ENVIRONMENT, CLIMATE CHANGE AND FORESTS DEPARTMENT

FORESTS

POLICY NOTE
2022 - 2023

DEMAND No. 54

K. RAMACHANDRAN
Minister for Forests

INDEX

POLICY NOTE 2022-2023

FORESTS DEPARTMENT

விசும்பின் துளிவீழின் அல்லால்மற் றாங்கே
பசும்புல் தலைகாண்பு அரிது.

In case of no drops of rain from the clouds
It is rare to see even blades of grass.

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 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 are among the top natural resources bestowed upon humankind. The survival and well-being of any Nation depends on sustainable social and economic progress, which satisfies the needs of the present generation without compromising the interest of future generation. In order to ensure ecological security to the mankind, clean water and fertile soil are essential. Forests eco-systems provide fresh air, water resources, fertile soil, biodiversity and environment. They provide us with both tangible and intangible resources without which the existence of living beings would

be impossible. Various organs of rural society including a majority of the tribal are directly dependent on forests for their livelihood. Forests preserve soil and humus content which act as a porous reservoir for retaining water and gradually releasing it in a sustained flow over a period of time.

Forests provide a diversity of ecosystem services including recycling carbon dioxide, acting as a carbon sink, aiding in climate regulation, purifying water, mitigating natural hazards and serving as a genetic reserve. Forests also act as one of the recreational agencies. They play a major role in local weather patterns, lowering scorching temperatures in the tropics and driving local cloud systems that provide rainfall.

Forest degradation will have adverse impact on these life supporting systems. Ever increasing population and growing industrialization are posing a serious challenge to the preservation of our terrestrial and aquatic

ecosystems. Over exploitation of our resources due to rapid population growth has led to degradation of forests and conversion of agricultural lands. Rapid urbanization has resulted in mushrooming of slums, disappearance of wetlands, polluted air and water due to overflow of sewerage. Therefore, eco-friendly development is the need of the hour. A balance has to be struck between the growth of the economy and the maintenance of the balanced ecosystem.

The Government of Tamil Nadu recognizes the prospects of a balanced ecosystem in advancing the socio-economic development of the State. The State continues to be equally concerned about vulnerability of natural resources on account of climate change and is committed to conserve and sustainably manage forests and wildlife, while meeting the livelihood needs of the forest dependent communities.

The Forest Department is in the continuous process of formulating schemes to achieve the

objectives mentioned under the umbrella of National Forest Policy 1988, State Forest Policy 2018 and Sustainable Development Goals (SDGs).

The scope of increasing forest and tree cover lies in bringing more areas outside forests under tree cover and realizing the current situation, the Forest Department is taking all efforts towards this direction. At the same time, focus is also given to improve the quality of forests by restoration of degraded forest areas, soil and moisture conservation works, habitat improvement, empowerment of local communities and public at large by creating awareness and infusing encouragement by way of participation in workshops and their capacity enhancement.

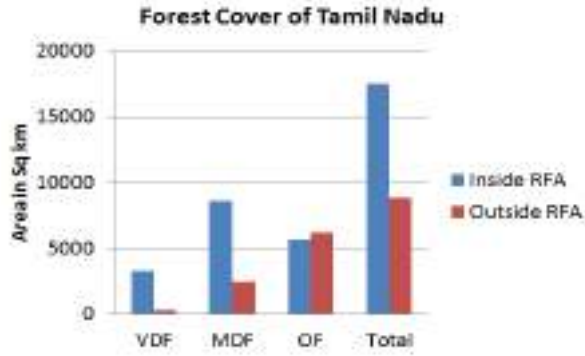
2.Forest Wealth of Tamil Nadu

As per the latest India's State of Forest Report, 2021 (Biennial), based on the interpretation of Indian Remote Sensing (IRS) Satellite data, the forest cover in the State is

26,419.23 sq km which is 20.31% of the State's Geographical area.

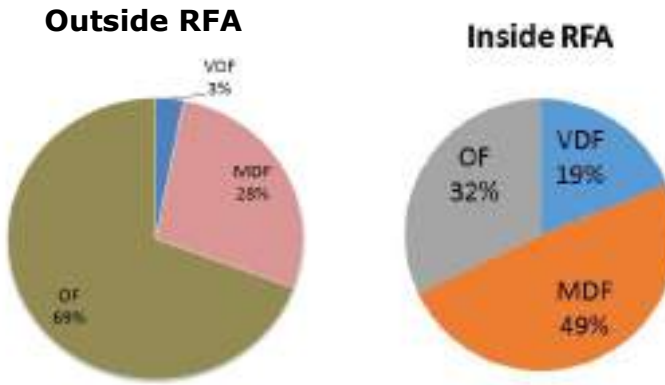
Kalakkad Mundanthurai Tiger Reserve (KMTR), Tirunelveli

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 17531 sq km and the Forest cover outside the RFA is 8888 sq km.



Forest Cover inside and Outside Recorded Forest Area (RFA)

in sqkm



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 4424 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 and (9) Montane wet temperate.

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 1st among 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.

Eugenia Singampattiana KMTR

Ladis slipper Orchid, KMTR

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 especially 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.

Nilgri Thar, Anamalai.

Flamingo, Pulicat

Smooth – Coated Otters, Krishnagiri Dist.

Sathyamangalam Tiger Reserve, Erode Dist.

