration of Biodiversity Heritage Sites

Sendirakillai Biodiversity Heritage Site – Cuddalore District.

Idayappatti Biodiversity Heritage Site – Madurai District

Kasampatty Sacred Grove Biodiversity Heritage Site – Dindigul District

Kariyanapalli Reserve Forest Block II Biodiversity Heritage Site – Krishnagiri District.

In addition to the above, a proposal is under consideration to declare 175 sites of sacred groves in 25 different districts of Tamil Nadu as the Biodiversity Heritage Sites. Considering

sacred groves as biodiversity heritage sites could be a matter of pride and honour for the entire State. The state would be a pioneer in the entire country for such noble action.

Heritage tree preservation may be a source of pride and respect for the state of Tamil Nadu as well as the City of Chennai. There are a lot of heritage trees in Chennai, which are important symbols of Tamil Nadu's history, culture, and environment that define the state's identity both nationally and internationally. Heritage tree nomination is an excellent approach to support biodiversity conservation and related education while also paying tribute to the city's rich cultural legacy. Chennai's heritage trees are unique because of their size, longevity, and rarity. They also act as an important gene pool depository. In addition, their preservation serves as a bridge across generations.

Hence, in order to preserve heritage trees a proposal is under consideration to declare 21 heritage trees in the first phase.

TNBB has also realised amount of Rs 1,89,55,663 as Access and Benefit sharing under sections 3,4,6,7 and 24 of the BDA,2002. Out of this amount, Rs.53,42,104 has been disbursed to the beneficiaries.

The Government is firmly committed to steer the State towards achieving the objectives of BDA 2002 and to overcome the present challenges in its implementation by focusing on improving capacities in all areas and necessitate effective implementation of the mandate. Accordingly, the in-house project titled 'Tamil Nadu Biodiversity Board: Strengthening and Restructuring Project 2022-25' – Prioritized Budget 2023 will be implemented by Tamil Nadu Biodiversity Board.

9.2 State Board for Wildlife

Tamil Nadu State Wildlife Board has been constituted under Sec 6 of the Wildlife (Protection) Act, 1972. The Board is headed by the Honourable Chief Minister of Tamil Nadu. The Board comprises 3 members from the Legislative Assembly, 14 official members and 13 non-official members. The Board advises the State Government in formulation of policies and guidelines for the protection and conservation of wildlife and specified plants. It also advises the Government on various measures for protection and conservation of wildlife.

9.3 Zoo Authority of Tamil Nadu

The Zoo Authority of Tamil Nadu (ZAT) is the authority responsible for overseeing the management and regulation of zoos in the state of Tamil Nadu. It operates under the provisions of the Wildlife (Protection) Act, 1972, and works in coordination with the Central Zoo Authority (CZA)

of India, which is the apex regulatory body for zoos in the country. Key functions and responsibilities of the Zoo Authority of Tamil Nadu are:

1. **Regulation and Licensing**: ZAT is responsible for regulating and licensing zoos operating within Tamil Nadu. It ensures that zoos comply with statutory requirements, standards, and guidelines established by the Central Zoo Authority for housing, care, and management of animals in captivity.

2. **Inspections and Monitoring**: The authority conducts regular inspections and monitoring of zoos to assess their compliance with animal welfare standards, safety regulations, and hygiene protocols. It evaluates the conditions of zoo facilities, enclosures, veterinary care, and visitor

amenities to ensure the well-being of animals and the safety of visitors.

3. **Development and Modernization**: ZAT promotes the development and modernization of zoos in Tamil Nadu to enhance their infrastructure, facilities, and visitor experience. It provides financial assistance, technical guidance, and capacity-building support to zoos for infrastructure upgrades, exhibit redesign, and adoption of best practices in animal management.

4. **Animal Exchange and Breeding Programs**: The authority facilitates the exchange of animals between zoos for breeding and conservation purposes, in coordination with national and international breeding programs. It may approve animal

transfers, loan agreements, and cooperative breeding initiatives to maintain genetically viable populations and prevent inbreeding in captive populations.

5. **Conservation Education and Awareness**: ZAT promotes conservation education and public awareness about wildlife, biodiversity conservation, and the role of zoos in wildlife conservation efforts. It encourages zoos to develop educational programs, interpretive displays, and outreach activities to engage visitors and foster appreciation for wildlife conservation.

6. **Emergency Response and Disaster Management**: The authority coordinates emergency response and disaster management efforts in zoos during natural disasters, disease outbreaks, or other

emergencies. It provides technical support, resources, and guidance to zoos for emergency preparedness, evacuation procedures, and crisis management.

7. **Legal Compliance and Enforcement**: ZAT ensures that zoos comply with relevant laws, rules, and regulations governing wildlife protection, animal welfare, and zoo management. It takes enforcement actions, issue penalties, or revoke licenses of zoos found to be violating statutory requirements or operating standards.

8. **Research and Conservation Projects**: The authority supports research initiatives and conservation projects conducted by zoos in collaboration with scientific institutions, conservation organizations, and government agencies. It encourages zoos to

participate in ex-situ conservation programs, species recovery projects, and conservation breeding efforts for threatened species.

The Zoo Authority of Tamil Nadu plays a crucial role in promoting the welfare of captive animals, conservation education, and the sustainable management of zoos in the state. Through its regulatory functions, capacity-building initiatives, and conservation partnerships, ZAT contributes to the advancement of wildlife conservation and public awareness in Tamil Nadu.

9.4. Tamil Nadu State Wetland Authority (TNSWA)

Tamil Nadu State Wetland Authority (TN-SWA) is responsible for the conservation, management, and regulation of wetlands within the state of Tamil Nadu. The authority operates

under the Wetlands (Conservation and Management) Rules, 2017, which were enacted to protect and manage wetlands across India. Key functions and responsibilities of the Tamil Nadu State Wetland Authority are:

1. **Identification and Inventory**: TNSWA identifies and delineates wetlands within Tamil Nadu through comprehensive mapping and inventory process. This includes cataloging different types of wetlands such as lakes, rivers, marshes, mangroves, and estuaries.

2. **Wetland Conservation and Protection**: The authority is tasked with the conservation and protection of wetland ecosystems and their associated biodiversity. It formulates strategies and action plans for the sustainable management of wetlands,

addressing issues such as habitat degradation, pollution, encroachment, and invasive species.

3. **Regulatory Framework**: TNSWA enforces the Wetlands (Conservation and Management) Rules, 2017, and other relevant regulations to regulate activities within wetlands. It ensures compliance with laws governing wetland conservation, including restrictions on land use change, construction activities, and discharge of pollutants.

4. **Wetland Restoration and Rehabilitation**: The authority initiates and facilitates wetland restoration and rehabilitation projects to improve the ecological health and functioning of degraded wetland areas. This may involve measures such as habitat restoration,

invasive species control, water quality improvement, and hydrological restoration.

5. **Community Participation and Stakeholder Engagement**: TNSWA promotes community participation and stakeholder engagement in wetland conservation and management efforts. It collaborates with local communities, government agencies, non-governmental organizations (NGOs), research institutions, and other stakeholders to develop and implement conservation initiatives.

6. **Research and Monitoring**: The authority conducts research, monitoring, and scientific studies to assess the status and trends of wetland ecosystems in Tamil Nadu. It collects data on wetland biodiversity, hydrology, water quality, and

ecosystem services for better decision-making and conservation planning.

7. **Public Awareness and Education**: TNSWA raises public awareness about the importance of wetlands, their ecological functions, and the need for their conservation. It conducts educational programs, workshops, and outreach activities to engage stakeholders and promote stewardship of wetland resources.

8. **Policy Advocacy and Capacity Building**: The authority advocates for policies and measures that support wetland conservation and sustainable management at the state and national levels. It also conducts capacity-building initiatives, training programs, and workshops to build the capacity of government officials,

professionals, and stakeholders involved in wetland management.

Tamil Nadu State Wetland Authority plays a crucial role in safeguarding wetland ecosystems, preserving biodiversity, and ensuring the sustainable use of wetland resources in the state. Through its regulatory functions, conservation initiatives, and stakeholder engagement efforts, TNSWA contributes to the protection and management of wetlands for current and future generations.

9.5. Conservation Authority of Pallikaranai marshland

The Pallikaranai marshland, located in Chennai, Tamil Nadu, is one of the few remaining natural wetlands in the region and is of significant ecological importance due to its rich biodiversity and role in flood mitigation and groundwater

recharge. The management and conservation efforts for the marshland are coordinated by multiple agencies and bodies at the state and local levels. The authority has been formed for to ensure coordination with other departments. It functions as an apex technical advisory body for the conservation of marsh land.

9.6. Compensatory Afforestation Fund Management and Planning Authority (CAMPA)

The Tamil Nadu Compensatory Afforestation Fund Management and Planning Authority (TNCAMPA) is the designated body responsible for the management, utilization, and monitoring of funds collected under the Compensatory Afforestation Fund Act, 2016 and its associated rules and guidelines. The CAF Act aims to provide for the utilization of funds received from users of forest land for compensatory afforestation,

additional compensatory afforestation, penal compensatory afforestation, net present value (NPV) of forest land, and other purposes connected with the management and administration of such funds.

TN CAMPA provides an integrated framework for the promotion of compensatory afforestation, using the Net present value of the diverted forest land, for the compensation of the forest land diverted for non-forestry purposes. Its primary mission is to regenerate forests and strengthen institutions, including capacity building for forest officials at all levels, with a focus on training at the range level.

The authority is meant for implementing and monitoring various activities funded by the TN CAMPA. The Governing Body of the Authority is chaired by the Hon'ble Chief Minister. This

Authority serves as an institutional body to mitigate the impact of diverting forest land for non-forest purposes as well as to ensure that funds are released and used in a timely, efficient, and transparent manner.

Tamil Nadu Compensatory Afforestation Fund Management and Planning Authority plays a crucial role in ensuring the sustainable management of funds and the successful implementation of compensatory afforestation initiatives within the state. Through its various functions and activities, the authority contributes to the conservation and restoration of forest ecosystems and biodiversity in Tamil Nadu.

10. Management of Forests

The management of forests in Tamil Nadu involves a multifaceted approach aimed at conservation,

sustainable utilization, and community participation.

