ENVIRONMENT, CLIMATE CHANGE AND FORESTS DEPARTMENT

FORESTS

POLICY NOTE
2021 - 2022

DEMAND No. 54

K. RAMACHANDRAN
Minister for Forests

POLICY NOTE 2021-2022

Forests Department

இருபுனலும் வாய்ந்த மலையும் வருபுனலும்

வல்லரணும் நாட்டிற்கு உறுப்பு

Rivers and oceans, mountains, rains and strong fortresses constitute a country - Saint Thiruvalluvar.

(Thirukkural No.737)

Vision Statement

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 partnership, collaboration and scientific management.

The Department will strive to empower forest officers with 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 generation.

1. Introduction

Forests provide the basic life support system to all the living entities on mother earth including mankind. Forest ecosystems provide fresh air, water resources, fertile soil and agriculture, and biodiversity among other countless benefits.

The unique geography of Tamil Nadu, which comprises of the biodiversity rich Western and the Eastern Ghats, the coastal wetlands, salt marshes, estuarine systems, mangroves, and the bio rich marine areas endow the State with rich forest biomes that are home to wide variety of wildlife. The forests and vegetation types in the Western Ghats, Eastern Ghats and the coastal plains are unique and have evolved over millions of years.

Government of Tamil Nadu is committed to enhance the forest cover in the State through afforestation, sustainable forest management including forest protection, soil and water conservation and restoration of degraded forests. The State is also deeply committed to protect and conserve its wildlife.

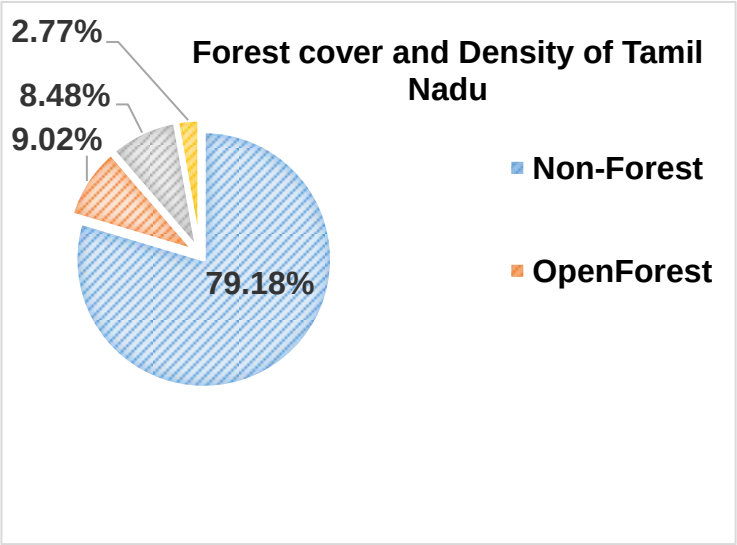
The world including India is combating unprecedented, worldwide crisis due to widespread deforestation and uncontrolled exploitation of natural resources. The need for combating forest degradation and loss of forest cover is much more needed today than ever before. The policies and programmes of the Government of Tamil Nadu shall focus on conservation of forest and wildlife through proven scientific approaches in harmony with nature.

2. Forest Wealth of Tamil Nadu

Tamil Nadu has a recorded forest area of 23,188.042 sq. km which is 17.83% of its geographical area. As per the India State of Forest Report (ISFR), 2019 (Biennial), based on the interpretation of Indian Remote Sensing (IRS) Satellite data, the Forest Cover in the State is 26,364.02 sq.km, which is 20.27% of the State's geographical area. The Tree cover in Tamil Nadu has been estimated at 4,830 sq.km assessed through sampling-based methodology. The total Forest and Tree Cover in the State is 31,194 sq.km which is 23.98% of the State's geographical area.

In terms of forest canopy density classes, the State has 3,605 sq.km of very dense forest (2.77 % of geographical area),11,030 sq.km of moderately dense forest (8.48% of geographical

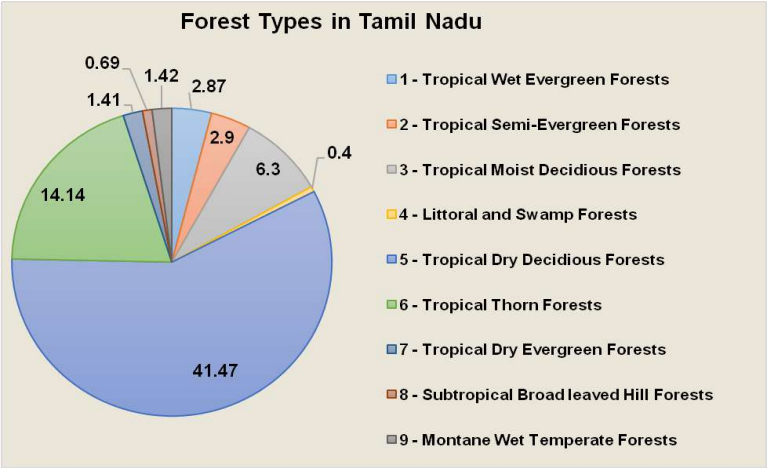
area) and 11,729 sq.km of open forest (9.02 % of geographical area).



Source: India State of Forest Report 2019

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. The distribution of Forest Types is illustrated below,



Source: India State of Forest Report 2019

Western Ghats is one of the 36 global biodiversity hotspots with 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 hosting rich mangroves and associated forest types. 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 biodiversity of Tamil Nadu's forests as envisaged in the National Wildlife Action Plan 2017-2031.

2.1 Floral diversity

The Angiosperm diversity of India includes 17,672 species. With 5640 species, Tamil Nadu ranks 1stamong all the States in the Country. This includes 533 endemic species, 230 red-listed species, 1559 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 1022 species of which Tamil Nadu has about 184 species. Tamil Nadu's wild plant diversity also includes vast number of Bryophytes, Lichens, Fungi, Algae and Bacteria.

2.2 Faunal diversity

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 conservation of forests and wildlife and in setting up Protected Areas (PA) that comprise of National Parks, Wildlife Sanctuaries, Conservation Reserves and Community Reserves. Additionally, five Tiger Reserves have been constituted for protecting tiger as an umbrella species giving thrust for conserving forests and wildlife. It is a matter of pride that Tamil Nadu has 30.92% (7,073 sq. km) of forest area as Protected Area, as against the mandate of 25 % envisaged in the National Wildlife Action Plan 1988.

Details of National Parks, Sanctuaries, Bird Sanctuaries, Conservation Reserves, Tiger

Reserves, Elephant Reserves and Biosphere Reserves are as follows.

2.3 National Parks

National Parks are notified under Sec 35 of the Wildlife (Protection) Act, 1972 as an area which needs to be protected by reason of its ecological, faunal, floral, geomorphological, or zoological significance. The Government have notified the following 5 National Parks in the State, known for their ecological, geomorphological and natural significance.