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	Ramnad, Tuticorin, Tirunelveli and Kanyakumari	1986
2	Indira Gandhi National Park	11,710.00	Coimbatore	1989
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 Notifica-tion
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

Sl. No	Name of Wildlife Sanctuary	Extent (in ha)	Districts	Year of Notifica-tion
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
8	Kanyakumari Wildlife Sanctuary	40,239.55	Kanyakumari	2007
9	Sathya-mangalam 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 Notifica-tion
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 16 Bird Sanctuaries as below:

Sl. No	Name of Bird Sanctuary	Extent (in ha)	Districts	Year of Notification
1	Vettangudi Bird Sanctuary	38.40	Sivaganga	1977
2	Pulicat Lake Bird Sanctuary	15,367	Tiruvallur	1980
3	Karikili Bird Sanctuary	61.21	Kanchee-puram	1989
4	Kanjirankulam Bird Sanctuary	104.00	Ramanatha-puram	1989
5	Chitrangudi Bird Sanctuary	47.63	Ramanatha-puram	1989
6	Koonthankulam-Kadankulam Bird Sanctuary	129.00	Tirunelveli	1994
7	Vellode Bird Sanctuary	77.18	Erode	1997
8	Vedanthangal Bird Sanctuary	30.00	Chengal pattu	1936
9	Udayamarthand-puram Bird Sanctuary	45.28	Tiruvarur	1998
10	Melaselvanur-Kilaselvanur Bird Sanctuary	593.08	Ramanatha-puram	1998
11	Vaduvoor Bird Sanctuary	128.10	Tiruvarur	1999
12	Karaivetti Birds Sanctuary	453.71	Ariyalur	2000
13	Theerthangal Bird Sanctury	29.29	Ramanatha-puram	2010
14	Sakkarakottai Tank Bird Sanctuary	230.49	Ramanatha-puram	2012
15	Oussudu Lake Bird Sanctuary	331.785	Villupuram	2015
16	Kazhuveli Bird Sanctuary	5151.60	Villupuram	2021

Kazhuveli Bird Sanctuary, Villupuram

Karikili Bird Sanctuary, Kancheepuram

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	Thiruppudai-maruthur Birds Conservation Reserve	2.84	Tirunel-veli	2005
2	Suchindrum-Theroor – Managudi Conservation Reserve	484.77	Kanniya-kumari	2015

Suchindram, Theroor – Managudi Conservation Reserve

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 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 Mundan-thurai Tiger Reserve	Tirunelveli and Tenkasi	895.00	706.542	1,601.542
2	Anamalai Tiger Reserve	Coimbator e and Tiruppur	958.59	521.280	1,479.870
3	Mudumalai Tiger Reserve	The Nilgiris	321.000	367.590	688.590
4	Sathyaman galam Tiger Reserve	Erode	793.493	614.912	1,408.405
5	Srivilli-puthur Megamalai Tiger Reserve	Virudhu-nagar, Theni & Madurai	641.862	374.709	1,016.571

Core and Buffer areas of Tiger Reserves

Anamalai Tiger Reserve

Mudumalai Tiger Reserve

Srivilliputtur Megamalai Tiger Reserve

Sathyamangalam Tiger Reserve

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
2	Nilambur Silent Valley - Coimbatore Elephant Reserve (Nilambur Elephant Reserve)	Coimbatore, Nilgiris	56,557

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

Anamalai Elephant Reserve

Nilgiris Elephant Reserve

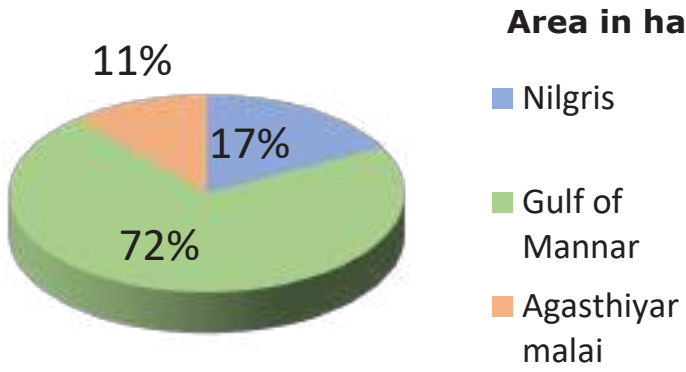
2.9 Biosphere Reserves

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	Ramanatha-puram, Thoothukudi, Tirunelveli and Kanniyakumari Districts	10,50,000
3	Agasthiyarmalai Biosphere Reserve	Kanniyakumari, Tenkasi and Tirunelveli Districts	1,67,236

Biosphere Reserve Areas



3. Ongoing Schemes

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

3.1. Major State Schemes

3.1.1 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 4,745 ha (9,49,000 seedlings) have been planted till 2020-21 at a total cost of Rs.24.05 Crores.

3.1.2 Sandal 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 2015-16 to 2024-25 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 2017-18. Approximately 7.10 lakh seedlings were planted at a cost of Rs.8.94 Crore.

3.1.3 Asian Elephant depredation and mitigation measures

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.

3.1.4 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 these conflict. During 2021-22, an amount of Rs.10.01 crores was sanctioned by the State Government and Rs.1.26 crore was sanctioned under various shared schemes.

3.1.5 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 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. During 2021-22, an amount of Rs.257.435 lakh was sanctioned for the implementation of the schemes.

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

Arignar Anna Zoological Park is the oldest zoo in the country which was established in the year 1855 in Chennai and later shifted to its present location in Vandalur Reserve Forest in the year 1985. Spread over an area of 602 hectares of land, it is one of the largest zoo in Southeast Asia that houses animals in naturalistic enclosures simulating their natural habitat. A modern and

scientifically managed zoo and an Institutional member of WAZA (World Association for Zoos and Aquariums), it exhibits 2382 wild animals, which includes 47 species of mammals, 97 species of birds 38 species of reptiles in all numbering 182 species.

The Vision of AAZP is to have environmentally sensitive people who care for the wild fauna and flora and conserve it for long term welfare of mankind. The objectives of AAZP as below:

- Conservation of the fauna of Eastern and Western Ghats with special reference to Lion -Tailed Macaque, Nilgiri Langur, Gaur and small mammals.
- To provide to all animals housed in the zoo highest standards of housing, upkeep and health care.
- To provide the zoo visitors opportunities for getting an uninterrupted view of wild

animals to develop an empathy towards them.