Protection and development of forests are necessary for the long-term survival of human civilization. Tamil Nadu Forest Department ensures effective protection and management of forests to yield desired outcomes through the whole-hearted participation of local communities. Forests of Tamil Nadu are being managed with the following broad objectives :-

1. Biodiversity and genetic resource conservation by protection of forests and wildlife.
2. Conservation and augmentation of water resources in forest areas.
3. Rehabilitation and restoration of degraded forests for improvement of forest cover
4. Welfare of tribal and forest fringe communities to ensure their economic

prosperity along with ecological stability.

Management of forests in Tamil Nadu is characterized by a holistic approach that integrates conservation, sustainable use, and community participation. By implementing effective management practices and policies, the state aims to safeguard its forest ecosystems for future generations while promoting socio-economic development and biodiversity conservation.

10.1. Forest Protection

Forest protection in Tamil Nadu is a priority for the state government to conserve its rich biodiversity, maintain ecological balance, and sustainably manage forest resources.

The Forest Wealth of the State faces threats like illicit felling of trees, forest fire , encroachment, illicit removal of sand and

resources, and poaching of wild animals etc. To ensure protection of forest resources and enhance biodiversity, Tamil Nadu Forest Department envisages the following strategies: -

Strengthen Forest Protection by recruiting frontline staff and providing specialized training to enhance highly specialized knowledge and capacity.

Strengthen infrastructure by equipping the staff with modern arms and ammunition, communication and transport facilities.

Improve intelligence gathering and coordination with other enforcement agencies.

Consolidate the forest lands by survey and demarcation of forest boundaries using advanced technologies like Differential Global Positioning Systems (DGPS) Survey, Remote sensing and

Geographical Information System (GIS) technologies.

Develop surveillance systems with advanced technologies.

Strengthen marine ecosystem protection.

Forest fire is the major challenge for the forest management in the State. As most of the forests in Tamil Nadu are deciduous in nature, the frequency and occurrence of forest fires are more and far-reaching. The State's forests are also prone to frequent forest fires due to various anthropogenic factors.

Territorial and wildlife Divisions are supported by 13 Forest Protection Squads, 17 Forest Stations, and 11 Roving check posts, functioning at important and vulnerable areas throughout the State. There are 132 Forest check posts with surveillance facilities. State Forest Fire Control

Centre with 34 District centres is established for quick and coordinated fire response. Tamil Nadu Forest Fire Management System helps in early fire detection and sending alerts to field units.

Protection Vigilance Forest Wildlife Crime Bureau (PVFWCB) came into force vide G.O.(Ms) No.117, Environment & Forests (FR.SPL.A) Department, dated.27.09.2017. Under the administrative control of the PVFWCB, the Forest Elite Force have been created to meet exigencies in Disaster Management, Fire Prevention & mitigation and other Emergencies. The PVFWCB wing coordinates with other law enforcement agencies such as the Wildlife Crime Control Bureau (WCCB), Customs, Police & other Departments to protect the Forestry resources, collects intelligence inputs from its information network and shares them with other law enforcement agencies and sets in motion covert and regular crime control

operations through Forest Stations, Forest Protection Squads and other Personnel. In the year 2023-24, the covert operations of protection wing in various instances have resulted in several high-profile seizures & arrests wherein illegal contraband in the form of Elephant Tusks, Ambergris, and Red Sanders have been confiscated in large quantities and the delinquents have been handed over to the territorial Ranges concerned to pursue appropriate judicial action.

By implementing these measures and engaging stakeholders at various levels, Tamil Nadu endeavors to ensure the effective protection and sustainable management of its forest ecosystems for the benefit of present and future generations.

10.1.1. Establishment & Functioning of Tamil Nadu Wildlife Crime Control Bureau

During the budget session on 03.09.2021 the Hon'ble Minister for Forest announced the establishment of the Tamil Nadu Forest and Wildlife Crime Control Bureau to detect and prevent organized crimes. Accordingly, the Government accorded administrative approval for the establishment of the Tamil Nadu Forest and Wildlife Crime Control Bureau with Headquarters at Chennai and four zonal offices at Chennai, Coimbatore, Madurai and Ramanathapuram .

Subsequently, the Tamil Nadu Forest and Wildlife Crime Control Bureau was launched by Hon'ble Chief Minister of Tamil Nadu on 8th August 2023. The Bureau is headed by the Director with four Zones and Eight Forest Stations with a strength of 100 staff.

The Bureau has made tremendous efforts in curbing Forest and Wildlife Offences throughout the

State by effectively implementing the Wildlife Protection Act 1972 (Amended 2022) and various acts related to protection and conservation of Forests and Wildlife. 339 cases have been booked upto March 2024 by the Bureau in various districts of the State which include Illegal trading of Tiger body parts, Elephant tusk & ivory articles, Marine Shells, Pangolin scales, Sea cucumber, Alexandrine Parakeets, Mongoose brushes etc.

10.1.2. Establishment of Forest Elite Force for any emergency in Forest areas.

The "Forest Elite Force" Alpha & Delta in two locations viz., Vaigai Dam, Theni and Tamil Nadu Forest Academy (TNFA), Coimbatore were formed on 20.08.2018. The objective of the Forest Elite Force is to respond effectively to any emergency in Forest areas. Forest Elite Force will promptly respond to Forest Fire, Rescue and search operations, Extreme cases of Human-Wildlife

conflicts, Cyclone and flood damage clearing operations and any other natural disaster situation. Forest Elite Force is not utilized for routine Forest and Wildlife protection duties.

The Forest Elite Force was given extensive training in all aspects of emergency needs. The Capacity building process involves the following major components:

a) Institutional training @ AAZP, Vandalur on Swimming fundamentals, Animal behaviour Studies, Zoo management & Rescue techniques.
b) Institutional training @ AIWC, Vandalur on Forensic science for wildlife crimes & Sample collection methods.
c) TRAINING @ SPECIAL TASK FORCE on Physical strengthening, Weapon

handling and holding techniques, Technical information of weapons, Theory of small arms, Weapon Firing practice, Map reading, GPS Handling, Obstacle crossing, Camouflage and concealment.

d) INSTITUTIONAL TRAINING @ ATTAKATTI – ATR on Eco-tourism management, Trekking, Man animal conflict, Physical endurance, Biodiversity management.
e) INSTITUTIONAL TRAINING @ MTR on Fireline management, Nutrition pattern, Elephant camp maintenance, GPS practicals.

The Forest Elite Force has been successful in assisting the Department during various emergency situations.

The Extensive training on various emergencies including fire imparted to the Forest Elite Force was extended to all the Forest Circles in Tamil Nadu by utilizing the services of the Forest Elite Force for training the other Forest Personnel under the "Forest Fire Management Awareness Programme"

10.1.3. Marine Elite Force

For strategic protection of the coastal and marine biodiversity, prevention of wildlife poaching and illegal trade in coastal regions, Government has issued orders for Establishment of Marine Elite Force with three units in Gulf of Mannar Biosphere Reserve including Gulf of Mannar Marine National Park and Palk Bay areas. It is the first Marine Elite Force in the country.

10.1.4. Modernization of Forest Force

The science of Forestry and Wildlife Management has evolved significantly over the last few years with the advent of new technologies. Modern day forestry requires appropriate and well-planned strategies for conservation of forest wealth and its biodiversity. Modern forest management should be focused on sustainable forestry practices to support forests which are invaluable resources providing life-sustaining oxygen, water, habitats for flora and fauna and livelihood opportunities for millions of people who depend on them. The department needs to be well equipped with the latest technologies and equipment for better response to challenges in the forestry sector. Hence, the Government has sanctioned a sum of Rs.52.83 crore for implementation of "Modernization of Tamil Nadu Forest Force" scheme during the period 2022 -

2023 to 2024 - 2025. The financial allocation for 2023 - 2024 is 18.35 crore and this scheme will be continued during 2024-2025.

By prioritizing these modernization efforts, the Forest Force in Tamil Nadu can enhance its effectiveness, efficiency, and resilience in managing forest resources, conserving biodiversity, and addressing emerging challenges in forest management.

10.2. Forest Conservation

10.2.1. Conservation of Forest biodiversity and genetic resources

Conservation of forest biodiversity and genetic resources in Tamil Nadu is critical for maintaining the ecological balance, preserving rare and endangered species, and promoting sustainable forest management practices. Key strategies and

initiatives for conserving forest biodiversity and genetic resources in the state are :

Protected Areas: Establishing and effectively managing protected areas such as wildlife sanctuaries, national parks, biosphere reserves, and conservation reserves is essential for conserving biodiversity hotspots and critical habitats in Tamil Nadu. These protected areas provide safe havens for a wide range of flora and fauna, including endemic and threatened species.

Species Recovery Programs: Implementing species recovery programs for endangered, threatened, and endemic species is vital for their conservation. This includes habitat restoration, captive breeding and reintroduction efforts, population monitoring, and genetic management to maintain genetic diversity within populations.

In-situ Conservation: Promoting in-situ conservation measures within natural forest

ecosystems helps preserve the genetic diversity of native plant and animal species. This involves maintaining intact forest habitats, protecting key biodiversity areas, and promoting natural regeneration processes to sustain ecosystem health and resilience.

Ex-situ Conservation: Establishing ex-situ conservation facilities such as botanical gardens, seed banks, gene banks, and captive breeding centers can safeguard the genetic resources of rare and endangered plant species. These facilities play a crucial role in preserving genetic diversity, conserving threatened species, and supporting research and restoration efforts.

Forest Restoration and Rehabilitation: Undertaking Forest restoration and rehabilitation projects to restore degraded forest ecosystems enhances biodiversity conservation and ecosystem resilience. This involves afforestation,

reforestation, agroforestry, and landscape restoration initiatives aimed at enhancing habitat connectivity, restoring ecological functions, and promoting sustainable land use practices.

Community Participation: Engaging local communities in forest conservation efforts through participatory approaches such as Joint Forest Management (JFM) programs, community-based conservation initiatives, and eco-development projects can enhance biodiversity conservation outcomes. Empowering communities to participate in decision-making, sustainable resource management, and alternative livelihood opportunities fosters a sense of stewardship and ownership of forest resources.

Research and Monitoring: Conducting scientific research, biodiversity surveys, and monitoring programs helps assess the status and trends of forest biodiversity and genetic resources in Tamil

Nadu. This includes documenting species diversity, identifying key biodiversity areas, monitoring population dynamics, and assessing threats to biodiversity.