Sl. No	Name of the National Park	Extent (in ha)	District (s)	Year of notification
1	Gulf of Mannar Marine Park	52,602.00	Ramanathapuram & Tuticorin, Tirunelveli and Kanyakumari	1986
2	Indira Gandhi National Park	11,710.00	Coimbatore	1989

Sl. No	Name of the National Park	Extent (in ha)	District (s)	Year of notification
3	Guindy National Park	270.57	Chennai	1978
4	Mukurthi National Park	7,846.00	Nilgiris	2001
5	Mudumalai National Park	10,323.00	Nilgiris	2005

2.4 Wildlife Sanctuaries

Wildlife sanctuaries are areas notified under Sec 18 and 26A of Wildlife (Protection) Act 1972 owing to their ecological, faunal, floral, geomorphological, natural or zoological significance. These areas are notified for the purpose of protecting, propagating or developing 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
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 Giant Squirrel Wildlife Sanctuary	48,520.00	Virudhunagar	1988

Sl. No	Name of Wildlife Sanctuary	Extent (in ha)	Districts	Year of Notification
8	Kanyakumari Wildlife Sanctuary	40,239.55	Kanyakumari	2007
9	Sathyamangalam Wildlife Sanctuary	141,160.94	Erode	2008
10	Megamalai Wildlife Sanctuary	26,910.81	Theni and Madurai	2009
11	Point Calimere Wildlife Sanctuary, Block A&B	12,407.27	Thanjavur, Tiruvarur Nagapattinam	2013
12	Kodaikanal Wildlife Sanctuary	60,895.482	Dindigul and Theni	2013
13	Gangaikondan Spotted Deer Sanctuary	288.40	Tirunelveli	2013

Sl. No	Name of Wildlife Sanctuary	Extent (in ha)	Districts	Year of Notification
14	Cauvery North Wildlife Sanctuary	50,433.48	Krishnagiri	2014
15	Nellai Wildlife Sanctuary	35,673.33	Tenkasi	2015

2.5 Bird Sanctuaries

The State of Tamil Nadu is well known globally for attracting large number of migratory birds. Every year migratory birds from different parts of the world, flock to various ponds and lakes in Tamil Nadu as they find the best ecological conditions and habitats for feeding, breeding and raising their young. Tamil Nadu State notified Vedanthangal Bird Sanctuary way back in 1936, which is the first Bird Sanctuary in India. Tamil Nadu Government has notified 15 Bird Sanctuaries as below.

Sl. No	Name of Bird Sanctuary	Extent (in ha)	Districts	Year of Notifica--tion
1	Vettangudi Bird Sanctuary	38.40	Sivaganga	1977
2	Pulicat Lake Bird Sanctuary	15,367	Tiruvallur	1980
3	Karikili Bird Sanctuary	61.21	Kancheepuram	1989
4	Kanjirankulam Bird Sanctuary	104.00	Ramanathapuram	1989
5	Chitrangudi Bird Sanctuary	47.63	Ramanathapuram	1989
6	Koonthankulam-Kadankulam Bird Sanctuary	129.00	Tirunelveli	1994
7	Vellode Bird Sanctuary	77.18	Erode	1997
8	Vedanthangal Bird Sanctuary	30.00	Kancheepuram	1936
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	2000

Sl. No.	Name of Bird Sanctuary	Extent (in ha)	Districts	Year of Notifica - -tion
13	Theerthangal Bird Sanctury	29.29	Ramanathapuram	2010
14	Sakkarakottai Tank Bird Sanctuary	230.49	Ramanathapuram	2012
15	Oussudu Lake Bird Sanctuary	331.785	Villupuram	2015

2.6 Conservation Reserves

Conservation Reserves are legally Protected Areas for conservation of floral and faunal species. These areas are declared as Conservation Reserve in consultation with local communities. The State Government notified the following two Conservation Reserves under Sec 36A of the Wildlife Protection Act, 1972.

Sl. No	Name of Conservation Reserve	Extent (in ha)	District	Year of Notification
1	Thiruppudaimaruthur Birds Conservation Reserve	2.84	Tirunelveli	2005
2	Suchindrum-Theroor –Managudi Conservation Reserve	484.77	Kanniyakumari	2015

2.7 Tiger Reserves

The "Project Tiger" was launched in April,1973 with the objective to ensure 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 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	895.00	706.542	1,601.542
2	Anamalai Tiger Reserve	Coimbatore and Tiruppur Districts	958.59	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

2.8 Elephant Reserves

Project Elephant was launched by Government of India in 1992 with the objective to protect elephants and their habitat. The key objective of the Project Elephant is to protect elephant corridors and elephant habitat for the survival of elephant population in the wild. For the purpose of habitat and corridor management and based on spatial distribution of elephant movements, Elephant Reserves are notified encompassing two or more Districts and States. The Government of India has notified the following 4 Elephant Reserves in Tamil Nadu.

Sl. No	Name of Reserve	District(s)	Area in ha
1	Nilgiris – Eastern Ghat (Nilgiri Elephant Reserve)	Nilgiris, Erode, Dharmapuri Krishnagiri	4,66,245

Sl. No	Name of Reserve	District(s)	Area in ha
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

2.9 Biosphere Reserves

Biosphere Reserves are sites established by countries and recognized under UNESCO's Man and the Biosphere (MAB) Programme to promote sustainable development based on local community efforts and sound science. The programme of Biosphere Reserve was initiated by UNESCO in 1971. 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.

Tamil Nadu has three Biosphere Reserves as detailed below,

S. No	Name of Reserve	District(s)	Area in ha
1	Nilgiris Biosphere Reserve	The Nilgiris	2,53,800
2	Gulf of Mannar Biosphere Reserve	Ramanathapuram, Thoothukudi, Tirunelveli and Kanniyakumari Districts	10,50,000
3	Agasthiyarmalai Biosphere Reserve	Kanniyakumari, Tenkasi and Tirunelveli Districts	1,67,236

3. Forest Policy and Legal Framework

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

As per the Indian Constitution, the directive principles assign duties to the State and all citizens through Article 48 A and Article 51A (g). Article 48A states –

> "State shall endeavour to protect and improve the environment and to safeguard the forests and wildlife in the country" and

Article 51A (g) states –

> “to protect and improve the natural environment including forests, lakes, rivers and wildlife and to have compassion for living creatures".

The policies and measures enshrined in the National Forest Policy, 1988, Wildlife (Protection) Act, 1972, State Forest Policy, 2018, Eco-tourism Policy, 2017, State Action Plan on Climate Change (SAPCC) and Sustainable Development Goals (SDGs) have all been kept in view while evolving the schemes and strategies for sustainable management of forests. The State envisages revising and upscaling the State Forest Policy 2018 and Eco-tourism Policy 2017, in tune with the current practices and changing global and national environmental scenario.