- To carry out research on different aspects of biology, behaviour and genetic makeup of endangered species of wild animals and facilitate their breeding.
- To provide requisite housing, upkeep and health care to the distressed animals rescued from various sources.

It has emerged as a successful ex-situ conservation and captive breeding Centre of excellence for many endangered species, in recognition of which the Central Zoo Authority has designated the zoo as Coordinating Breeding Centre for Lion -Tailed Macaque, Nilgiri Langur and Nilgiri Tahr and a Participating Zoo in the breeding of Bengal Tigers, Indian Gaur, Indian Giant Squirrel and Wild dogs.

For the easy access of the online users, BOT system –Chat support was incorporated in the zoo website. For unique online tickets- with QR code is generated. Dashboard help desk is created for the online visitors to answer the queries timely. Animal adoption online were revamped.

Through CSR support, two units of air to water were installed at two locations of the zoo sponsored by Nissan. Renault Nissan Technology & Business Centre India, Mahindra City has sponsored a wildlife ambulance, signage boards, solar lights, and 2 nos. of Battery Operated Vehicle were provided. State Bank of India sponsored 3 toilets in zoos.

Chimpanzee Gowri & baby in Arignar Anna Zoological Park Zoo

Even during the lockdown period, the zoo remained connected with people through a virtual platform. A virtual zoo ambassador Programme, webinars on wildlife, contests, and events on important wildlife days are conducted. The 24x7 animal live streaming of 16 zoo animals species received an overwhelming response from people and has recorded over 6 crore views so far.

Arignar Anna Zoological Park Zoo School runs various educational programmes with the goal of conservation education and sensitizing people on coexistence of humans and wildlife as well as protecting the environment. These programmes include Zoo Outreach, Zoo Orientation for visiting schools, Zoo Ambassador Program, special themed workshops, zoo in-house training, zoo club for volunteering activities, celebration of important forest and wildlife days, and competitions. Zoo school has initiated a species ambassador Programme for adults and youngsters. It is the first-of-its-kind Programme for the conservation of species initiated by an Indian Zoo. Species specific ambassador Programme focused on slender loris and Nilgiri langur was conducted.

3.1.7 Advanced Institute for Wildlife Conservation (AIWC)

The State of Tamil Nadu has established Advanced Institute for Wildlife Conservation (Research Training and Education) 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 Centre for Wildlife Forensics, Centre for Animal care sciences and Centre for Conservation Education with an initial outlay of Rs.7.31 crore. An International Researchers Hostel is under construction at the Institute campus 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 in 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.

3.1.8 Forest Ponds

Forest Ponds are being created to conserve rain water and increase ground water level. The water received in the ponds will improve the ground level water table and also provide water for the use of wild animals during the dry season/summer season in Reserved Forests and Tiger Reserves areas. This scheme will be continued during 2022-23.

3.2 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.

3.2.1 Integrated Development of Wildlife Habitats

Integrated Development of Wildlife Habitats has following components:

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

The Government of India has sanctioned funds for 28 schemes for the developmental activities in National Parks, Wildlife Sanctuaries and Conservation reserves. During 2021-22, an amount of Rs.8.796 Crores was sanctioned and this scheme will be continued during 2022-23.

3.2.2 Project Tiger

Tiger being the top carnivore, the importance of its conservation lies in the fact that the presence of this predator is an indicator of the overall health of an ecosystem. Various measures to conserve Tigers and their habitats have been taken up by the Forest Department in the five Tiger Reserves viz., Kalakad-Mundanthurai Tiger Reserve in Tirunelveli district, Anamalai Tiger Reserve in Coimbatore and Tiruppur districts, Mudumalai Tiger Reserve in Nilgiris district, Sathyamangalam Tiger Reserve in Erode district and Srivilliputtur – Megamalai Tiger Reserve in Theni and Virudhunagar Districts. The scheme provides assistance for works relating to habitat conservation and protection including fire prevention, eco-development, improvement of water sources, tourism development, mitigating human wildlife conflicts and improvement of

infrastructure facilities in the Tiger Reserves. To reduce the anthropogenic disturbances in Critical Tiger Habitats in Tiger Reserves, 435 families have been relocated from core area of Mudumalai Tiger Reserve. Further with respect to recurring works the funds are sanctioned in the ratio of 50:50 by the Central and State Governments. During 2021-22 an amount of Rs.36.35 crore has been sanctioned and this scheme will be continue during 2022-23.

3.2.3 Project Elephant

Tamil Nadu is one among the leading States implementing Project Elephant, pursuing scientific management and habitat conservation. The elephant population in Tamil Nadu has been estimated to be about 2761 May 2017. The Project Elephant scheme is implemented in large contiguous elephant landscapes categorized for management as Elephant Reserves and these

Reserves have no separate legal status. The scheme in Tamil Nadu is being implemented in the four elephant Reserves to protect the elephants and improve their habitats. The scheme also includes payment of compensation to farmers for the crop damages and loss of human lives caused by human wildlife conflict and further to take necessary steps to minimize such conflicts. During 2021-22 an amount of Rs.4.54 crore has been sanctioned and this scheme will be continued during 2022-23.

3.2.4 Conservation and Management of Nilgiris Biosphere Reserve

Nilgiris Biosphere Reserve is located in the Western Ghats and Nilgiris range of Southern India. Nilgiris Biosphere Reserve contains following forest types: Moist evergreen, Semi-evergreen, Thorny, Savana, Shola and grass land. Out of 3,300 species of flowering plants, 132 species are endemic to the Nilgiris Biosphere

Reserve. Fauna of the Nilgiris Biosphere Reserve includes about 100 species of reptiles and amphibians, 300 species of butterflies, 31 amphibians and 60 species of reptile's endemic to the Western Ghats. The Reserve encompasses 5,520 sq.km in the 3 southern States of which Tamil Nadu portion is 2537.6 sq.km. It forms an almost complete ring around the Nilgiris Plateau. The Tamil Nadu Part covers parts of The Nilgiris, Erode and Coimbatore Districts. This area is rich in endemic flora and fauna. The scheme will be continued during 2022-23.