Policy and Legal Framework: Strengthening policy and legal frameworks for biodiversity conservation, forest protection, and sustainable management is crucial. Enforcing existing laws such as the Wildlife Protection Act, Forest Conservation Act, and Biological Diversity Act, and developing comprehensive biodiversity conservation strategies and action plans can provide a regulatory framework for conservation efforts.

Awareness and Education: Raising awareness and building capacity among stakeholders including forest officials, local communities, educational institutions, and the general public, is essential for fostering a culture of conservation.

Conducting awareness campaigns, educational programs, and outreach activities helps promote biodiversity conservation values, encourage responsible behavior, and mobilize support for conservation initiatives

10.2.2. Conservation and Management of Coastal Ecosystems

Conservation and management of coastal ecosystems in Tamil Nadu are crucial for protecting biodiversity, preserving natural habitats, supporting livelihoods, and mitigating the impacts of climate change.

Tamil Nadu is having a long coastline of 1,076 Km covering 14 coastal districts. Special attention being accorded for the management of the fragile ecosystem of coastal areas with a thrust on mangrove forests, wetlands, and the corals in Gulf of Mannar Marine National Park. Considering their

vital role in the coastal ecosystem the degraded mangrove areas are being restored consistently.

Mangrove forests provide a range of ecosystem services, play a key role in stabilizing land and erosion control in the face of changing sea level by trapping sediments, cycling nutrients, processing pollutants, supporting nursery habitats for marine organisms and providing fuelwood, timber and fisheries resources. Mangroves are also highly valued by coastal communities, which use them for shelter, securing food and fuel wood, medicinal plants and even as sites for agricultural production, especially rice production. Mangroves provide several important functions to animals such as breeding and nesting grounds, shelter areas, as well as feeding habitat. Mangroves may also enhance the resilience of corals by providing a natural refuge from climate change induced thermal stress and ocean acidification.

In addition to the above functions, protection against coastal disasters such as cyclones, tsunamis, and tropical storms is identified as an important ecosystem service of mangrove ecosystems. Mangroves also play an important role in global climate change mitigation as they are a significant global carbon store and sink, with the largest average carbon stocks per unit area of any terrestrial or marine ecosystems. As per the ISFR, 2021, mangrove cover of Tamil Nadu is 45 sq km spread over 8 districts.

Coastal shelterbelt plantations are being raised to reduce the velocity of winds to minimize wind erosion and to act as a protective shield for the coastal areas against the vagaries of nature including natural calamities like tsunamis, cyclones, tidal surges, and floods.

The Gulf of Mannar Biosphere Reserve supports the conservation of marine biodiversity

through the integration of activities of relevant Departments and community participation and adoption of scientific management principles and programmes and shall continue to provide environmental benefits to the present as well as future generations.

The coastal area along the Gulf of Mannar has more than 225 fishing villages with a population of about 2 lakhs. To strengthen the participatory approach, 252 Village Marine Councils (VMC) & Eco-Development Committees (EDC) have been constituted comprising coastal villagers as members in Ramanathapuram and Tuticorin districts. Microcredit funds were provided to the villages for alternate income generation activities. Group enterprise activities have also been promoted through Self Help Groups (SHGs) and enterprise groups. The fund support has been given on repayable loan basis. About 2,543 SHGs

are in existence through this revolving fund support and 80 different alternate income generation activities/group enterprises are being undertaken through the SHGs.

By implementing these strategies and initiatives in a coordinated and participatory manner, Tamil Nadu can effectively conserve and manage its coastal ecosystems, safeguarding their ecological integrity and ensuring sustainable use for future generations.

10.2.3. Trekking & Allied Activities in Forest and Wildlife Areas of Tamil Nadu

Tamil Nadu has tremendous potential in the trekking and ecotourism sector owing to its stunning landscapes and unique biodiversity.

The Government of Tamil Nadu issued orders for regulating Trekking in Reserved Forests and Wildlife Areas in Tamil Nadu under Regulation of Trekking Rules 2018 in G.O (D) No.296, Environment and Forests (FR.14) Department dated 12.10.2018.

The trekking routes have been categorized into three- Easy, Moderate, and Tough with fees and conditions of trekking prescribed. The fees so collected are meant for the development of forests and ecotourism.

The Rules also delineate actions prohibited during treks and penalties for violations as applicable. The trekking Rules also specify period of the year and time of the day when treks are permissible and regulate number of persons/ groups on any permitted route.

The above Rules underline that no person shall undertake trekking without obtaining permission from the Competent authority. Besides, no agency or organization or club shall facilitate or organize trekking unless they are registered with the Forest Department.

Permission has been accorded to the Tamil Nadu Wilderness Experiences Corporation (TNWEC), a State Government undertaking with the mandate of ecotourism development to organize trekking and allied activities in Forest and Wildlife areas of Tamil Nadu.

A Trekking atlas incorporating all approved trek paths has been prepared and all bookings related to trekking will be through a centralized online booking portal managed by TNWEC.

TNWEC acts as the vehicle to extend the services to the clients who are ecotourists and bound by Laws and Rules in force. In short, TNWEC acts as a facilitator to provide curated ecotourism experiences to the clients along with awareness creation and local livelihood improvement. The corporation will be the direct point of contact for the trekkers/ ecotourists.

Local Community plays a vital role in any ecotourism initiative. The local villagers including tribals and members of the ecotourism management committee / Eco-tourism Development Committee (EDC) / Village Forest Committee (VFC) shall be engaged with trekking programmes in multiple roles. The corporation primarily relies on local manpower for trek/ecotourism related Human Resources like Trek Coordinators, Trek Leaders, Trek Guides, etc.

By promoting responsible and sustainable trekking and allied activities in forest and wildlife areas, Tamil Nadu can leverage its natural assets to provide memorable experiences for visitors while contributing to biodiversity conservation, community development, and environmental stewardship.

10.2.4. Climate change Mitigation and Adaptation

India is a signatory to various international agreements for reducing greenhouse emissions. Carbon sequestration by growing forests has been considered a relatively inexpensive means of addressing climate change. Implementation of the Tamil Nadu Green Mission would go a long way towards climate change mitigation and adaptation.

The total Carbon stock of forests in the State including the Trees outside of Forests (patches

which are more than 1 ha. in size) is 214.61 million ton (786.90 million ton of CO_2 equivalent) which is 2.98 % of total forest carbon of the country. (Source: ISFR, 2021)

10.2.5. Forest Hydrology and integrated watershed management

Forest hydrology and integrated watershed management play crucial roles in sustaining water resources, biodiversity, and ecosystem services in Tamil Nadu.

Forest Hydrology and integrated watershed management refers to the conservation, regeneration and the judicious use of all natural resources like land, water, biodiversity within the watershed area. Watershed Management tries to bring about the best possible balance in the environment between natural resources on one side and man and animals on the other.

All forestry activities under different schemes implemented in Tamil Nadu are undertaken with the twin objectives of soil and water conservation and enhancing the livelihoods of the rural poor.

Different types of treatment activities are carried out under the concept of Integrated Watershed management. They include soil and moisture conservation measures (contour bund, loose boulder check dams, minor check dams, major check dams, percolation ponds) and afforestation measures. These watershed-based activities not only protect and conserve the forest and environment, but also contribute to livelihood security of forest dependants.

By integrating forest hydrology principles into watershed management strategies and promoting sustainable land use practices, Forest Department can enhance water security, biodiversity

conservation, and ecosystem resilience, while addressing the challenges of climate change and water scarcity.

10.2.6. Welfare of Tribal and other forest fringe communities

The welfare of tribal and other forest fringe communities in Tamil Nadu is a priority for the government and various stakeholders involved in forest management and social development. Here are key aspects of efforts to promote the welfare of these communities:

Recognition of Tribal Rights: Ensuring recognition and protection of the land and forest rights of tribal communities under the Forest Rights Act (FRA) is crucial for securing their livelihoods and cultural identity. Efforts are made to facilitate the process of community forest rights (CFR) and individual forest rights (IFR) recognition, enabling

tribal communities to access and manage forest resources sustainably.

- Tamil Nadu has 7.21 lakh tribal population as per 2011 census which constitutes 1.10% of the total population. The socio-cultural life of tribal community is centered around nature. In order to bring harmony, Forest Department has been taking several initiatives as below,

- providing basic infrastructure support to tribal settlements including approach roads, drinking water, housing and electricity through non-conventional methods.

- Under the Scheduled Tribes and Other Traditional Forest Dwellers (Recognition of Forest Rights) Act, 2006, individual and community rights are being granted.

- During the year 2023-24,15 cashew units were allotted to Irular Tribal Society excluding those units from open auction.
- 36 Tribal Anti-Poaching Watchers have been appointed as Forest Watchers during 2023-24.
- Providing skill development training for tribal people for alternative livelihoods.
- facilitating employment opportunities for tribal youth in collaboration with private companies.
- By addressing the socio-economic, cultural, and legal needs of tribal and forest fringe communities through holistic and inclusive development approaches, Tamil Nadu can promote their welfare, enhance their resilience, and foster sustainable forest

management practices that benefit both communities and ecosystems.

10.2.7 Ecotourism

Ecotourism in Tamil Nadu offers visitors the opportunity to explore the state's rich natural and cultural heritage while promoting conservation, community development, and sustainable tourism practices

Tourism is one sector that has the potential to drive socio-economic change and economic prosperity if done responsibly. Tamil Nadu has great untapped potential which can be explored. Responsible ecotourism activities shall be promoted not only to preserve the natural heritage but also to create jobs and promote the local culture and heritage. The Ecotourism policy framework shall mandate the use of sustainable

and appropriate tourism Guidelines with sharing of resources with the local community.

10.2.8 Forest Research

Forest research in Tamil Nadu encompasses a wide range of studies and investigations aimed at understanding forest ecosystems, biodiversity, conservation, management practices, and socio-economic aspects related to forests. Some key aspects of forest research in Tamil Nadu are:

Forest Research in Tamil Nadu was commenced by the State Forest Department in the year 1918 and its centenary was celebrated in 2018. Over the years, various research activities focused on thrust areas identified from time to time based on emerging field requirements, have been undertaken. At present, there are five Research Divisions headquartered at Chennai, Dharmapuri, Coimbatore, Trichy and Madurai and 52 Research

centres spread across the 7 agro-climatic zones of the State.