3.1 National Forest Policy, 1988

The National Forest Policy, 1988 principally aims to ensure environmental stability and maintenance of ecological balance that is vital for sustenance of all lifeforms and to achieve this aim by bringing at least one third of land area under forest and tree cover. It also aims to maintain two-third of the area in hills and mountainous regions under such cover in order to prevent erosion and land degradation and to ensure the stability of the fragile eco-system

3.2 State Forest Policy, 2018

The State Forest Policy 2018 aims for strict enforcement of forest laws, restoration of degraded forests, improving water harvesting potential of all forest catchments, strengthening

of Protected Areas, acquisition of wildlife corridors and extension of wildlife habitats.

It also provides for voluntary relocation of forest dwellers and for keeping the wildlife habitats inviolate. Protection of wetlands, mitigating / adapting climate change through enhancing tree cover, building a strong forestry extension service and utilising rich traditional knowledge of the tribal communities are also important components of the Forest Policy.

3.3 Acts and Rules

Important Acts and Rules for protection and management of forests in Tamil Nadu are listed as below:

Acts

- Tamil Nadu Forest Act, 1882
- Tamil Nadu (Preservation of Private Forest) Act, 1949
- Tamil Nadu Hill Areas (Preservation of Trees) Act, 1955
- Wildlife (Protection) Act, 1972
- Forest (Conservation) Act, 1980
- Tamil Nadu Rosewood Trees (Conservation) Act, 1994
- The Biological Diversity Act 2002

Rules

- Tamil Nadu Sandalwood Transit Rules, 1967

- Tamil Nadu Timber Transit Rules, 1968
- Tamil Nadu Sandalwood Possession Rules, 1970
- Tamil Nadu Maintenance of Accounts in respect of Scheduled Timber for Industrial or Commercial Purposes Rules, 1988
- Tamil Nadu Patta Sandalwood Rules, 2008
- Tamil Nadu Regulation of Wood Based Industries Rules, 2010
- Wetlands (Conservation and Management) Rules, 2017
- Tamil Nadu Forest and Wildlife Areas (Regulation of Trekking) Rules, 2018

3.4 Sustainable Development Goals (SDGs)

Seventeen Sustainable Development Goals (SDG) and 169 targets were announced by the United Nations central UN platform at the United Nations

Conference on Sustainable Development in Rio de Janeiro in 2012. They are integrated, indivisible and balance the three dimensions of sustainable development: the economic, social, and environmental. Twenty-five specific targets have been identified for priority implementation by the Ministry of Environment, Forests and Climate Change (MoEF&CC). Whereas the 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) and Goal 13 (Climate Action) have domain that overlap with the forest and wildlife sectors.

SDG 14 aims to promote the use of our ocean resources sustainably and aims to protect the marine and coastal ecosystems from pollution and ocean acidification. Conservation of mangroves, coral reefs, marine biodiversity and management

of wetlands are major schemes implemented by this Department towards achieving this goal.

SDG 15 aims for Conservation, restoration and sustainable use of terrestrial and inland freshwater ecosystems and their services. Forests, wetlands, mountains and dry lands are the targets identified under this goal. Increasing trees outside forests, Improvement and protection of forest cover in forest areas, Restoration of degraded forest areas, Protection of biodiversity on land and water, Catchment Area Management, Removal of invasive alien species and Conservation of genetic diversity are the major schemes towards achieving this goal.

State Government is committed to achieve the SDG Targets by effectively implementing various schemes and ongoing programmes from 2021 to 2030.

3.5 National Working Plan Code

Working Plan is a management document of a forest division, which largely deals with the present state of forests and outcomes of the past management and proposal of future management on a sustainable basis. It is generally written for a period of 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".* 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.

4. Statutory Bodies for Forest and Wildlife Management

4.1 Tamil Nadu State Biodiversity Board

Tamil Nadu State Biodiversity Board was constituted in 2008 to manage the biodiversity resources of the State, promote access to biodiversity resources and ensure equitable sharing. The Tamil Nadu Biodiversity Board (TNBB) is guided by the following.

1. Biological Diversity Act, 2002,
2. Biological Diversity Rules, 2004,
3. Tamil Nadu Biological Diversity Rules, 2017

4. Guidelines on Access to Biological Resources and Associated Knowledge and Benefits Sharing Regulations, 2014.

The State has constituted 13,604 Biodiversity Management Committees (BMCs) in all local bodies. The State has constituted BMCs in 13,604 local bodies out of 13,610 including 12,524 Village Panchayats, 385 Rural Blocks, 31 Districts and 664 Urban Local Bodies (ULB). The BMCs are responsible for conservation and sustainable utilization of bioresources within its area of jurisdiction. They are also responsible for preparation of the People's Biodiversity Registers (PBRs) for their area which will become the basis for equitable sharing of benefits under the 'Access and Benefit Sharing (ABS)' principle., PBRs are prepared for the 12,524 Village Panchayats, 385 Rural Blocks, 31 Districts and 664 Urban Local bodies. The validations of PBRs are in progress.

4.2 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 Honourable Chief Minister of Tamil Nadu. The Board comprises 3 members from Legislative Assembly, 14 official members and 13 non-official members. The Board advises the State Government in formulation of policies and guidelines for protection and conservation of the wildlife and specified plants. It also advises the Government on various measures for protection and conservation of wildlife.

4.3 Zoo Authority of Tamil Nadu

Zoo Authority of Tamil Nadu was constituted by the Government of Tamil Nadu in 2005. It

functions under the Chairmanship of the Honourable Chief Minister to facilitate the development of zoos, with direct access to the funds and grants from the Central Zoo Authority, Central Government, State Government and other agencies.

4.4 Tamil Nadu State Wetland Authority (TNSWA)

The Tamil Nadu State Wetland Authority (TNSWA) was established under the Wetland (Conservation and Management) Rules, 2017 and is mandated with the task of policy development, implementing regulatory functions, capacity building, research networking, communications, awareness and raising funds for wetland management.

Tamil Nadu has both inland and coastal wetlands (natural and manmade). There are 42,978 number of wetlands with a total area of 9,02,534 hectares (Source: National Wetland Inventory & Assessment [NWIA]).

Following programmes are being carried out by the Tamil Nadu State Wetland Authority (TNSWA):

1. Preparation of the Integrated Wetland Management Plan

2. Identification of Wetlands of International Importance in Tamil Nadu and submission of proposals as per the Guidelines of the Ministry of Environment, Forest and Climate Change, Govt of India.

3. Preparation of Health cards for the identified Wetlands in Tamil Nadu.

4. Awareness and education programmes to public on the importance of Wetlands and Water.

As on date, the brief document is prepared for 141 wetlands by Salim Ali Centre for Ornithology and Natural History (SACON). Currently, zone of influence studies for 3 wetlands are being studied. The ecosystem services of 141 wetlands are being documented.

The MoEF&CC, Government of India, in partnership with Indo-German Technical Corporation (GIZ) is implementing a Technical Cooperation project "Wetlands Management for Biodiversity and Climate Protection" with funding support from the German Federal Ministry for the

Environment, Nature Conservation and Nuclear Safety under the International Climate Initiative. In Tamil Nadu, the project is implemented at Point Calimere Ramsar site from September 2018 to August 2022.