3.2.5 Gulf of Mannar Biosphere Reserve

The Gulf of Mannar Biosphere Reserve known for its 21 coral rich islands along with coast line from Rameswaram to Thoothukudi was declared as Marine National Park in 1986 by the Government of Tamil Nadu and later in 1989 Government of India declared it as the first

Marine Biosphere Reserve of India. With its rich biodiversity of about 4223 species of various flora and fauna, the Reserve is prominent for its coral reefs, seagrass and mangroves. The Gulf of Mannar Biosphere Reserve supports several critically endangered species such as *Dugong dugong* (sea cow), sharks including whale shark, sea horses, green sea turtles, dolphins, sea cucumbers.

The Gulf of Mannar Biosphere Reserve Trust was established in 2001 with a view to ensure speedy and efficient implementation of the GEF UNDP funded project on 'Conservation and sustainable use of the coastal biodiversity of Gulf of Mannar Biosphere Reserve'. The activities under the project were implemented for 10 years from 2003 to 2012 and the activities were further continued from State Government funding from 2013 onwards. The major achievements have

been Awareness generation, institution building and strengthening of EDCs/VMCs, decreasing biotic pressure, enhance livelihood options, strengthening park management and research activities. The microfinance corpus fund of Rs.8.93 crores created for EDC/VMCs has earned a profit of Rs.4.49 crores by way of interest from beneficiaries of microfinance and Rs.2.27 crores by way of interest accrual from bank since inception. These achievements will be consolidated by mainstreaming it with the regular schemes and programmes of the Government. The Government of India sanctions funds for the Gulf of Mannar Biosphere Reserve under two separate schemes viz. Gulf of Mannar Biosphere Reserve and Conservation and Management of coral reefs. The scheme will be continued during 2022-23.

3.2.6 Agasthyamalai Biosphere Reserve

The Agasthyamalai Biosphere Reserve has been included by UNESCO in the World Network of Biosphere Reserves considering the presence of major ecosystem types and landscapes. The total area of the Biosphere reserve is 3500.36 sq km, of which 1828 sq km is in Kerala and 1672.36 sq km in Tamil Nadu. The Biosphere Reserve covers parts of Tirunelveli, Tenkasi and Kanniyakumari districts in Tamil Nadu. The scheme will be continued during 2022-23.

3.2.7 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.

3.2.8 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.

3.2.9 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 fire-fighting 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.

4. New Initiatives 2021-22

Various new initiatives have been announced in the Legislative Assembly during the Budget Session 2021-22, viz.,

4.1 Setting up of Rescue, Treatment and Rehabilitation Centres (RTRCs) at Coimbatore/ Mudumalai, Tiruchirappalli and Tirunelveli Districts

Rescue, treatment and rehabilitation of wildlife is one of the most important core activities of Forest Department . The Department is presently providing treatment to injure and rescued wild animals with assistance of veterinarians from Animal Husbandry Department . The existing treatment facilities are however not adequate and do not meet the standards of wildlife treatment requirements. The lack of dedicated and modern veterinary care facilities lead to delayed or lesser than desired medical treatment to wild animals. In this context, it is important to set up State of the Art, Rescue, Treatment and Rehabilitation Centres in Tamil Nadu to treat sick, injured and orphaned wild animals, with the goal to release

them into the wild as per approved Government protocols.

Three Rescue, Treatment and Rehabilitation Centres (RTRCs) shall be set up with following objectives.

(1) Rescue injured, orphaned and sick wild animals including those that get strayed in habitations.

(2) Provide expertise and service for scientific quarantine, rehabilitation and release of wild animals in identified habitats.

(3) Function as leading institutions for consultation and guidance for addressing man-animal conflict issues.

(4) Develop and standardize protocols for rescue and rehabilitation of wild animals in their traditional habitats.

These RTRCs shall be equipped with the State-of-the-Art facilities and well-trained manpower to provide specialized treatment to wild animals. These Centres shall also be well equipped with operation theatres, laboratories and all other essential diagnostic equipment to provide the best possible treatment and care. These Centres shall also train rescue teams for conducting swift and smooth rescue operations of distressed wildlife.

As these centres are being set up as the first of their kind, all efforts must be taken, to set them up in consultation with national and international experts. A Detailed Project Report is under preparation in consultation with experts.

4.2 Digitization of Forest Department for better management of forest resources to fulfill present and future requirements of the Department

Digital technologies around the globe are presenting an incredible opportunity for growth, and better management practices. Forestry sector is no exception. Various digital tools have enabled a host of services towards improved forestry practices. In view of the excellent opportunity available in the digital arena, the Department of Environment, Climate Change and Forests, have decided to embark on the digital pathway with the following objectives: -

i. Digitization of forest boundaries to help in the identification of encroachments.

ii. Real time monitoring of incidents like forest fire, wildlife depredation etc.,

iii. Creating a Centralized repository of spatial database

iv. Geo tagging of all forestry development activities and forest assets.

v. Monitoring of plantation activities

vi. Climate impact assessment

vii. Green cover monitoring

viii. Wildlife Corridor monitoring

ix. Human wildlife conflict reporting

x. Easy access, retrieval and information sharing

This would help in the inventorisation of valuable forest resources. The initiative will be helpful in evidence-based decision making.

The objectives of the Digitization of Forest Department is to develop a strong geo-spatial database for better management of forest and wildlife habitats. This will provide accurate,

authentic, and transparent database for project formulation, monitoring, evaluation, etc., This will be useful for delineation of wildlife corridors, eco-sensitive zones, wetlands, zone of influence, etc.

4.3 Enhancement of the exgratia / compensation for human death and permanent incapacitation

Human – wildlife conflict needs to be addressed adequately through a well-planned integrated approach to reduce conflicts and promote co-existence between people and animals. One of the approaches in human-wildlife conflict mitigation is providing adequate compensation to victims of such conflicts. Towards this, the Government have enhanced payment of compensation from Rs.4.00 lakhs (Rupees four lakhs) to Rs.5.00 lakhs

(Rupees Five lakhs) for the loss of human life or permanent incapacitation.