Tamil Nadu Forest Department has made notable achievements in the areas of applied forestry research. 167 Seedling Seed Orchards (SSO), 64 Clonal Seed Orchards (CSO), 75 Seed Production Areas (SPA) and Seed Stands (SS) have been established and are being maintained. More than 1,220 Candidate Plus Trees (CPT) have been identified and quality seeds are being collected from them.

The main objectives of research wing are collection of good quality seeds from selected CPTs, refrigeration, storage and distribution, raising of quality seedlings and selection of tree species suitable for agroforestry, selection of fast-growing wood species for industrial needs, production of quality vermicast, VAM and distribution, value

addition of wood-based utility products and maintenance of Germplasm of endangered flora.

Seed Storage ranges also have Seed Testing Laboratories to analyse the quality of the seeds. Apart from the regular Sample tests the center has standardized Seed Protocols for 110 species and release the results as Seed Directory. Seed is one of the most important components that plays a vital role in any Tree Improvement or Afforestation Programme. Hence Seed Calendar for the collection of seeds from about 200 species were prepared.

The thrust of current forestry research activities is on reducing pressure on natural resources by increasing productivity through genetic and silvicultural improvement, making technical know-how for agroforestry, wasteland development, eco-restoration and conservation of

forest ecosystem. To increase availability of high-quality planting material of economically important tree species for afforestation and reforestation of degraded forests and taking up large-scale tree cultivation in private lands, the Research Wing has established seed production areas, clonal seed orchards, seedling seed orchards and hedge stool in various research centres in Tamil Nadu. Micro and macro propagation for economically important and fast-growing species like Teak, Sandalwood, Silver oak, *Melia dubia*, *Ailanthus excelsa*, *Eucalyptus*, *Casuarina* has been standardized.

The Road map to strengthen research proposes to inventorize CPTs, SSs, SPAs to strengthen the genetic source of various commercially important timber and medicinal flora, protect and strengthen the available infrastructure with the Research centres, establish advanced laboratory facilities to carry out bio- technological

studies, strengthen the genetic base of required plant resources, carry out microbiological researches, enhance productivity, produce fast growing varieties of commercially important timber and medicinal plants on a large scale for farmers and to promote certification of the quality of commercial timber and medicinal products.

By generating scientific knowledge, evidence-based recommendations, and innovative solutions, forest research in Tamil Nadu contributes to informed decision-making, policy formulation, and sustainable management of forest resources for the benefit of present and future generations.

11. Information Technology

11.1. Forest Conservation and Data Center

1. A research study entitled "Creation of Geospatial Database of the Sacred Groves in Tamil Nadu and Documentation of the

Biodiversity" has been approved by the State Planning Commission at an amount of Rs.45.88 lakhs. It will be completed by June 2024.

2. IT wing of the department is making initiatives to improve the efficiency and transparency in forest administration by providing various online / web-based services. Project Management Unit (PMU) has been set up for the implementation of End to End computerization for the development of Software applications to facilitate ease of doing business.
3. Forest Fire Dashboard and mobile app have been developed and deployed for Real-time data monitoring of Forest fires. As Part of the project of "Restoration of degraded forest landscape" Phase – 1, the Tamil Nadu Forest

Fire Control Centre has been established at Panagal Maaligai Chennai-32, at a total cost of Rs.100 lakhs. This project has been sanctioned under the APO of 2022-2023 in the NABARD fund. The Centre is currently operational and is staffed by one Forest Range officer, Forester and Junior Assistant, along with one GIS expert, and Technical Assistant on contract basis. The Centre operates under the supervision of the DCF (GIS). To facilitate streamlining and Real time reporting of Forest Fire incidents, Tamil Nadu Forest Fire Management system has been developed.

4. To have effective and transparent inter and intra government process, e-Office system has been put into use for all the personnel in the Forest Department.

5. Online transfer has been implemented in Tamil Nadu Forest Department through "Online Transfer Portal" for executing all types of transfers through online mode since May 2023.
6. The Elephant Death Audit Framework module has been developed to exhibit the data about the natural death of Elephants and Human Elephant Conflict from the year 2023 onwards.

12 Human Resource Management

The workforce of the department comprises 9,755 sanctioned posts that are manned by personnel borne on the Indian Forest Service, Tamil Nadu State Service, Tamil Nadu Forest Subordinate Service, Tamil Nadu Ministerial Service, other services as well as some on deputation from

other departments or cadres. About sixty-five percent of the posts are constituted by uniformed staff (Forest Range Officers, Foresters, Forest Guards, Forest Guards with driving license and Forest Watchers) who are the frontline field staff tasked with the protection and development of the forests and biodiversity and thus form the backbone of the workforce. Of the sanctioned strength, 2,974 posts are vacant and efforts are being made to fill these up through promotion, recruitment by transfer from other services and direct recruitment.

Senior officers of the department ensure through a robust system of mentoring and monitoring that individual, group, and organizational goals are well aligned and that the officials acquire on the job or otherwise the desired attitudinal orientation, skill set

and also contribute to organizational effectiveness by achieving the desired performance parameters.

The forestry sector is witnessing a rapid transformation globally with community participation and multi-sectoral, multi-stakeholder, collaborative partnerships becoming the new norm. The State has always been at the forefront of conservation. Credited with many path-breaking initiatives, it is poised to maintain its position of leadership.

To equip the forest managers with necessary skill sets to enable them to face the existing and emerging challenges due to anthropogenic pressures and climate change among other things capacity building programmes are being conducted. organizational needs of the sector and the

competency of the personnel are matched to develop appropriate capacity-building programmes including training and exposure visits. These aim at assisting them to keep abreast with the new and innovative methods of personnel management and resource conservation as well as best practices to maintain cutting edge and ensure the environmental security of the state. During 2023-24, one hundred and twelve (112) Indian Forest Service Officers were deputed for compulsory training programmes sponsored by the Government of India and conducted by various organizations all over India. One hundred and twenty three (123) state service officials were deputed for various in-service training conducted by the Anna Staff College, Chennai. Training was also organized under

the Tamil Nadu Biodiversity Conservation and Greening Project for Climate Change Response (TBGPCCR) and Modernization of Forest Force scheme. The department has two training institutes of its own viz. Tamil Nadu Forest Academy at Coimbatore and Tamil Nadu Forestry Training College at Vaigai Dam which attempt to inculcate a deep sense of professionalism in the service by imparting quality training. The facilities available there have been upgraded recently.

To optimise workforce deployment, an online Transfer portal was put in place in the year 2022 and is functioning in the department since then. Smartcards that capture the employee's profile as well as history of service have been developed and will be integrated into the portal enabling the department to take informed decision based

on their skill set, history of service and also to accommodate their transfer requests.

Appointments are offered on compassionate grounds to the eligible dependent family members of government servants, including those under suspension, who died in harness and missing government servants who are declared dead, to relieve the family of the Government servant concerned from financial destitution. One Hundred and Twenty Five (125) eligible persons have been appointed through Compassionate Ground appointment at various levels. (Forest Guard 40; Junior Assistant 17, Typist-3; Office Assistant -37; Office Watchman-11, Driver-13; Sweeper-1,Cook-1, JDO-2). Another fortytwo (42) posts are envisaged to be filled up through compassionate ground appointments soon.

13. Forest Revenue and Expenditure Details

13.1 Forest Revenue

Revenue from sale of social forestry plantations and sale of timber are major source of revenue apart from fines and forfeitures. Mature teak trees grown on canal bank plantations are being harvested every year. Paper and Plywood Industries requirement of pulpwood, softwood and bark are met from matured plantations of eucalyptus and wattle.

Forest Revenue (Rs. in lakh)

Sl. No	Source of Revenue	Budget Estimate 2024-25
i	Sandalwood	194.40
ii	Timber	1,383.00
iii	Supply of raw materials to industries	320.81
iv	Other Minor Forest Produce	49.57
v	Farm Forestry plantations excluding refund	1,100.00
vi	Sale of bamboo, cashew, softwood plantations, etc.,	114.45
vii	Other receipts	6,030.24
	Sub total	9,192.47
	Deduct recoveries (-)	0.00
	Total	**9,192.47**

13.2 Expenditure

All the protection and conservation programmes including habitat improvement, Forest extension activities, Forest Research and Education programmes will be continued

The necessary provisions for schemes made in the budget are given below :-

Forest Expenditure (Rs in lakh)

SI.No	Name of the Plan	Actuals 2023-24	Budget Estimate 2024-25
1.	State's Expenditure	73,498.57	76,150.58
2.	Externally Aided Project	8,310.09	16,837.28
3.	Central Sector Schemes	0	0.01
4.	Schemes shared between State and Centre	4,992.83	17,805.68
5.	ADD Recoveries	0	1,183.08
6.	Loans & Advances	0	0.01
Total		**86,801.49**	**1,11,976.64**

14. Forest Corporations

14.1 TAMILNADU FOREST PLANTATION CORPORATION LIMITED (TAFCORN)

A. INTRODUCTION

Tamil Nadu Forest Plantation Corporation Limited (TAFCORN) was formed on 13th June 1974 with headquarters at Trichy to raise, maintain and harvest forest plantations on a sustained yield basis on commercial scale to meet the demand of paper industries. For this 71,539.55 ha., of Reserved Forest land was leased out by the Government to TAFCORN. Lease rent as fixed by the Government is being paid every year. From 1996-97 the lease rent is payable at 30% of the annual sales from the plantation activities. The authorized share capital of the Company is Rs. 10 crores and the shares subscribed and paid-up capital is Rs. 5.64 crores as on date.

B. The main objectives of the Company are:

1. To raise, maintain and harvest Eucalyptus plantations on a sustained yield basis for the production of pulpwood and firewood.

2. To raise and maintain Cashew plantations for the production of Cashewnuts which is a Foreign Exchange earning commodity.

3. To undertake any other activities both plantation and other business as approved in the Articles of Association.

C. LOCATION:

Area of 71,539.55 ha. leased out to TAFCORN fall in Trichy, Thanjavur, Pudukottai, Ariyalur, Karur, Sivagangai, Cuddalore, Villupuram, Kallakurichy and Thiruvannamalai Districts of Tamil Nadu.

ACTIVITIES

EUCALYPTUS:

Eucalyptus is one of the species which yields quality pulpwood for paper and Newsprint making. Eucalyptus has been planted over an area of 52,524.28ha, in the corporation. Two species namely Eucalyptus tereticornis and Eucalyptus camaldulensis were planted extensively depending upon the soil, rainfall and temperature prevailing in the areas. Annually the Corporation supplies about 1,50,000 MT of pulpwood to wood-based industries namely M/s. Tamilnadu Newsprint and Papers Limited and M/s. Seshasayee Paper and Boards Limited.