4.5 Conservation Authority of Pallikaranai marshland

The Conservation Authority of Pallikaranai marshland was constituted for the effective management and utilization of funds/ financial assistance released by State / Central Governments. The Authority has been formed for coordinated approach with various departments like, Finance Department, Environment, Tourism, Chennai Metropolitan Water Supply and Sewerage Board and Public Works Department. It functions as an apex technical advisory body for the

marshland in jurisdiction of Chennai, Kancheepuram and Tiruvallur Revenue Districts

4.6 Compensatory Afforestation Fund Management and Planning Authority (CAMPA)

Tamil Nadu Compensatory Afforestation Fund Management and Planning Authority, (Tamil Nadu State CAMPA) is a statuary authority formed under the Compensatory Afforestation Fund Act, 2016 and the Compensatory Afforestation Rules, 2018. It is instrumental for accelerating activities for preservation of natural forests, effective management and monitoring of wildlife, infrastructure development in the sector and other allied works in the State. The Governing Body of the Authority is chaired by the Honourable Chief Minister.

This Authority functions as an institutional body to mitigate the impact of diversion of forest land for non-forest purposes and by making sure, that the funds are released and utilized quickly, efficiently and transparently.

5. Management of Forests

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. To meet the social, protection and production demand, 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

5.1 Forest Protection

Forest wealth of the State is under threat due to illicit felling of trees, fire occurrence, encroachment of forest lands, illicit removal of sand and resources, poaching of wild animals etc., To ensure protection of forest resources and enhance biodiversity, Tamil Nadu Forest Department envisages the following strategies:

1. Strengthen Forest Protection through recruiting frontline staff and providing

specialized training to enhance highly specialised knowledge and capacity.

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

3. Improve intelligence gathering and co-ordination with other enforcement agencies.

4. 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.

5. Develop surveillance system with advanced technologies.

6. Strengthen marine ecosystem protection.

The forest fires are the biggest challenges 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 fire are more and far reaching. The State's forests are also prone to frequent forest fires due to various anthropogenic factors.

5.1.1 Strengthening of Forest Protection

As on date 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 112 Forest Check Posts with surveillance facilities.

In order to ensure protection of forest resources and conserve biodiversity, the Tamil Nadu Forest Department envisages the following strategies:

1. Recruitment of frontline staff
2. Strengthening infrastructure for Forest protection
3. Intelligence gathering
4. Forest consolidation

5.1.2 Forest fire control

Forest fires cause wide ranging economic and ecological impacts which may vary from local to global levels. It has a direct impact on life, property and biodiversity, reduction in forest cover including wildlife habitats; degradation of catchment areas; increase in greenhouse gases resulting in global warming and depletion of carbon sinks.

In order to prevent and control forest fire, following strategies are being followed in the State

- Fire alert systems from National Remote Sensing Centre and Forest Survey of India
- Dedicated Toll-free Telephone Number to receive information on forest fire
- Wireless and communication network
- Creation and maintenance of fire lines
- Controlled burning
- Infrastructure such as watch towers, water hydrant structures and vehicles
- Strategic deployment of manpower, improving capabilities, providing firefighting equipment, strengthening Rapid Response Teams and Forest Elite Force
- Regular patrolling
- Training and capacity building for field staff

- Awareness creation among public, signages and providing incentives for fire protection through public participation
- Modern tools and technologies such as drones, thermal imaging cameras, e-surveillance etc.,

5.2 Forest Conservation

5.2.1 Conservation of forest biodiversity and genetic resources

Wildlife health is the ability of species to cope with biological, social and environmental changes. Keeping in mind ecological requirements and landscape specific intervention measures, a special focus on Biodiversity Conservation at landscape level is being attempted and encouraged. The removal of invasive species (Lantana, Prosopis, Wattle, etc.,) has a great impact on restoration of ecosystem such as

increasing the area with native floral vegetation, regeneration and growth of indigenous plants, increase in fodder area availability for wildlife, rich biodiversity of forest areas, improvement in wildlife habitat by restoring original vegetation and reduction in human wildlife conflict due to higher availability of fodder species. The State shall bring out a Policy Framework on removal and management of invasive species in forest areas. Augmentation of drinking water through natural water holes as well as by artificial means is also being done for the benefit of wildlife.

Recognizing the seriousness of human-wildlife conflict situation on the forest fringe areas, multi-pronged strategies have been devised to mitigate the problem of human-wildlife conflicts as given below:

- Monitoring of wildlife habitats to ensure availability of water and enhance fodder resources.
- Continuous monitoring of movement of wildlife in conflict zones through Early Warning System (EWS) for alerting people.
- Sensitizing local inhabitants.
- Payment of compensation amount to victims.
- Developing protocols for the rescue and rehabilitation of wildlife straying out of forest areas.
- Strengthening veterinary services for wildlife through Rapid Response Team and Mobile Veterinary Units.

Infectious diseases are a concern for the conservation of wildlife species. Vaccination programmes for domestic cattle in forest fringe villages and enclave villages are periodically done in coordination with Animal Husbandry and Veterinary Department.

5.2.2 Conservation and Management of Coastal Ecosystems

The coastline of Tamil Nadu has a length of about 1,076 km and constitutes about 15% of the total coastal length of India and stretches along Bay of Bengal, Arabian Sea and Indian Ocean. Coastal zone is a dynamic area with many cyclic processes owing to a variety of resources and habitats. Coastal plains and seas include the most taxonomically rich and productive ecosystems in the country. Tamil Nadu coast is also endowed with varied coastal habitats like mangroves,

corals, seaweeds, sea grass beds, salt marshes, mudflats, sand dunes etc., Considering the importance and fragility of coastal ecosystem, the Department is implementing focused schemes for managing mangrove forests, wetlands and the Marine National Park.

As per the ISFR, 2019, mangrove cover of Tamil Nadu is 49 sq. km and is 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 Tsunami, cyclones, tidal surges and floods.

The Gulf of Mannar Biosphere Reserve and Gulf of Mannar Marine National Park are implementing projects / schemes to conserve its significant assemblage of coastal biodiversity and to

demonstrate, in a large biosphere reserve with various multiple uses, how to integrate biodiversity conservation, sustainable coastal zone management and livelihood development.

5.3 Restoration of degraded forests

The United Nations General Assembly has proclaimed this decade (2021 to 2030) as "Decade on Ecosystem Restoration" with the aim to halt the degradation of ecosystems and restore them to achieve global goals.

Only with healthy ecosystems we can enhance people's livelihoods, counteract climate change, and stop the collapse of biodiversity.

Forest land degradation affects rural economy and our ability to combat climate change. It is also adversely impacting India's targets to reduce

greenhouse gas emissions according to the Nationally Determined Contributions (NDC) under the United Nations Framework on Convention on Climate Change (UNFCCC).