4.4 Notification of the Agasthiyarmalai Elephant Reserve to protect the elephant habitats of the Southern Districts in Tamil Nadu.

Tamil Nadu has four Elephant Reserves at Nilgiris, Coimbatore, Anamalai and Srivilliputhur. Habitat development activities are being carried out through the Elephants Project. Similarly, the Agasthiyarmalai Elephant Reserve will be established as fifth elephant reserve in Tamil Nadu coving wildlife habitats of Kanyakumari, Tirunelveli and Tenkasi districts. This will help us in better management of wildlife habitats.

4.5 Dugong Conservation Reserve will be established at the PalkBay.

Palk Bay is a shallow sea located on the southeast coast of India. Its environment is unique in the sense that it is almost an enclosed bay with inflow from several rivers along the coast. The marshlands of its backwater system support lush growth of Mangrove forests which harbor a wide variety of birds, both resident and migratory. The backwaters act as breeding and feeding grounds for a wide variety of fin-fish and shell-fish varieties, including shrimps and variety of fishes. The enclosed nature of the bay provides protected waters that are frequented by dolphins, porpoises and turtles. Palk Bay is rich in biodiversity having all the important groups of flora and fauna in its environment.

The endangered species Dugong (Dugong dugon) lives in shallow waters near the coast up to a depth of 10 mts. It is the flagship species of

the Palk Bay. Sea grass, Cymodocea is its primary diet. Due to uncontrolled fishing carried out till recently and reduction in their grazing area, their numbers have come down drastically. However, they are now protected by the Wildlife (Protection) Act of 1972 and are listed in the endangered category. Therefore, there is an urgent need to create awareness among the public about Dugong conservation.

Government on 03.09.2021 had made announcement that, "In order to protect the endangered Sea Cow species and its marine habitats in Tamil Nadu, a "Dugong (Seacow) Conservation Reserve" will be established at PalkBay".

4.6 Setting up of Forest Sniffer Dog Squad units for detection of forest and wildlife offences.

Wildlife crime has serious implications on sustainable development, economic growth, social

wellbeing and sustainable livelihood. Trafficking in wildlife can lead to extinction of threatened or endangered species causing permanent damage to our eco-system and biodiversity. If not controlled effectively, the wildlife crime can lead to long term ecological imbalance threatening the survival of species.

Illegal wildlife trade continues to prevail and has evolved into an organized activity, threatening the survival of many species in India. Current efforts for combating illegal wildlife need to be strengthened. In order to curb this growing menace, it is necessary that the best enforcement practices are deployed. Involving sniffer dogs for crime detection and prevention is one of the long-proven practices. Sniffer dog Squads have proved to be extremely effective for patrolling as strong deterrent to poaching and very helpful in crime detection.

In order to strengthen the efforts of the Government to effectively control wildlife crime in Tamil Nadu, the Government has decided to set up Six Forest Sniffer Dog Squad Units in Tamil Nadu Forest Department with the following objectives: -

a. To deter illegal wildlife trade, poaching and trafficking through effective patrolling and combing operations in crime prone areas.

b. Strengthen the efforts of the Wildlife Control Bureau in field operations to detect wildlife crime cases and aid in investigations and gathering of evidence for prosecution.

c. Detection of wildlife crime articles such as bones, skins, parts and derivatives from wildlife and building up a repository of knowledge and data.

The Government made the following announcement on the floor of the Assembly on

03.09.2021 that "Forest Sniffer Dog Squad Units will be set up for each Forest Circle for detection of forest wildlife offences".

4.7 Establishment of Marine Elite Force for strategic protection of the coastal and marine biodiversity, prevention of wildlife poaching and illegal trade in coastal regions

Tamil Nadu has a long coastline of about 1076 km which has unique marine resources spread over in the Indian Ocean, Palk Bay and the Bay of Bengal. The Palk Bay and Gulf of Mannar occupy nearly 675 km long coast line. The Gulf of Mannar is endowed with rich varieties of marine flora and fauna and is home to significant ecosystems, such as, the coral reefs, rocky shores, sandy beaches, mud flats, estuaries, mangrove forests, seaweed stretches and seagrass beds that rare and endangered corals,

seagrasses, crustaceans, molluscs, fin fishes and seaweeds apart from the seasonally migrating marine mammals such as whales, dolphins, porpoises and marine turtles. The Gulf of Mannar and Palk Bay are considered as "Biologists paradise". Record of over 4223 species of flora and fauna has been documented by various researchers and investigators over several decades.

The marine resources are constantly exploited for economic reasons. Many protected marine species are also hunted illegally by the poachers and smugglers as those fetch huge prices in domestic and international illegal wildlife markets. Thus, many of rare and endangered species are facing constant threats to their survival due to over exploitation. Practice of prohibited trawl net fishing and other illegal fishing methods bring additional stress on the

species. Marine turtles, sea cucumbers, sea horses, sharks and rays, pipe fishes, dugongs, dolphins, and sea shells face extraordinary hunting pressures.

In order to address the above and to strengthen protection in the ecological sensitive coastal marine areas in the Gulf of Mannar Biosphere reserve particularly the Gulf of Mannar Marine National Park and the Palk Bay, establishment of Marine Elite Force with professional training and exposure is proposed with mainly the following objectives, inter alia,

1. Strengthening protection and sustainable management of marine area.
2. Disaster management affecting marine and coastal wildlife.
3. Capacity development
4. Intelligence collection and dissemination.