1) EUCALYPTUS CLONES:

Clonal plants of Eucalyptus have got the advantage of uniform fast rate of growth, capable of higher yields of pulpwood per ha., than seed origin plantation. Therefore, TAFCORN had

initiated the use of clonal plants for the planting programme from 1999-2000 onwards. Superior tested clones of Eucalyptus were obtained from Andhra Pradesh Forest Development Corporation, I.T.C., Bhadrachalam and from the Tamilnadu Forest Department and were assembled as clonal bank or germplasm collection for future multiplication. 'Hedge stools' were formed to collect large number of cuttings for production of clonal plants. These clonal plantations planted in all the six regions of the Corporation in different soil types and moisture status have given higher yields.

2) CASHEW (Anacardium occidentale)

Cashew is one of the important nut crops of India fetching foreign exchange through the export of cashew kernels. It is to be noted that the Tamilnadu Forest Department started the cashew cultivation from 1955 onwards as a pioneering

effort. When the Corporation was formed during 1974, even at that time, 20 year old trees were taken over. But now, most of the trees have crossed the age of 30 years and are up to 50 years old. The senile plantations over 30 years of age have been replaced with high-yielding grafted plants of cashew every year since 2004 in a phased manner with VRI-III variety.

3) Consultancy

Based on the G.O (Ms) No.99, Environment, Climate Change and Forests (FR.8) Department, Dated: 03.11.2021 and subsequent approval of Board of TAFCORN. M/s Ernst & young LLP limited, Chennai was appointed as consultant for improving the business and financial performance of Tamilnadu Forest Plantation Corporation (TAFCORN) on long-term sustainable basis.

Final report of M/s Ernst & young LLP limited, Chennai was submitted to the Government.

Necessary action plan has been submitted for the implementation of the recommendations of M/s Ernst & Young LLP Limited.

4) Initiative For Tribal Development:

During 2021-22, one cashew unit of 39.40 ha. in Virudhachalam Region was excluded from e-auction and directly allotted to the Irular Tribal Society of Kuvagam village of Ariyalur District, on a trial basis, at fair price fixed by Managing Director, TAFCORN. It was sold by Irular Tribal Society for Rs.9.02 lakh and a profit of Rs.3.50 lakh was earned by them.

Based on good response of last year and to improve the living condition of Tribals, during 2022-23, ten units were excluded from e-auction and directly allotted to Irular Tribal Society at a fair price of Rs.80.55 lakhs.

For the year 2023-24, 15 cashew units were excluded from the e-auction for allotment to Irular Tribal Societies.

5) CORPORATE SOCIAL RESPONSIBILITY:

As per the Companies Act 2013, Tamil Nadu Forest Plantation Corporation spends at least 2 % of the company's average net profit for the preceding three financial years on Corporate Social Responsibility activities in each financial year.

In the last three years, the following amounts have been spent on Corporate Social Responsibility activities.

2021-22 - Rs.95.00 lakhs

2022-23 - Rs.90.00 lakhs

2023-24 - Rs.86.29 lakhs

6) GREEN TAMILNADU MISSION:

The Government of Tamil Nadu has planned to increase the Forest and tree cover in Tamil Nadu

from 23.6% to 33% by 2030-31 under the "Green Tamil Nadu Mission".

According to the Government order, a total of Rs.10.90 crores for the year 2022-23 and 15.00 crores for the year 2023-24 has been released to the Green Tamil Nadu Mission for undertaking planting activities.

7) GOLDEN JUBILEE YEAR:-

In view of the 50th anniversary of the establishment of the Tamil Nadu Forest Plantation Corporation, an incentive of Rs.10,000/- has been given to the employees of the Corporation who were in service as of 27.09.2023.

The details of the plantations raised and expenditure involved during 2022-23 and 2023-24 are given below:-

Sl. No.	Raising plantation species	Physical (Ha.)		Financial (Rs.in lakhs)	
		2022-23	2023-24	2022-23	2023-24

1.	Eucalyptus	1669	940	604.92	291.39
2.	Cashew	639	546	220.65	214.15

The Eucalyptus pulpwood supplied to paper mills during 2022-23 and 2023-24 are given below:-

Year	**Quantity of Pulpwood supplied (M.T.)**	**Revenue (Rs.in lakhs)**
2022-23	3,31,397.761	14,747.20
2023-24	3,30,920.417	15,905.08
2024-25 (Budget estimate)	2,41,348.000	11,599.00

Cashew is the second major revenue earner in the Corporation. The details of revenue realized are given below:-

Year	**Revenue (Rs. in lakhs)**
2022-23	15,71.011
2023-24 (31.03.2024)	451.220

2024-25 (Budget estimate)	1,902.000

The revenue and expenditure details of the Corporation for 2022-23, Revised Budget Estimate for 2023-24 and the Budget Estimate for 2024-25 are given below:-.

Year	**Revenue**	**Expenditure**	**Profit (+) / Loss (-)**	
			As per Budget	Actuals
2022-23	17,746.97	12,965.00	--	59,12.9
2023-24 (Revised Budget Estimate)	18,540.61	13,788.61	4752.	--
2024-25 (Budget estimate)	15,168.60	10,947.60	4,221.00	--

The Budgeted profit for the financial year 2023-24 of TAFCORN is Rs.4752.00 Lakhs.

The details of fresh Eucalyptus and cashew plantations to be raised and cost involved during 2024-25 are given below:-

Plantations	**Physical (Ha.)**	**Financial (Rs.in lakhs)**
Eucalyptus	2534.60	1048.31
Cashew	1268.00	602.17

14.2 Tamil Nadu Tea Plantation Corporation Limited (TANTEA) Coonoor, The Nilgiris District.

1. Introduction & brief history of TANTEA:

The Government of Tamil Nadu established the "Government Tea Project" in the Nilgiris in 1968 for the rehabilitation of Sri Lanka repatriates under the Shastri-Srimavo Pact. Also known as the Indo-Ceylon Agreement and Bandaranaike-Shastri Pact, it was an agreement signed between Sirimavo Bandaranaike, the Prime Minister of Sri

Lanka, and Lal Bahadur Shastri, the Prime Minister of India, on 30 October 1964. The primary purpose of this pact was to address the issues of people of Indian origin residing in Sri Lanka who were descendants of Indian laborers brought to the island during the colonial period. Besides other objectives, the pact aimed at facilitating repatriation for those who wished to return to India.

TANTEA Corporation was created as per G.O.Ms.No.575, Forests and Fisheries, Dated 17.6.1975. It was registered as a Company under the Companies Act, 1956 on 22.8.1975 authorized share capital of this Corporation is Rs.25 Crore and the paid-up share capital is Rs.14.96 Crore. The Government of Tamil Nadu holds the entire share capital of the Corporation. The primary objective of creating the corporation is to create employment opportunities for the Sri Lanka repatriates by

establishing tea gardens as the repatriates were previously working in tea estates in Sri Lanka.

As per Government Memorandum No.11174/FRVB/76-2, dated 06.05.1976, 1521.20 ha. of forest lands in Gudalur Taluk, Coonoor Taluk and Kotagiri Taluk of the Nilgiris district was allotted to TANTEA corporation for a period of 50 years for the establishment of tea gardens. The lease rent was initially fixed at Rs.1250/ha which was revised to Rs.2000/ha in 1984 for both productive and unproductive lands. TANTEA had raised tea in 5 divisions, viz, Coonoor, Kothagiri, Cherambady, Cherangode and Nelliyalam between 1969 and 1979 under Phase I of the project.

In G.O. Ms No.1148, Forests and Fisheries Department, dated 21.12.1978 an area of 2628.28.01 ha of lands located in Devala village of Gudalur Taluk, Nilgiris District was allotted to TANTEA corporation. 1077.20 ha of tea plantations

were established in 3 divisions, viz, Pandiar, Devala & Marapallam between 1979-84 under Phase II & III of the project. As per G.O.Ms. No.601, Forests and Fisheries Dept., dated 17.05.1984, the entire area of Kolapally Tea Division was transferred to TANTEA corporation.

As per G.O.Ms.No.671, Environment and Forests (CIN) Dept., dated 29.09.1990, an area of 696.24 ha. in Nilgiris Division and an area of 2480.20 ha. of land falling in Annamallias Division of the erstwhile Cinchona Department was allotted to TANTEA corporation. Tea plantations were raised in Naduvattam and Valparai region between 1990-95 under Phase IV of the project.

In 2015, Kolapally was merged with Cherambady and Cherangode Division, Devala with Pandiar Division and Ryan with Lawson Division as per MD.Ref. no.2254/2014/E1, dated 09.07.2015).

Marapallam Division was also merged with Pandiar Division.

In 2012, an area of 1338.85 ha of unplanted area in Valparai region was handed over to the Forest Department as per G.O.Ms.No.33, Env. & Forests (FR-8) Dept., dated 09.02.2012. An area of 129.14 ha of planted area in Valparai region was handed over to the Forest Department as per G.O.Ms.No.107, Env. & Forests (FR-8) Dept., dated 04.04.2012. In 2019, an area of 257.28 ha of planted area and 19.50 ha of unplanted area in Gudalur region was handed over to the Forest Department as per G.O.Ms.No.47, Env. & Forests (FR-8) Dept., dated 21.05.2019. In 2022, an area of 550.73 ha of planted area and 48.49 ha of unplanted area in Gudalur region was handed over to the Forest Department as per G.O.(Ms). No.173, Env. Climate Change & Forests (FR.8) Dept., dated 03.10.2022.