Agricultural productivity is heavily dependent on soil fertility and availability of water. An important ecosystem service provided by the forest is to prevent soil erosion and regulate water supply. The health of our forest ecosystems has an impact on other sectors such as agriculture, energy, tourism and health. Various schemes and programmes of the Department are aimed at restoring the degraded forests.

A comprehensive scheme for 'Restoration of degraded forest landscape' with community participation is proposed to be implemented with the financial assistance from NABARD.

5.4 Climate change Mitigation and Adaptation

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

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 216.78 million ton (794.86 million ton of CO^2 equivalent) which is 3.04% of total forest carbon of the country. (Source: ISFR, 2019)

5.5 Forest Hydrology and integrated watershed management

Forest Hydrology and integrated watershed management refers to the conservation, regeneration and the judicious use of all natural resources like land, water, plants, animals and human beings 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 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 bunding, 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.

5.6 Welfare of Tribal and other forest fringe communities

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 centred 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.

- providing school education to tribal children through 20 tribal schools being run by Forest Department

- skill development of tribals for alternative livelihoods

- facilitating employment opportunities for tribal communities with private companies for providing employment opportunities to tribal youth.

5.7 Ecotourism

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 that not only helps to preserve the natural heritage but also helps to create jobs and promote the local culture and heritage. The Ecotourism policy 2018 shall be reviewed and updated to preserve the natural heritage, promote local culture and heritage and responsible tourism. The Ecotourism policy framework shall mandate use of sustainable and appropriate tourism Guidelines with sharing of resources with the local community.

5.8 Forest Research

Forest research in Tamil Nadu commenced in 1918 and the first Annual Research Report was published in 1919. Since then, research activities are mainly focused on various thrust areas based

on field requirements from time to time. Research Unit in Chennai formed much before Independence had carried out Research in the cultivation of important trees like Teak, Jack, *Terminalia tomentosa, Terminalia paniculata, Dalbergia latifolia, Gmelina arborea*, etc.,

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

With a view to increase availability of high-quality planting material of economically important tree species for afforestation and reforestation of degraded forest and take up large scale tree cultivation in private lands, the research wing has

established seed production areas, clonal seed orchards, 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*, *Casuarina* has been standardized and propagules are being given.

6. Ongoing Schemes and Programmes

Tamil Nadu Forest Department has embarked upon the following programmes / schemes in order to achieve its policy initiatives, SDGs and Key Result Areas.

6.1 Major State Schemes

6.1.1 Tamil Nadu Biodiversity Conservation and Greening Project

Tamil Nadu Biodiversity Conservation and Greening Project (TBGP) aided by Japan International Co-operation Agency (JICA) with an expenditure of Rs.512.78 crore (including establishment) was implemented from 2011 – 2012 to 2018 – 2019. Biodiversity Conservation Project and Tree Cultivation on Private Lands were major components of this project. Based on the impactful outcomes, JICA has chosen TN as one of the preferred states in India to continue programmes and holistic forest and biodiversity development. Based on several interactions between the TNFD and the JICA during the past few months, JICA has given in -principal approval for Phase - II of Tamil Nadu Biodiversity

Conservation and Greening Project (TBGP), at the cost of Rs.920.56 crore for a period of 6 years from 2020-21 to 2025-2026. This scheme is one of the key programmes for achieving SDGs.14 (life below water) and 15 (life on land).

6.1.2 Teak Plantations

The scheme of Raising Teak plantations, over an area of 6,000 ha, was approved for a period of 8 years from 2017-2018 at a total financial outlay of Rs.52.64 crore. An extent of 4,745 ha (9,49,000 seedlings) has been planted till 2020-2021 at a total cost of Rs.24.05 crores.

6.1.3 Sandalwood Plantations

In Tamil Nadu, Jawadhi Hills, Shervaroyan Hills, Kolli Hills, Pachamalai hills and Chitheri hills are the traditional sandalwood bearing areas. The scheme of Raising of Sandal Plantations in

Reserve Forests for a period of 10 years from 2015-2016 to 2024-2025 with a financial outlay of Rs.100 crore was sanctioned in order to enhance the growing stock of sandal in traditional sandalwood areas. This scheme was implemented till 2017 – 2018. Approximately 7.10 lakh seedlings were planted at a cost of Rs.8.94 crores.

6.1.4 Asian Elephant depredation and mitigation measures

Human elephant conflict is one of the major conflicts in the entire Western Ghats, and Hosur Forest Division, and Dharmapuri Forest Division and parts of Eastern Ghats. Human - elephant conflict is a result of habitat loss and fragmentation. Habitat improvement activities and

maintenance of barriers such as elephant proof trenches and solar fences to prevent human-wildlife conflicts have been set up.

6.1.5 Payments for Compensation for the 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, 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,

farmers who lose their crop and properties due to wild animal attacks.

6.1.6 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 being implemented to prevent encroachments and to prevent the forest area from pollution due to the activities of rapid urbanisation, at a cost of Rs.25.00 crore. Construction of compound wall to a length of 23.10 km and bio-fencing to a length of 141 km is completed at the cost of Rs. 18.40 crores.

6.1.7 Improvement of Arignar Anna Zoological Park, (AAZP) Vandalur

Arignar Anna Zoological Park, established in the year 1855, is the oldest zoo in India. Spread over an area of 602 hectares of land, it is one of the largest zoos in South-East Asia that houses animals in naturalistic enclosures simulating their natural habitat. A modern and scientifically managed zoo and an institutional member of the World Association for Zoos and Aquariums (WAZA), it has 2,382 wild animals, which includes 47 species of mammals, 97 species of birds 38 species of reptiles out of 182 species.

Arignar Anna Zoological Park has emerged as a successful platform for ex-situ conservation and captive breeding centre of excellence for many endangered species. Recognizing this potential, the Central Zoo Authority has designated AAZP as

Coordinating Breeding Centre for Lion Tailed Macaque, Nilgiri Langur, Nilgiri Tahr and a participating zoo in the breeding of tigers, Indian gaur, Indian giant squirrel, and wild dogs.

6.1.8 Improvement of Advanced Institute for Wildlife Conservation (AIWC)

Advanced Institute for Wildlife Conservation (Research Training and Education) was established with the objective to infuse scientific knowledge in wildlife protection and law enforcement to bolster conservation efforts of the state. The Institute has established three functional centres, namely, the Centre for Wildlife Forensics, Centre for Animal care sciences and Centre for Conservation Education with an initial outlay of Rs.7.31 crores. An International Researchers Hostel is under construction in the Institute campus to strengthen residential

education system to strengthen on campus facilities for wildlife related studies.

The Institute has commenced basic wildlife forensic research and diagnostic operations in Morphometry, DNA and Scat DNA laboratories under the Centre for Wildlife Forensic Sciences (CWFS). A genetic reference database of important animal species of Tamil Nadu has been created for 48 species by AIWC, including 25 mammals, 10 reptiles and 13 bird species. Morphometry laboratory of CWFS is engaged in developing reference repository of wildlife samples ranging from skulls, long bones, horns, antlers, ivory, hair samples, feathers, hide and skin samples for morphological comparative studies, to establish standards that aid in species identification.