Major components of Marine Elite Force are as below: -

i) Establishing two units of Marine Elite Force

ii) Engaging five Marine Watchers per unit on contract basis

iii) Purchase of two deep water boats

iv) Engaging two boat drivers

v) Providing ration / special allowance / risk allowance for Marine Watchers / Boat Drivers

vi) Providing fuel for patrolling boat

vii) Intelligence Collection and data sharing and interaction meeting with other stake holders i.e. customs, coast guard, navy, marine police and fisheries

viii) Providing suitable Marine field gadgets such as life jacket, camera traps, IR cameras, diving equipments, snorkeling equipments etc.

ix) Providing of 10 Digital Handheld Transceivers

x) Providing camping equipment's night lamp, torch, tents etc.,

xi) Providing brochures, posters, pamphlets etc.,

4.8 Policy on the removal of invasive alien weeds in Tamil Nadu

Invasive alien species of plants, cause serious economic and environmental damage and can adversely impact the ecosystem health. Invasive plant species in particular, adversely impact biodiversity, leading to the decline or elimination of native species through competition, predation or transmission of pathogens and cause disruption of local ecosystems and ecosystem functions. The invasion of these species is regarded as one of the major threats to biodiversity.

The threat of invasive alien species can be direct or indirect. Indirectly the non-native species suppress native species by disrupting the food web in an ecosystem by restricting or

replacing native food sources. Invasive species can also alter the abundance or diversity of species that are important habitat for native wildlife. The invasion by such species is known to cause significant changes in the structure and function of forests by obstructing potential succession processes, interfering with fire regimes and pollination services, and displacing native flora and fauna.

Most of the exotic tree species were introduced in forest areas of Tamil Nadu like Wattle, Pine and Eucalyptus to satisfy industrial/ commercial needs. However, they have had adverse impact on the ecology of the area, particularly in terms of modifying/ affecting hydrology, forest/ grassland community, wildlife and can lead to intensified man-wildlife conflict.

In order to address the growing threat of invasive plant species in forest areas of Tamil Nadu, there exists a serious and pertinent, need to prioritize problematic species and develop

strategies to manage the proliferation of the invasive alien species. In the past, there have been efforts to compile lists of invasive plant species in India and to study the impact of invasive species in different parts of the country. However, a comprehensive policy framework for invasive species management in forest areas of Tamil Nadu is much needed keeping in view the serious threat. The Policy to control and eliminate invasive alien species needs to be developed taking stock of the invasive species cover in forest areas (species and area wise) and ongoing weed management practices in the field thereby incorporating learnings from best practices elsewhere.

The Policy will address highly invasive, habitat degrading plant species in the forest areas of Tamil Nadu for removal and management simultaneously. Principal focus has to be laid upon developing / elaborating strategies,

methodologies and protocols for management of the most problematic weeds in forest areas viz., Lantana camara L., Acacia mearnsii, Prosopis juliflora, Eupatorium perfoliatum, Parthenium hysterophorus L., Mucuna bracteatea, Eichhornia crassipes, Salvinia molester, Ipomoea carnea, Leucaena leucocephala, Cuscuta Sp., Opuntia Sp., Celosia argentea, Ulex europaeus, Cytisus scoparius, Cestrum spp., Hypothenemus hampei etc., It is critical to pay an immediate attention to restore the habitat health to support wildlife survival as well as to avoid straying out of wild animals.

4.9 Establishment of Forest Archive and the Forest Data Centre

Tamil Nadu Forest Department has an extremely rich history and biodiversity heritage. Set up in the year 1856, the Department has grown tremendously over 160 years of its

existence. The Department is in possession of several historical documents, research articles, books and reference materials reflecting the rich heritage of forests, their management systems and conservation efforts. The Department can take pride in the fact that it is one of the oldest Forest Department s in India with an impressive body of work in the field of Forest protection, Biodiversity Conservation and Wildlife Management. While there is an impressive collection of forest related material, there is no forest repository to enable easy access to information & data. Creating a digital repository of forest information will be extremely useful for future forestry initiatives and shall help to preserve the information for posterity.

An announcement was made by the Government on the floor of the Tamil Nadu Assembly on 3rd September 2021 that a Forest Archive and Data Centre shall be set up. In

accordance with the announcement, the Tamil Nadu Forest Archives and Data Centre (TNFADC) shall be set up at Chennai as an invaluable repository of information about Tamil Nadu's flora and fauna and its rich conservation history. The TNFADC shall contribute to a greater understanding of the Tamil Nadu Forest initiatives. The Data Centre will strive to digitise the entire resource into an e-library to provide access to information quickly and meaningfully. The TNFADC shall be a "Treasure Trove" of the rich archival material related to forest protection and conservation.

The Tamil Nadu Forest Archives and Data Centre shall be a repository of the following: -

I. Forest Research Reports
II. Scientific Publications and Documents
III. Government Orders and Gazette Notifications

IV. Old Manuscripts and Historical References

V. Forest Maps

VI. Books / Handbooks of Forest Flora and Fauna, Herbaria

VII. Rare Photographs

VIII. Forest Working Plans, Management Plans and Annual Report

IX. Research Publications

X. Forest related Books and Periodicals, Newsletters

XI. Forest Manuals and Standard Operating Procedures (SOPs)

XII. Unique Resources covering the Conservation Movement

XIII. Forest related resources from around the world

XIV. Rare Photographs, Slides, Negatives and Plates documenting the history of Tamil Nadu Forest Department ’s evolution

XV. Collection of Historical References relating to Forest Service including copies of articles, correspondence, pamphlets and photos etc.

XVI. Photos and details of awards, fellowships etc.

XVII. Central and State Government approved action plans and vision documents towards conservation and protection of Forests and Environment.

The TNFADC shall be extremely useful in research, publication and educational outreach. The TNFADC will be valuable to anyone interested in the history of Forests, Natural resources and Management techniques. Apart from research fellows and students from Schools and Colleges, it shall also be extremely useful for students, journalists, editors and people interested in Forests and Environment not only from India but from around the world.