Of the total remaining planted area of 3503.03 ha, harvesting is being carried out over an operational area of 2861.56 ha. Bulk of the inoperational area lies in Lawson Division in Valparai. Currently there are eight divisions in TANTEA, viz, Coonoor, Kothagiri, Pandiar, Cherambady, Cherangode, Nelliyalam, Naduvattam & Lawson. The division details are furnished below:

Sl. No.	Division	Operational area (ha.)
1.	Coonoor	144.73
2.	Kothagiri	126.61
3.	Naduvattam	315.89
4.	Pandiar	624.13
5.	Cherambady	353.07
6.	Cherangode	494.54
7.	Nelliyalam	335.76

8.	Lawson	466.83
	Total	**2861.56**

There are 6 tea factories in TANTEA. Details are as follows:

Sl.No.	Name of the factory	Year of establishment	Installed capacity (in million kg of made tea)
1.	Cherangode	28.01.1978	2.25
2.	Pandiar	30.9.1988	2.25
3.	Nelliyalam	03.08.1995	2.25
4.	Ryan	21.10.2001	3.00
5.	Tiger Hill	03.05.1980	1.50
6.	Quinshola	08.12.1994	1.50
	Total		12.75

2. Establishment details:

TANTEA is headed by the Managing Director who is assisted by an officer of the level of General Manager and other officials in the head office including a Company Secretary and other office staff. Divisions are headed by Divisional Managers. However, there are no officers at the level of Divisional Managers from corporation staff. Assistant managers and recently posted Assistant Conservator of Forests, on deputation from the Forrest Dept., are heading the Divisions. Besides, 160 staff members are working in TANTEA as on date. TANTEA is, however, facing an acute shortage of field officers and Tea Makers which are essential for the effective management of the tea plantations and the production of quality tea.

Presently there are 3,477 workers in TANTEA out of which about 1,000 are engaged in factory

work. Besides, there are around 236 casuals engaged in various field activities. The wage rate was revised to Rs.438.43/day w.e.f 10.11.2023 for a base output of 35 kg. after due negotiations with labour Union representatives. The workers currently draw a daily wage rate of 454.03/day w.e.f 01.01.2024 with an increase of VDA.

3. Details of financial assistance received from the Government during 2023-24

Sl No	Govt order No.& date	Amount	Purpose	Remarks
1	G.O.(Ms). No.80 Environment and Forests (FR.8) Dept. dated 09.08.2019	Rs.16.72 crore	For modernization of factories.	An amount of Rs.3 crores has been utilized for purchase of machinery and Rs.8.26 utilized for wages / salary as per Government's direction. Work is under progress for procurement of shortlisted machineries with the balance

				amount of Rs.5.46 crore.
2	G.O.No.117, Dept. of Planning, Development and Special Initiatives, dated 27.10.2022	Rs.4 crore	For carrying out various soil improvement works in TANTEA gardens	Fertilizers, weedicides and other agro inputs have been purchased for Rs.4 crore and utilized in TANTEA fields.
3	G.O.Ms.No.94 Environment Climate Change and Forests (FR.8), dated 29.10.2021	Rs.12.78 crores	For implementation of 7th Pay Commission to 212 staff of TANTEA.	Revision of scales of pay and allowances has been implemented for 212 employees of TANTEA with effect from 29.10.2021 and arrears have been settled.
4	G.O.(Ms)No. 313, Finance (BPE) Department dated 27.10.2023 & Govt.lr No. 1031/FR.8(ii) /2023-2 dated 1.11.2023	Rs.300.86 lakh	For payment of 10% bonus and ex-gratia to the employees and workers of TANTEA through inter corporate loan from TAFCORN.	An amount of Rs.601.72 lakhs were incurred towards the payment of bonus and ex-gratia to the employees and workers by obtaining the same from TAFCORN.

5	G.O.(Ms)No. 167, Environment, Climate Change & Forests (FR.8(ii) Department, dated 10.11.2023	Rs.10.79 crore	For implementation of worker's wage revision and payment of additional 10% bonus and ex-gratia to the workers through inter corporate loan from TAFCORN.	Revision of wages have been implemented @ Rs.438.43/day w.e.f 10.11.2023 by obtaining loan from TAFCORN. Current wage is Rs.454.03/day w.e.f 01.01.2024 with increase of VDA.
6	G.O.154, Environment, Climate Change and Forest (FR.8(II) Department dated 27.10.2023	Rs.57.82 lakh	To conduct a study by Ernst & Young LLP Ltd., Chennai for long-term sustainability of TANTEA.	The final report on 'Long- Term Sustainability of TANTEA Corporation Ltd.' prepared by Ernst & Young LLP, Chennai was submitted to the Government on 13.4.2023. The consultancy fee of Rs.57.82 lakh has been settled to Ernst & Young LLP, Chennai.

4. TANTEA performance report:

The yield of GTL and sale of made tea details of TANTEA in the past two years is presented below:

Particulars	2022-23		2023-24		2024-25
	Target	Actuals	Target	Actuals	Budget Estimate
Physical					
a) Harvest of Green Tea Leaf (in lakh kg).	292.00	228.11	231.00	247.91	242.00
b) Yield/ha.in kg.	7203	5971	8072	8663	8457
c) Production of Made Tea	67.16	60.03	53.13	64.13	55.66
d) No. of workers		3839		3477	3415
Financial	(Rupees in lakhs)				
a) Income	7957.64	6145.45	5663.04	5396.93	6219.94
B) Expenditure	10063.92	9919.20	9999.66	9931.28	10149.03
C) Profit (+)/Loss (-)	(-) 2106.28	(-) 3773.75	(-) 4336.22	(-) 4534.35	(-) 3929.09

The primary reason for the negative financial result is the difference between the Cost of production (CoP) and average price fetched in the auctions. Average CoP in TANTEA is around Rs.105/kg of made tea whereas the average price fetched in the market is around Rs.90/kg resulting

in a net loss of Rs.15/kg of made tea. The primary reasons for low price of TANTEA tea includes inconsistent quality, presence of fibers giving it a brownish appearance (market prefer black teas) and taste issues. This is basically due to a combination of factors such as inconsistent quality of GTL, deficiencies in factory manufacture and machineries giving the teas undesirable appearance, etc. To improve the quality of Green Tea Leaves and also to improve factory performance TANTEA has undertaken a slew of measures that aim at better earningfor the corporation. Some of the measures are briefly mentioned below.

5. Measures taken to increase the yield and quality of GTL:

The primary reasons for low productivity and poor quality of GTL in TANTEA is the absence of regular cultural operations such as regular

application of fertilizer and weedicides, lack of foliar spray, delayed and missed pruning cycles, etc. As against the United Planter Association of South India (UPASI) norm of 4 dozes of manuring in a year, fertilizer application in TANTEA has been less than once a year between 2000-2001 & 2022-23. Yield per hectare has, therefore, decreased from 9909 kg/ha. in 2009-10 to 6512 kg/ha. in 2022-23. To improve soil fertility and GTL yield, fertilizers, weedicides and other chemicals were purchased for an amount of Rs. 4 crores under funding from SADP. Two rounds of fertilizer application have been carried out between July 2023 and January 2024 and application of weedicides, etc have also been carried out. Such measures have started yielding results and yield/ha. in 2023-24 is increased to 8663 kg/ha. compared to 6512 kg/ha. in 2022-23. GTL

harvest in 2023-24 has increased by 19.80 lakh kg. than 2022-23 harvest.

A major factor affecting the quality of GTL in TANTEA and consequent quality of the made tea is the delayed plucking rounds due to worker shortage. Further, as nearly 80% of the pluckers in TANTEA are above 50 years of age, pluckers' efficiency is often below the desired optimum level. The total number of workers available for plucking is around 2200. With a total operational area of 2862 ha, worker per/ha is 0.74 which is less than the prescribed UPASI norm of 1.3/ha for shear plucking. To address this problem, TANTEA has embarked on a major drive towards mechanization of field operations. After conducting field study and market research, TANTEA has decided to procure battery-operated one-man machine harvesters and the robotic T-Rover. The machine harvester is expected to yield a daily plucking average of 70

kg to 150 kg per day, depending on season and field productivity. The robotic T-Rover will not only increase yield per hectare but shall also reduce worker dependency. Such measures will not only increase workers' productivity but shall also improve plucking rounds resulting in better quality of GTL

6. Measures taken to improve the quality of made tea in TANTEA:

The first step towards improvement of quality of made tea is by improving the quality of GTL which is aimed through the aforementioned measures. A major reason for less than the desired quality of made tea in TANTEA factories is the fact that most of the machineries are old, outdated, often malfunctioning, poor efficiency, etc. Frequent breakdowns and maintenance issues hamper the production of made tea. To improve factory

performance, a proposal for the modernization of factories was submitted and the Government had sanctioned a sum of Rs.16.72 crore G.O.(Ms) No.80 Environment and Forests (FR.8) Dept., dated 09.08.2019. An amount of Rs.3 crores has been utilized for the purchase of machinery and Rs.8.26 crore utilized for wages/salary as per Government's direction. Work is under progress for the procurement of shortlisted machinery with the balance amount of Rs.5.46 crore.

TANTEA has also initiated the process of engaging the services of a Senior Technical Consultant to advise TANTEA on how to improve field productivity and increase the profitability of the corporation. This is as per the recommendation of Ernst & Young LLP Ltd, Chennai This was also agreed during 224th Board Meeting of TANTEA conducted on 12.01.2024, wherein the

Board members had agreed for the appointment of a suitable tea expert by following due procedures.

7. Measures taken to increase the sale of made tea:

Action is being taken to appoint more wholesale/retail dealers. At present TANTEA has 89 Retail Dealers, 12 Wholesale District Dealers. Besides this, TANTEA is participating in Government fairs and other Tourism festivals etc., to advertise TANTEA products to reach a larger sphere of customers.

TANTEA has received an indent for supply of 11.50 ton of made tea from Tamil Nadu Civil Supplies Corporation on 08.02.2024 for supply of tea packets through Public Distribution System. Action is being pursued to get orders for supply of tea in the State of Karnataka.

TANTEA products are being supplied to Neyveli Lignite Corporation, SAIL, Tamil Nadu

State Transport Corporation, Police Canteen, Post Office, Prison Department, Eco Development Committee, TANMAG and TANGEDCO etc.

It is expected that with the implementation of modernization schemes and improved field management initiatives, TANTEA shall register better returns in the coming days.

14.3. ARASU RUBBER CORPORATION

To rehabilitate Sri Lankan repatriates who were well conversant with rubber cultivation, the Government of Tamil Nadu has started Government Rubber Plantation in Kanyakumari District, considering the agro-climatic suitability required for rubber cultivation in an area of 4785.70 hectares in the year 1961. To take over the rubber cultivation as a corporate entity from the erstwhile Government Rubber Plantation in 1984, Arasu Rubber Corporation Limited was formed. The corporation was registered on

01.08.1984 under the Companies Act 1956. Presently the Corporation has an authorized capital of Rs.13.07 crore and the paid-up share capital of Rs.13.07 crore. The substantial portion of share capital of the corporation is held by Hon'ble Governor of Tamil Nadu. After handing over some unsuitable areas back to the Forest department, the present area of operation is around 3627.115 ha. The Corporation employs around 1000 workers.