It is proposed to strengthen functional DNA labs, morphometry lab and Animal Disease Diagnostic Lab to create State of Art facilities at the Institute to cater to the emerging challenges in the field of conservation. The Institute will be restructured to provide appropriate functional autonomy in line with the other advanced scientific centres of excellence in the country with the renewed focus on scientific capacity building of various stakeholders with its education and outreach programme.

6.1.9 Forest Ponds

Forest Ponds are constructed to harvest rainwater to replenish ground water. An amount of Rs.2.97 crores was incurred for creation of 60 ponds in Reserved Forests and Tiger Reserves areas. This scheme will be continued during 2021-2022.

6.1.10 Upgradation of Kurumbapatti Zoological Park, Salem

Kurumbapatti Zoological Park, Salem was started as Mini Park in 1981 over an area of 11.07 ha. and was subsequently extended during 2008 to an extent of 31.73 ha. Adequate infrastructures and veterinary care facilities will be provided.

6.1.11 Establishing Transit camps for Frontline and Anti-poaching Watchers (APW) in All Tiger Reserves

In Tiger Reserves of Tamil Nadu, the field staff regularly patrol vulnerable areas to have constant vigil in order to avoid any poaching incidences. The role of anti-poaching watchers and other frontline staff are very much essential in conservation and protection of precious wildlife.

Presently, about 1,100 anti-poaching watchers are working in the Tiger Reserves and adjacent forest areas. To provide basic needs for patrolling of the field staff, transit camps with basic facilities like, kitchen, dining, toilets and solar power, are very much required. The Government have accorded administrative sanction for an amount of Rs.6.00 crores for establishing the Anti-poaching Camps in four Tiger Reserves. The scheme will be extended to the fifth Tiger Reserve of Tamil Nadu, namely, the Srivilliputhur-Meghamalai Tiger Reserve in 2021 – 2022.

6.2 Shared 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.

6.2.1 Integrated Development of Wildlife Habitats

The Integrated Development of Wildlife Habitats (IDWH) is a Centrally Sponsored Scheme implemented in Wildlife Sanctuaries, Bird Sanctuaries. The activities covered under the scheme include the staff development and capacity building, wildlife research and evaluation, anti-poaching activities, wildlife veterinary care, addressing human-animal conflicts and promoting eco-tourism. The scheme was implemented with an outlay of Rs.3.81 crores for the year 2020-2021.

6.2.2 Project Tiger

The Forest Department has taken various measures to conserve Tigers and their habitats. The importance of tiger conservation lies in the

fact that the presence of this predator is an indicator of good health of an ecosystem. Government of India and State Government provide 60% and 40% financial assistance for works of non-recurring nature respectively and 50% for works of recurring nature. Habitat conservation, eco-development activities, protection, fire protection measures, improvement of water sources, tourism development, controlling human-animal conflict and improvement of infrastructure facilities are carried out under Project Tiger.

Population estimation of tigers is conducted once in 4 years as part of all India Tiger Estimation and National Tiger Conservation Authority protocol. Tiger population of the State is growing due to improved conservation and protection strategies. The All-India tiger population estimation has to be

conducted during 2022. Anamalai Tiger Reserve and Mudumalai Tiger Reserve are bio-diversity hotspots of the Western Ghats and have now earned a global elite tag in tiger conservation. The Conservation Assured Tiger Standards (CATS) status, a conservation tool for best practices and standards to manage tigers has been awarded to Mudumalai Tiger Reserve and Anamalai Tiger Reserve as a global standard tag.

Recently, in February 2021 Srivilliputhur – Megamalai Tiger Reserve in Theni and Virudhunagar Districts was notified where the scheme will be extended. A Plan of Operations with financial outlay of Rs 5.22 crores has been submitted to the National Tiger Conservation Authority for funding support for the year 2021-2022 A tiger conservation plan, under Wildlife (Protection) Act 1972 is also under progress by a

team of experts from TNFD, Global Tiger Forum (GTF), Wildlife Institute of India and the World Wildlife Fund for Nature (WWF)

6.2.3 Project Elephant

Project Elephant was launched by the Government of India in the year 1992 as a Centrally Sponsored Scheme with following objectives: -

1. to protect elephants, their habitat & corridors
2. to address issues of human-animal conflict
3. Welfare of captive elephants

Tamil Nadu is selected one among 16 States, for implementing Project Elephant, pursuing scientific management and habitat conservation of the Asian elephants. The elephant population in Tamil Nadu has been estimated as 2761 as per

Synchronised Elephant Census conducted during May 2017.The scheme also includes payment of compensation to farmers for crop damages and loss of human lives caused by human wildlife conflict and further to take necessary steps to minimize such conflicts. Efforts are made in 2021-2022 to constitute the Agasthiya Elephant Reserve in the districts of Kanyakumari, Tirunelveli and Tenkasi.

6.2.4 Conservation and Management of Nilgiris Biosphere Reserve

Nilgiris Biosphere Reserve (NBR) is India's first notified Biosphere Reserve in the Nilgiris range of Western Ghats of Southern India under the United Nation's Man and Biosphere Programme. In NBR, out of 3,300 species of flowering plants documented, 132 species are endemic. Fauna of

the Nilgiris Biosphere Reserve includes about 100 species of reptiles and amphibians, 300 species of butterflies. Out of which, 31 amphibians and 60 species of retiles are endemic to Western Ghats. The Reserve encompasses an area of 5,520 sq.km in three southern States, Karnataka, Kerala and Tamil Nadu, of which Tamil Nadu portion is 2537.6 sq.km located in Nilgiris, Erode and Coimbatore districts.

6.2.5 Conservation and Management of Mannar Biosphere Reserve

The Gulf of Mannar is one of the biologically richest coastal regions in the world. It is the first Marine Biosphere Reserve in the South and Southeast Asia. In India, the Gulf of Mannar region in Tamil Nadu is one of the four major coral reef areas. This Marine Biosphere Reserve encompasses a chain of 21 coral rich islands along

biodiversity of Gulf of Mannar Biosphere Reserve'. This ensured effective inter-sector coordination and facilitated mainstreaming of biodiversity conservation issues into the productive sector and policy development

The Trust through eco development committees created microfinance Corpus fund for enhancing livelihood of coastal communities, especially for fishermen as a reciprocal gesture for their support in Biosphere Reserve conservation. An amount of Rs.1.50 crores was spent for the Annual Work Plan.

6.2.6 Conservation and Management of Agasthiyarmalai Biosphere Reserve

The Agasthiyarmalai Biosphere Reserve encompasses tropical forest ecosystems that fall within the Tirunelveli, Tenkasi and Kanyakumari

districts. It hosts one of the most diverse ecosystems in peninsular India and constitutes an important biogeographical 'hot spot' within the Western Ghats. The reserve hosts 2,254 species of angiosperms including about 405 endemics. The area is also a unique genetic reservoir of cultivated plants.