Tamil Nadu Archive and Data Centre will go a long way in permanent preservation of fragile, historic and scientific records, TNFADC will successfully document, and preserve and show case the heritage of the Tamil Nadu Forest Department to the outside world. This repository will definitely inspire the present and future generations of foresters and enthusiasts and public as well. DPR is under preparation for implementation of this initiative.

4.10 Setting up of a Forest and Wildlife Crime Control Bureau to detect and prevent planned wildlife crime

Forest and Wildlife crimes not only adversely impact the diverse flora and fauna of a region but also seriously impact the entire eco-system. Poaching and organised illegal wild life trade has serious ramifications on the

Biodiversity and can lead to loss of rare species thereby threatening the sustainable and equitable growth. Tamil Nadu is one of the richest biodiversity regions in India and ranks first in India in the floral biodiversity. With 15 Wild life sanctuaries, 15 Bird Sanctuaries, 5 Tiger Reserves, 4 Elephant Reserves, 5 National Parks and 3 Biosphere Reserves. Tamil Nadu's Forest and wildlife wealth is unparalled. It is in this context that conservation of Forest and Wildlife wealth in Tamil Nadu assumes great significance. Considering the necessity to conserve the rich biodiversity of Tamil Nadu and prevent illegal forest and wildlife trade that a Forest and Wildlife Crime Control Bureau shall be set up to detect and prevent organized forest and wildlife crimes at State level, with following objectives.

i. Combat forest and wildlife crime through a well-designed institutional network of trained forest personnel.

ii. Gather information related to wildlife crime and illegal trade including Trans boundary trade.

iii. Coordinate with various National and International organizations to access information and intelligence with the view to reduce and control forest and wildlife crime.

iv. Create a State level forest and wildlife Crime Data Bank to assist investigating agencies.

v. Develop and implement various standard operating protocols relating to forest and wildlife crime.

vi. Create a cadre of well trained officials from among the Government Department s over the years for effective monitoring of illegal trade.

vii. Improve investigation quality for better appreciation of evidence contributing to better investigation and control of illegal wildlife trade.

viii. Build informant networks among local communities that live in close proximity to forest and wildlife habitats

ix. Map poaching and illegal trade hotspots in the State for better action.

Tamil Nadu Forest and Wildlife Crime Control Bureau (TN FWCCB) will be helpful to understand the latest trends and related models of forest and wildlife crime patterns. It shall also empower the Forest Department through IT solutions in criminal intelligence gathering and effective enforcement of Forest and Wildlife Acts.

The Tamil Nadu Forest and Wildlife Crime Control Bureau (TN FWCCB) shall develop and

maintain State-wide data on forest and wildlife offences, forest offenders and planned wildlife smuggling incidences. It shall use required information technology practices and forest and wildlife crime information in conjunction with intelligence agencies such as Customs, Revenue Intelligence, State Police and other State Forest Department s. This will help for better adaptation to changing crime and criminal practices in the current context.

The headquarters of the Bureau shall be at Chennai. Four zonal offices at Chennai, Coimbatore, Madurai and Ramanathapuram shall be set up. Expert committee constituted for the detailed and meticulous planning for establishment of the bureau under the chairmanship of Principal Chief Conservator of Forests (Head of Forest Force)

4.11 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.

4.12 State Level Conference of District Collectors, Police Officers and Forest Officers.

The State Level Conference of District Collectors, Police Officers and Forest Officers was chaired by the Hon'ble Chief Minster on 12.03.2022, which is the First time in the history of Forest Department to participate in this conference.

5. Missions

5.1. Green Tamil Nadu Mission

Forests and Trees are essential for sustaining life on our planet. Forests and Trees contribute to food security, sustainable agriculture protection of biodiversity, sustainable livelihoods and economic prosperity. Forests and Trees are important carbon sinks and have a central role to play in meeting the challenge of climate change.

Increasing Forest and Tree cover is important to ecology and economy as a viable nature-based solution which will aid in mitigating adverse impact of climate change. Extreme weather events in the recent past have increased, leading to large scale devastation along coasts, urban settlements, farmlands, forests and grasslands impacting life, property and biodiversity. There is a need to arrest these and mitigate the impact of these events.

Trees are nature’s climate solution and play an important role in climate change management. Though, tree planting is not the only solution, enhancing forest cover is undoubtedly the single most important intervention for a sustainable clean and green future. Tree plantations have been a vital source of fuel, fibre, food, fodder and timber, providing an important buffer during times of crop losses due to pests or extreme weather incidents. Agro forestry has contributed greatly to the resilience off arms and farmers. Trees beyond forests will aid and support carbon storage, reduce pressure on forest resources while meeting the needs of humanity.

The State of Tamil Nadu intends to sustainably manage its forest and tree cover recognising it’s key role in climate change adaptation and mitigation. The State plans to augment the national efforts in creating the additional carbon sink of 2.5 to 3billion tons in its forest and tree cover by the year 2030 as a part of its Nationally

Determined Contribution (NDC) commitments under the Paris Agreement by adopting two-pronged strategy as below:

(i) Forest land restoration by encouraging planting of indigenous/native species which locally adapt to rainfall and temperature extremes and promote biodiversity, critical in addressing the concerns of climate change.

(ii) Increasing Tree cover outside conventional forests for climate change adaptation and mitigation and for improving income opportunities of farming communities, by actively promoting agro forestry.

Accordingly, the Hon'ble Finance Minister, while presenting the Revised Budget for 2021-2022, made an Announcement on the floor of Tamil Nadu Legislative Assembly on 13.08.2021

that "under the leadership of the Hon'ble Chief Minister, this Government will launch the Green Tamil Nadu Mission with the objective to increase the Forest and Tree Cover in the State from present 23.8% to 33% of the geographical area of the State by the year 2030-2031 as per the Vision of the Government of Tamil Nadu".