I) **The objectives**

i) To safeguard the future of the rubber plantation industry.

ii) To protect the interests of workers, increase employment potentialities and rehabilitate Sri Lankan repatriates who are well conversant with rubber cultivation.

II) Production and Financial Achievement

Sl. No	Particulars	2022-23	2023-24 (Revised Estimate)	2024-25 (Budget Estimate)
a)	Production of Rubber (in M.T)	**1449**	**1450**	**1481**
b)	Income and expenditure (Rs.in lakh) Income Expenditure	 **4461.76** **3942.91**	 **4146.07** **4100.58**	 **4083.32** **4079.86**
c)	Profit (Rs in lakh)	**518.85**	**45.49**	**3.46**

III) Plantation Planning

Government Rubber Plantations were raised gradually from the year 1961 in an area of 4785.70 ha. A rubber tree becomes tappable only after 7 years from the time of plantation and yield gradually reduces after the age of 35 years thereafter they are felled and fresh rubber plants are planted. Therefore, the rubber trees which

were planted originally in the year 1961 are now being felled. At present to enhance productivity, high-yielding clones such as RRII 430 are being used for replanting.

It is expected that the profitability of the Corporation will increase by the time all the works of replantation are completed in the areas where trees are gradually being felled and newly planted trees become tappable.

IV) Total staff strength of the Corporation

The total sanctioned strength of officers & staff of Arasu Rubber Corporation Limited is 200. However, the present strength is 76. Out of this, 12 are working on deputation from the Forest department and 64 are Corporation employees.

V) Total Number of permanent workers in Arasu Rubber Corporation

There are 423 Tappers, 113 Field workers, 39 Factory workers and 17 Supervisors working as

permanent workers. Apart from this, employment is also provided to about 300 people on casual basis depending upon the need. Apart from wages, the workers are also paid production incentives (only for those exceeding the standard output), rainy day allowance, EPF contribution, annual bonus, and other statutory benefits. The workers are also provided with additional facilities like rent-free accommodation, uniforms, ambulance and other medical facilities. Also, the workers are given bed sheets and an umbrella every year as per the provision in the Plantation Labour Act and Factories Act.

VI) Annual Total Expenditure for staff and workers for 2024-25 (Approximate)

i) Approximate Expenditure (staff) - Rs.923.27 lakh (per Annum)

ii) Approximate Expenditure (workers) - Rs.1930.23 lakh (per Annum)

15. HIGHLIGHTS OF THE YEAR 2023-24

15.1. Artificial Intelligence Surveillance system

India's first Artificial Intelligence enabled automatic alert system has been implemented by the department to prevent elephant deaths on railway tracks due to accidental collusion with trains. The project has been implemented at Madukkarai at a cost of Rupees 7.24 crores.

15.2. Slender Loris Conservation Centre

To protect the endangered Slender loris, an area of 11,806.56 ha in 7 blocks in Karur and Dindigul districts has been notified as Kadavur Slender Loris Sanctuary. It is the first sanctuary for Slender Loris in the country, which will

strengthen the immediate conservation of the species by habitat improvement and mitigation of threats. A conservation centre has been sanctioned at a cost of to strengthen awareness creation during 2023-24.

15.3. Modernization of Forest Force

35 No. of All-terrain vehicles were procured under the above scheme. In addition to those, 9 more vehicles have been purchased for patrolling, protection, and immediate response to Human wild life conflict issues.

15.4. Thanthai Periyar Wildlife Sanctuary.

A contiguous stretch of protected forests is essential to protect endangered wildlife. During the Budget Speech for the year 2023-24, the Government has announced to notify a new wildlife sanctuary "Thanthai Periyar Wildlife Sanctuary" with an extent of 80,567 hectares in the forest

areas of Anthiyur as 18th wildlife Sanctuary in the State.

15.5. Setting up of Tamil Nadu Forest and Wildlife Crime Control Bureau

Considering the necessity to conserve the rich biodiversity of Tamil Nadu and prevent illegal forest and wildlife trade at State level, "Tamil Nadu Forest and Wildlife Crime Control Bureau" has been set up with four Zonal offices at Chennai, Coimbatore, Madurai and Ramanathapuram

15.6 Project Nilgiri Tahr

Project Nilgiri Tahr was sanctioned at a cost of 25.13 crores over a period of 5 years to protect the endangered Nilgiri Tahr. The project is in implementation mode. Synchronised survey to estimate population of Nilgiri Tahr has been conducted in Kerala and Tamilnadu part of Western Ghats .

15.7. Pallikaranai Marsh Land:

Government had accorded administrative approval for an amount of Rs 47 Cr. towards constructions of 10.232 km length see-through barrier to protect Pallikaranai Marsh Land and released Rs 1.00 Cr to carry works for protection of Pallikaranai Marsh Land for the year 2023-24. This scheme will be continued during 2024-25.

15.8. Turtle Conservation Centre at Guindy National Park, Chennai

A Turtle Conservation and Rehabilitation centre will be set up in Chennai to boost turtle conservation efforts. This centre will have State-of-the-Art facility for promoting conservation efforts.

15.9. Upgradation of Kurumpatti Zoological Park, Salem as Medium Zoo

The Government had released a sum of Rs 1.29 Crores against the sanctioned Rs 8.00 to "upgrade Kurumbapatti Zoological Park, Salem as

Medium Zoo" by providing essential facilities like shelters, medical facilities, food storage room, interpretation centre and walking trails during 2023-2024. The remaining budget Rs 6.71 Crores will be released during 2024-2025.

15.10. Eco-Park on Pallikaranai Marsh Land

The Pallikaranai Eco park was established and inaugurated by the Honourable Chief Minster of Tamil Nadu during December 2021. During the year 2023-2024, the Govt. had sanctioned Rs 56.56 lakhs to carry out the maintenance works at Eco-Park in Pallikaranai Marsh Land.

15.11. Augmenting drinking water supply to wildlife

The Government sanctioned a sum of Rs 3.71 Crore for augmenting drinking water supply to wildlife in the Forest and protected areas through motors energized by solar power. During 2022-23 & 2023-24, these have been erected at 29 places.

15.12. Re-modelling of Guindy Children's Park

Guindy Children's Park has been remodeled as Guindy Nature's Park at a cost of Rs.20 crores and the inauguration will be done during 2024-25.

15.13 Upgradation of Elephant Camps

Government of Tamil Nadu is a pioneer in elephant conservation. Two elephant camps at Kozhikamuti and Theppakadu are one of the oldest and well-maintained centres in India. Under the leadership of Hon'ble Chief Minister these camps are being upgraded at a cost of Rs.13 crores.

15.14 Establishment of Mahout Villages

Mahouts and Cavadis are the backbone of Tamil Nadu's elephant conservation programmes. They dedicate their entire life towards care of elephants. Government of Tamil Nadu is constructing culturally compatible houses for the

91 Mahouts and Cavadis at a cost of Rupees 9.1 crores.

15.15 Notable achievements

- Gulf of Mannar Biosphere Reserve received Michel Batisse Award 2023 from UNESCO for case study in Man and Biosphere Programme (MAB).
- Tamil Nadu State Bird Authority has been constituted to ensure integrated development of bird sanctuaries and conservation of birds.
- Tamil Nadu Power Fence (Registration & Regulation) Rules notified under Sub-Section (1) of Section 64 of the Wildlife (Protection) Act 1972 during July 2023.
- First ever in Tamil Nadu, an Elephant conclave was convened successfully in

collaboration with Government of India and lead institutions.

- As per latest estimation report, Tamil Nadu has been recording steady increase in Tiger Population from 264 (2018) to 306 (2022).
- Elephant Population also has been steadily increasing from 2761 (2017) to 2961 (2023)
- Farmers-Wildlife Conflict Resolution Committee has been constituted to suggest remedial measures to address issues regarding crop raiding by wild animals.
- Synchronized (Tamil Nadu / Kerala / Karanataka) vulture survey has been conducted on 30th & 31st December 2023.
- Record number of Olive Ridley Hatchlings were released to Sea during this season.2,15,778 hatchlngs were released due to the efforts taken by department in eight coastal districts.

15.16. TBGPRCCR

The following ecosystem-based Climate Change measures were undertaken

a) Improvement of Marine Ecosystems

Ecosystem-based habitat and species recovery plans including Coral, Seagrass, Dugong and Sea turtle are being undertaken at an outlay of Rs.273.24 lakh to achieve a holistic rejuvenation and management of Tamil Nadu Coast and Marine ecosystems.

b) Improvement of Land Ecosystems

- Raising and planting 68.40 lakh seedlings in farmlands, institutional lands and community lands in 38 districts with an outlay of Rs.5138.64 lakh under Urban and Peri-Urban Forestry
- Procurement of 256 e-bikes at a cost of Rs. 322.07 lakh for the use of frontline

staff as a first step to positively address the climate change mitigation

- Removal of Invasive Alien Species and planting with indigenous species over 600 ha. at an outlay of Rs.308.97 lakh to prevent the degradation of natural habitats
- Restoration of Muthupet mangroves at Tiruvarur over an area of 700 ha. at an outlay of Rs.200.44 lakh

c) Research and implementation of climate change measures

- Spectrum of identified research activities such as wildlife forensic technology, wildlife disease diagnostic technology were carried out at Advanced Institute of Wildlife Conservation (Research, Training & Education), Vandalur for Rs.256.60 lakh to

adapt to changing challenges and imperatives in in-situ and ex-situ research.

15.17. Human-Wildlife Conflict measures

Following multi-pronged strategies have been adapted to manage the problem of human-wildlife conflicts.

- Construction of 34 borewells with solar pumps to augment pinch period water availability for wild animals,
- Digging Elephant Proof Trenches (EPT) over a stretch of 38 km to secure the livelihood of tribal communities through barriers around the tribal settlement,
- Construction of 7 watch towers equipped with thermal camera at vantage points besides organizing Anti-poaching camps,
- Restoration of fodder grasses to improve wildlife habitats by restoring original

vegetation and reducing human-wildlife conflict due to the availability of fodder species,

formation of 55 Anti–depredation committees to drive away problematic animals were undertaken at a cost of Rs 1097.52 Lakhs

15.18. Promoting supply chain development

- Establishment of 5 Forest Utilization Units, e-platform for Market intelligence of Timbers to improve the sale of agroforestry produce and establishment of 16 Hi-tech nurseries at a total cost of Rs.273.91 lakh to guide farmers through market intelligence, fair price or a platform to sell their produces.