6.2.7 Conservation and Management of Wetlands

In Tamil Nadu, this scheme is being implemented in Point Calimere, Kazhuveli and Pallikaranai wetlands. Major activities involved in Wetland management are habitat improvement, wildlife protection, eco-development activities, awareness generation and campaigns, research and monitoring, and nature education.

6.2.8 Conservation and Management of Mangroves

Mangroves occurring at the estuaries of rivers function as breeding, feeding, nursery grounds for most of the sport and commercial fishes found in deep coastal waters and inshore waters. They also provide breeding ground for birds, reptiles and mammals. The mangrove bearing forest areas in Muthupet, Pitchavaram and Ramanathapuram constituted as Reserve Forests, are under the control and management of the Forest Department. Habitat improvement measures such as mangrove restoration in degraded lands, maintenance of older plantation, removal of invasive species, protection, eco development activities, awareness creation, monitoring and evaluation etc. are the major activities.

6.2.9 Forest Fire prevention and Management

Forest Fire Prevention and Management Scheme is implemented with focus on fire prevention, detection and management. The scheme provides support for procurement of firefighting equipment, controlled burning, fire line tracing, maintenance of fire lines, soil and moisture conservation works, awareness creation, capacity building of local community, research, monitoring etc. The scheme was implemented with an outlay of Rs.1.79 crores during 2020-2021.

7. Policy Initiatives for Next Five Years

7.1 Green Tamil Nadu Mission

Forests play an important role in conserving natural resources and ecosystems and preserving environmental balance and normal rainfall

patterns. During the Budget Speech for the year 2021-2022, this Government has launched the Green Tamil Nadu Mission to increase the total area under the forest and tree cover in Tamil Nadu to 33 per cent of the land area of the State. Under the Mission a massive tree plantation programme of indigenous and diverse species, in co-ordination with multiple departments, public and private institutions will be taken up with people's participation over 10 years.

7.2 Tamil Nadu Wetlands Mission

Forests are often referred to as "lungs of the earth". Wetlands are considered the "kidneys" that regulate water and filter waste from the landscape. Wetlands are areas that are inundated with water permanently or seasonally. They are unique, highly productive ecosystems where terrestrial and aquatic habitats meet. Wetlands

include mangroves, peatlands and marshes, rivers and lakes, deltas, floodplains and flooded forests, rice-fields, and even coral reefs.

During the Budget Speech for the year 2021-2022, this Government has announced the launch of "Tamil Nadu Wetlands Mission" with the objective of ecological restoration of wetlands in Tamil Nadu. The mission will identify and map 100 wetlands in 5 years and restore the ecological balance with focus on livelihood options at a cost of Rs.150 crore.

7.3 Modernization of Forest Force

In the budget speech for the year 2021 – 2022, this Government has announced to undertake modernization of Tamil Nadu Forest Force with the objective of equipping them with modern equipment and technologies including Unmanned

Aerial Vehicles (UAV), artificial intelligence, GIS and MIS based management systems, updated weaponry and forest worthy vehicles.

8. Forest Revenue and Expenditure Details

8.1 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 banks plantations are being harvested every year. Paper and Plywood Industries requiring pulpwood, softwood and barks are made from matured plantations of eucalyptus and wattle.

Forest Revenue(Rs. in lakh)

Sl. No	Source of Revenue	2021-2022 Revised Budget
1.	Sandalwood	50.00
2.	Timber	195.18
3.	Supply of raw materials to industries	47.85
4.	Other Minor Forest Produce	80.67
5.	Farm Forestry plantations excluding refund	900.00
6.	Sale of bamboo, cashew, softwood plantations, etc.,	16.48
7.	Other receipts	1,019.42
	Sub total	2,309.60
	Deduct recoveries (-)	0.87
	Total	**2,308.73**

8.2 Expenditure

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

programmes will be continued in an effective manner. The necessary provisions for schemes made in the budget are given below.

Forest Expenditure(Rs in lakh)

Name of the Scheme(s)	**2021-2022 Revised Budget Estimate**
State Expenditure	61,611.40
Externally Aided Project	0.00
Centrally Sponsored Schemes	0.03
Schemes shared between State and Centre	1,628.24
Total	**63,239.67**

9. Forest Corporations

9.1 Tamil Nadu Forest Plantation Corporation Limited (TAFCORN)

Tamil Nadu Forest Plantation Corporation Limited was formed on 13thJune 1974 with headquarters at Trichy, with the objective of raising, maintaining and harvesting forest plantation on sustained yield basis on commercial scale to meet the demand of local industries and people.

Government of Tamil Nadu have leased out 71,540.56 ha of Reserved Forest to TAFCORN. The authorized share capital of Company is Rs.10 crores and the shares subscribed, and paid-up capital is Rs.5.64 crores as on date. As per Government orders, TAFCORN pays 30% of the annual turnover as lease rent to the Department.

By adopting modern techniques such as high yielding clones, mechanization of planting activity, irrigation etc., TAFCORN has been successful in increasing productivity. The details of the plantations raised, and expenditure involved during 2019-2020 and 2020-2021 details are given below.

Achievements

Sl. No.	Raising Plantation Species	Physical (ha)		Financial (Rs in Lakh)	
		2019-20	2020-21	2019-20	2020-21
1.	Eucalyptus	1,785	1,462	823.14	535.63
2.	Cashew	1,437	319	650.36	72.68

The pulpwood supplied to papermills during 2019-20 and 2020-21 are given below.

Details of Pulpwood supply made

Year	Quantity supplied (M.T)	Revenue (Rs in lakh)
2019 – 2020	1,96,119.036	8,722.78
2020 – 2021	2,39,165.073	10,642.85
2021 – 2022 (Budget Estimate)	2,20,000.000	9,790.00

TAFCORN has been laying due emphasis to cashew plantation to increase its per hectare returns in the recent past. The details of revenue realized are given below.

Revenue from Cashew

Year	Revenue (Rs in lakh)
2019-2020	1,544.22
2020 – 2021	1,463.70
2021 – 2022 (Budget Estimate)	1,626.00

The revenue and expenditure details of the corporation for 2019-2020 and 2020-2021 and the Budget Estimate for 2021-2022 details are given below.

Year	**Revenue**	**Expenditure**	**Profit (+) /Loss (-)**	
			As per Budget	Actuals
2019 – 2020	11,693.99	8,826.96	--	2,867.03
2020 – 2021*	13,749.69	10,287.76	3,461.93	--
2021 – 2022**	12,687.12	9,855.15	2,831.97	--

* Unaudited

** Budget Estimate

Proposals for Plantations to be raised during 2021-22

Plantations	Physical (in ha)	Financial (Rs.in lakh)
Eucalyptus	1686	662.59
Cashew	500	223.50

9.2 Tamil Nadu Tea Plantation Corporation Limited (TANTEA)

A Government Tea Project was started by the Government of Tamil Nadu for raising tea plantations in 1968, through the Forest Department with the socio-economic objective of rehabilitating the repatriates from Sri Lanka under the Shastri-Srimavo Pact. Later the Tea Project was registered as a Company under the Companies Act, 1956 in 1975 viz., "The Tamil

Nadu Tea Plantation Corporation Limited" and is popularly known as "TANTEA".