15.19. Livelihood improvement activities

Eco-Tourism activities were taken up to strengthen biodiversity conservation and to provide the best

Eco-Tourism services at an outlay of Rs.1066.36 lakh in four circuits viz., Kurumbapatti – Yercaud, Aiyur - Denkanikottai – Hogenakkal waterfalls,Kollimalai – Medicianal Plant Conservation Area – Akash Ganga waterfalls andYelagiri – Amirthi – Jamunamarathur – Beeman water fall – Kular cave and also in Genepool Garden in Western Ghats. Livelihood improvement activities have been undertaken in 155 tribal villages in Eastern Ghats through formation of Eco-development committees with an outlay of Rs.761.40 lakh for the holistic development of tribal living in inaccessible areas

15.20 Management capacity development

- Construction of 40 Nos. of residential quarters at a cost of Rs.629.69 lakhs and providing 60 utility vehicles for Circle level Officers and Field officers at a cost of Rs.695.37 lakh to afford proper

infrastructure and mobility to the manpower deployed in protection and management of forests and wildlife

- Procurement of Desktops, Laptops, projectors, Audio visual equipment, Digital cameras at an outlay of Rs.833.32 lakh to ensure reliable Information and Communication Technology for better e-Governance

15.21 SCHEMES FUNDED BY NABARD

1. Restoration of Degraded Forests Landscape
    - Degraded Forest Areas to an extent of 31,060 Ha have been restored in 33 Districts by planting 31,06,000 Nos of seedlings including NTFP species at a cost of Rs.48,78.067 lakhs.
2. Restoration of Sandal Landscape
    - Promoting the growth of Natural Sandalwood saplings using in-situ cultural

operations has been taken up to an extent of 292 Ha in the Eastern Ghats areas at a cost of Rs.244.056 lakhs

3. Restoration of Mangrove Landscape

- Mangrove plantations to an extent of 806 Ha have been carried out and maintained in 6 Districts at a cost of Rs.311.496 lakhs.

4. Restoration of Red Sander Landscape

- 1,20,000 Nos of Red Sander seedlings which are classified as endangered by the IUCN, have been planted in 7 Districts at a cost of Rs.190.200 lakhs.

5. Rejuvenation of Kosasthalaiyar & Araniyar river landscape

- Afforestation and soil, moisture conservation works in Kosasthalaiyar & Araniyar river landscape to an extent of 780 Ha has been taken up at a cost of

Rs.596.780 lakhs to restore the Degraded Landscape and recharge of aquifers.

6. Soil & Moisture Conservation activities

- To enhance aquifer recharge, insulate against climate change effect on vegetation and to enhance pinch period water availability to wildlife, soil and moisture conservation works have been carried out at a cost of 4598.574 lakhs as follows: -

- 666 Check dams in the Reserved Forest areas have been strengthened at a cost of Rs.780.469 lakhs.

- 322 Percolation ponds in the Reserved Forest areas have been strengthened at a cost of Rs.768.940 lakhs.

- 191 New Percolation ponds have been constructed in the Reserved Forest areas at a cost of Rs.1575.500 lakhs.

- 204 New Check Dams have been constructed in the Reserved Forest areas at a cost of Rs.1473.665 lakhs.

7. Formation / Maintenance of Central Nurseries

- 5 New Permanent Central Nurseries to produce good quality seedlings in the newly formed Districts have been established at a cost of Rs. 136.589 lakhs
- 32 Existing Central Nurseries have been strengthened to ensure production of adequate seedlings at a cost of Rs.152.560 lakhs
- In order to increase the Tree cover outside the Forest areas 39.00 lakhs seedlings were raised at a cost of Rs.1412.819 lakhs and distributed to the farmers & institutions.

8.Forest Fire Protection and Disaster Management

- For fast flow of information and coordination regarding Forest fire, a State Forest Fire control center has been established in headquarters at a cost of Rs. 77.69 lakhs.
- For efficient management and mitigation of Forest fire, District Forest Fire control centers have been established in 33 District headquarters at a cost of Rs. 628.550 lakhs.
- 45 Nos of Fire Watch Towers have been constructed in Fire-prone zones at a cost of Rs.332.503 lakhs.
- 45 Nos of Anti-Poaching centers have been established in the Reserved Forest areas at a cost of Rs.436.101 lakhs.
- 45 Nos of Field staff dormitories have been established for intense patrolling in the Reserved Forest areas at a cost of Rs.528.170 lakhs.

- Essential Fire Fighting Equipment has been procured to mitigate Forest Fire at a cost of Rs. 133.671 lakhs.
- 10 no of Transport Vehicle for transporting staff and material and water tanker for transport of water for fire-fighting have been procured at a cost of Rs. 178.416 lakhs.
- 3 meters width Fire lines have been created to a length of 1556 Km in the Reserved Forest areas at a cost of Rs. 345.583 lakhs
- 6 meters width Fire lines have been created to a length of 732 Km in the Reserved Forest areas at a cost of Rs. 271.241 lakhs
- 12 meters width Fire lines have been created in the interstate boundary to a length of 185 Km in the Reserved Forest areas at a cost of Rs. 182.858 lakhs
- 3 meters width Fire lines have been maintained to a length of 3837 Km in the

Reserved Forest areas at a cost of Rs. 315.075 lakhs

- Invasive Alien Species to an extent of 1325 Ha have been removed in the Reserved Forest areas at a cost of Rs. 633.149 lakhs.

16. CONCLUSION

Forests are essential for regulating and maintaining the natural ecosystem which in turn helps in preserving the diversity of life. Forests support floral and faunal diversity and act as an important resource providing clean water and clean air to support the existence of life on earth. These natural eco systems gain primordial importance as they provide an array of ecosystem services for communities as well as plays vital role in regulating global climate. Due to the increasing demand for forest resources and forest areas due to

urbanization, forest conservation and management has become increasingly imperative.

Forest conservation paradigms have moved from basic exploitation to biodiversity conservation, carbon sequestration, natural resource management and recreational and leisure development.

Forests are not to be considered as a source of revenue. Forests are natural renewable sources and hence they need to be properly maintained and protected. Accordingly, Government initiatives are directed towards conservation, climate change mitigation and curtailing carbon emissions to promote healthy and resilient forests for a better and sustainable planet Earth.

Dr. M. MATHIVENTHAN
MINISTER FOR FORESTS

மாண்புமிகு தமிழ்நாடு முதலமைச்சர் அவர்கள் 08.08.2023 ஆம் தேதியன்று சென்னையில் தமிழ்நாடு வனம் மற்றும் வன உயிரின குற்றங்கள் கட்டுப்பாட்டு (TNFWCCB) பிரிவினை திறந்து வைத்து, அதற்கான இலச்சினையை வெளியிட்டார்கள்.

"ஒருங்கிணைந்த யானைகள் கணக்கெடுப்பு 2023" அறிக்கை 08.08.2023 ஆம் தேதியன்று மாண்புமிகு தமிழ்நாடு முதலமைச்சர் அவர்களால் வெளியிடப்பட்டது.

தமிழ்நாடு வனத்துறையில் முதன்முறையாக 2022–2023 ஆம் ஆண்டில் சிறப்பாக பணியாற்றிய மாவட்ட வன அலுவலர்களுக்கு 03.10.2023 ஆம் தேதியன்று மாண்புமிகு தமிழ்நாடு முதலமைச்சர் அவர்களால் சிறந்த மாவட்ட வன அலுவலர் விருதுகள் வழங்கப்பட்டது.

தமிழ்நாடு வனத்தோட்டக் கழகத்தின் 2022–2023 ஆம் ஆண்டிற்கான இலாபத்தில் அரசின் பங்குத்தொகை 04–01–2024 ஆம் தேதியன்று மாண்புமிகு தமிழ்நாடு முதலமைச்சர் அவர்களிடம் வழங்கப்பட்டது.

வனத்துறையினை நவீனமாக்கும் பொருட்டு 200 மின்சார இருசக்கர வாகனங்கள், 50 பொலிரோ ஈப்புகள், 35 வன உயிரின அவசர மீட்பு வாகனங்கள் ஆகியன 13.06.2023 ஆம் தேதியன்று மாண்புமிகு தமிழ்நாடு முதலமைச்சர் அவர்களால் வழங்கப்பட்டது.

யானைகள் பாதுகாப்பினை வலியுறுத்தி கோயம்புத்தூர் மாநகரத்தில் 11.08.2023 ஆம் தேதியன்று "தமிழ்நாடு யானைகள் மாநாடு 2023" நடைபெற்றது.

கடல்சார் உயர் இலக்கு படை (Marine Elite Force) குறித்தான புத்தகத்தினை 08–03–2024 ஆம் தேதியன்று மாண்புமிகு வனத்துறை அமைச்சர் அவர்கள் வெளியிட்டார்கள்.

செங்கல்பட்டு மாவட்டம், சிறுசேரி கிராமம், சோனலூர் காப்புக்காட்டில் நகர்புற பூங்கா எழுப்ப 23–02–2024 ஆம் தேதியன்று சென்னை பெருநகர வளர்ச்சி குழுமம் மூலமாக ரூ.5.00 கோடி நிதி ஒதுக்கீடு பெறப்பட்டது.

தமிழ்நாடு வனத்துறையின் கடல்சார் உயர் இலக்கு படையினரால் மன்னார் வளைகுடா கடலோரப் பகுதிகளில் கடல் சார்ந்த குற்றங்களை தடுக்க ரோந்து பணி மேற்கொள்ளப்படுகிறது..

2022 – 23 ஆம் ஆண்டில் பசுமை தமிழ்நாடு இயக்கத்தின் மூலம்
நாமக்கல் மாவட்டத்தில் தொப்பம்பட்டி கிராமத்தில் மகாகனி
நடவு செய்யப்பட்ட தோட்டம்

2022 – 23 ஆம் ஆண்டில் கடலூர் மாவட்டம் பிச்சாவரத்தில்
தரம் குன்றிய காடுகளை அலையாத்திக் காடுகள் மூலம் சீரமைத்தல்