The authorized share capital of Corporation is Rs.25 crores and paid-up share capital is Rs. 14.96 crores. The main objectives of the Corporation are:

- To employ and resettle the repatriates from Sri Lanka in the Plantation Schemes.

- To maintain tea plantations on land on lease from the Government of Tamil Nadu, for Rehabilitation of the above said repatriates in the Forest areas of Nilgiris District and other suitable areas in the State of Tamil Nadu.

The Corporation is maintaining plantations over an area of 4,053.758 ha. on the lands leased out by Government of Tamil Nadu.

In Govt. Order (Ms) No.107, Environment and Forests (FR.8) Department, dated 31.07.2018 and Govt. Order (1D) No.266, Environment and Forests (FR.8) Department dated 20.09.2018, Government have sanctioned the proposal of Revival plan of TANTEA and released a sum of Rs.39.95 crores. An amount of Rs.35.54 crores has been utilized so far.

9.2.1 Increasing the retail sale of tea:

Action is being taken to appoint more wholesale/ retail dealers. At present TANTEA has 135 Retail Dealers, 19 Wholesale District Dealers and 2 Regional Marketing Agency. 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 have obtained orders from M/s. Civil Supplies Corporation to sell TANTEA Tea through Public Distribution System shops and supplied 101 MT of tea during 2019-2020 and 66 MT during 2020-2021.Action is being taken to get orders for the supply of tea through Public Distribution System in the States of Kerala, Karnataka, Andhra Pradesh and Telangana. Fresh orders have been received from the state of Chhattisgarh to supply 100 MT of tea through Public Distribution System.

TANTEA products are being supplied to Nayveli Lignite Corporation, SAIL, Tamil Nadu State Transport Corporation, Military Canteens, Post Office, Prison Department and TANGEDCO etc.

The physical achievement of green tea leaves and made tea for the year 2018-19, 2019-20 and estimated quantum for 2020-21 are furnished below.

Green tea leaves and made-tea production (in lakh kg)

Particulars	2019-20		2020-21		2021-22
	Target	Actuals	Target	Actuals	Budget Estimate
Harvest of Green Tea Leaf	292.00	301.91	368.00	321.21	368.00
Production of Made Tea	67.16	75.36	84.64	82.84	84.64

The Revenue and Expenditure of TANTEA details are furnished below.

Revenue and expenditure details (Rs in lakh)

Particulars	2019-20		2020-21		2021-22
	Target	Actuals	Target	Actuals	Budget Estimate
Income	8014.97	4241.06	7645.75	10261.00	10781.30
Expenditure	7555.35	5669.59	8573.42	9999.89	10364.63
Profit (+)/ Loss (-)	(+) 459.62	(-) 1428.53	(-) 927.67	(+) 261.11	(+) 416.80

9.3 Arasu Rubber Corporation Limited (ARC)

Government Rubber Plantation was established by Forest Department in 1961 to rehabilitate Sri Lankan repatriates who were conversant with rubber cultivation and considering the

agroclimatic suitability of Kanyakumari District. An area of 4,785.70 ha has been covered under this plantation till 1979. In 1984, Arasu Rubber Corporation Limited was formed to take over this work as a corporate entity from the erstwhile Government Rubber Plantations. The Corporation was registered on 01.08.1984 under the Companies Act 1956. Presently the authorised capital of the Corporation is Rs.13.07 crore and the paid-up share capital is of Rs.13.07 crore. The entire share capital of the corporation is held by Government of Tamil Nadu. After handing over some unsuitable areas back to Forest department, the present area of operation is 3,985.694 ha. Unlike other large enterprises, this corporation is a highly climate friendly enterprise and provides employment to about 1500 persons.

The objectives of the Corporation as below,

1. To safeguard the future of the rubber plantation industry.
2. To protect the interests of workers and increase employment potentials particularly for surplus rubber plantation labourers, and rehabilitation of Sri Lankan repatriates.
3. To avoid possible speculative trends in acquisition and management of rubber and other plantation estates.

9.3.1 Production and financial achievement

Production and financial achievements of Corporation are furnished below

Sl. No	Particulars	2019-2020 (Actual)	2020-2021 (Actual)	2021-2022 (BE)
1.	Production of Rubber (in M.T)	1,300.00	1,479.00	1,458.00

2.	Income and expenditure			
	a) Income (Rs.in lakhs)	3,158.24	3,807.17*	3,563.39**
	b) Expenditure (Rs.in lakhs)	3,474.29	3,547.47*	4,029.67
3.	Profit (+) or Loss (-)	(-) 316.05	(+) 259.70	(-) 466.28

* Unaudited

** Subject to revision

9.3.2 Future proposals

A rubber tree becomes tappable at the age of 7 years and its yield becomes very less after the age of 35 years and hence such area should be felled and replaced with fresh rubber plants after 35 years so as to obtain economic yield of rubber. Therefore, the rubber trees originally planted should have been felled between 1995 to 2014

according to their respective years of plantation. However due to various reasons the felling of original trees could not be completed as per the above-mentioned schedule and the works of felling and also the replanting in the felled area, are still going on. So far felling has been carried out over 2,617.94 ha and replantation work is completed over 1,860.112 ha.

The Government of Tamil Nadu will undertake a holistic study of all three corporations, viz., Tamil Nadu Forest Plantation Corporation Limited (TAFCORN) with reputed professional organisations with the objective of improving their profitability through better business management practices, including marketing.

10. Conclusion

Tamil Nadu shall strive to achieve excellence in sustainable forest and wildlife management through well designed policies and programmes based on proven scientific principles. The Department shall take all steps to mitigate the impact of climate change through healthy and resilient forests for a better future.

K.Ramachandran
Minister for Forests

Hon'ble Chief Minister of Tamil Nadu, Thiru.M.K.Stalin reviewed the activities of the Environment, Climate Change and Forests Department With Hon'ble Ministers and Senior Officials.

Hon’ble Chief Minister of Tamil Nadu Thiru.M.K.Stalin,inspected Arignar Anna Zoological Park at Vandalur, Chennai and enquired about the health and treatment for COVID-19 infected Lions at the Zoo

Hon’ble Chief Minister of Tamil Nadu Thiru.M.K.Stalin,
handed over the Government Order to Trustees of Nagoor Dargah allocating 45 Kgs of Sandalwood at free of cost for the Kanduri festival of the Dargah.

Elephant Rivaldo in Wild

Rescue and Rehabilitation of Elephant Rivaldo

Vedanthangal Birds Sanctuary

Nilgiris Biosphere Reserve