Inconsonance with the afore mentioned announcement, Government orders are issued for the launch of "Green Tamil Nadu Mission" with following objectives:

i) Increase the Forest and Tree Cover in the State from present 23.8% to 33% by the year 2030-2031 as per the National Forest Policy, 1988 and Vision of the Government of Tamil Nadu, through Afforestation activities on the degraded forest land scape and tree planting activities outside the forest areas.

ii) Expand tree cover on farmlands to complement agricultural crops. Build a robust database on farmers and the growing stock in their land for developing a strong institutional marketing linkage for tree growers to enhance income opportunities.

iii) Improving growing stock and biodiversity in the State of Tamil Nadu through community-public-private participation (CPP Mode).

Under this Mission, 261 crores seedlings of native trees of economic and ecological significance will be planted over a period of10 year on suitable public lands like Urban areas, Farms, Educational Institutions, Temple grounds, Sacred Groves, Industrial Areas, Tank Foreshore, Padugai areas, areas under the control of Defense

and Police establishments etc., covering an area of about 13,500 sq.km. Utmost care will be taken to ensure that suitable tree species with optimum growth are planted considering edaphic and climate conditions of the site. This will ensure optimum survival after planting. Planting of non-native species, tree planting drives on grasslands and wetlands and promotion of monoculture will be discouraged. Under the "Green Tamil Nadu Mission", the role of Agroforestry would be instrumental in getting closer to the objectives of achieving 33% geographical area under Forest and the Tree cover as per the National Forest Policy, 1988 and the vision of the Government for which the Government of India has already issued the Operational Guidelines under the National Mission for Sustainable Agriculture (NMSA).

The adverse impact of climate change will be felt more strongly in coastal and inland areas of the State causing changes in

frequency and intensity of storms, increase in temperature and precipitation, sea level rise, shoreline erosion, droughts, inundation of urban and rural areas and increased salinity leading to depletion of availability of freshwater. In order to manage the impact of climate change, the Government have already announced two other Missions viz., Tamil Nadu Climate Change Mission and the Tamil Nadu Wetlands Mission in addition to Green Tamil Nadu Mission.

For effective management of the above three Missions and to ensure that they achieve their underlying objectives, the Government have also created a new Special Purpose Vehicle (SPV) viz., Tamil Nadu Green Climate Company (TNGCC)which in turn shall setup a specialized Project Management Unit (PMU) for coordinating and monitoring of project activities in partnership with the Tamil Nadu

Infrastructure Fund Management Corporation Limited (TNIFMC).

5.2 Tamil Nadu Wetlands Mission

Wetlands offer a multitude of ecosystem services which have significant impact on the socio-economic sphere of our lives. Millions of people depend on wetlands for their livelihood. They play a critical role in water purification, ground water replenishment, drought and flood management. Conservation of wetlands is essential for water and food security. Role of wetlands has become even more important in the light of adverse and serious impact of climate change. Wetlands are particularly impacted by climate change, especially sea-level rise, coral bleaching as a result of increased sea surface temperatures, and changing hydrology in inland

waters. Wetlands are known to be repositories of carbon and are considered as “carbon sinks”.

Wetlands are considered to be natural climate regulators as they play an important role in maintaining water balance in an ecosystem. Innumerable plant and animal species thrive in wetlands. Wetlands also offer refuge to millions of migratory and resident birds and are hotspots for biodiversity. Importance of wetlands as tourist attraction is also well known. Protection of wetlands and their conservation is therefore essential for survival of living beings.

The Climate Change is altering hydrological regimes and leading to increasing vulnerability of the wetlands, while encroachment, solid waste dumping, unsustainable tourism infrastructure development and pollution are degrading the health of the wetlands impacting the lives and livelihoods of the people. It is also widely acknowledged that global climate change is likely

to increase the likelihood of potentially abrupt changes in wetlands which can be large in magnitude and impossible to reverse. Thus, the wetlands being an important Carbon and Methane sink and has the potential for reversing the global warming related climate vulnerabilities and risk to the environment and human lives.

Government of Tamil Nadu is committed to protect its wetlands through a comprehensive conservation and management plan. During the Budget Speech for the year 2021-22, the Hon'ble Minister for Finance and Human Resources Management has made the following Announcement among others:

> *"Under the leadership of Hon'ble Chief Minister, this Government will launch the '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 crores"*

Accordingly, Government of Tamil Nadu have decided to implement 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, with the following broad objectives: -

Objectives of the Mission

i) Identify, map and inventories wetlands in the State of Tamil Nadu.

ii) Prepare extensive documentation viz., Integrated Wetlands Management Plan for Notification of identified wetlands under the Wetlands (Conservation and Management) Rules, 2017.

iii) Notification of identified wetlands under the Environment (Protection) Act, 1986 and Rules framed there under for their protection and conservation.

iv) Undertake comprehensive eco-restoration of wetlands in accordance with proven scientific strategies and evidence-based methodologies.

v) Raise awareness on wetland conservation through public awareness campaign.

vi) Promote research, inventory and monitoring of wetland resources for effective management.

vii) Promote and support sustainable livelihood options in order to ensure productivity while protecting wetland resource.

viii) Promote stakeholder participation for effective management of wetlands.

ix) Conserve wetland biodiversity through community-based approaches.

Timeline:

The time line stipulated for the above Mission will be for 5 years from 2021-2026.

Outcomes Expected:

1. Minimizing the rate of loss of natural wetlands and wherever feasible enforce "net zero wetland degradation" with the help of Government, Experts, NGO's and local communities or the wetland mitras.
2. Notification of a minimum of 100 wetlands in the State aligning the Wetlands (Conservation and Management) Rules, 2017
3. Declaration of minimum 50 wetland sites of international significance as RAMSAR sites for affording highest order of protection to such wetlands for sustainable flow of the

ecosystem benefits for the sustenance of human lives and future generations.

4. Preparation of additional 500 Brief Documents for prioritizing new set of wetlands for the purpose of new Notification and RAMSAR site designation

5. Preparation of 100 Integrated Wetland Management Plans (IMPs) of the identified wetlands including the RAMSAR sites. The IMPs shall detail on the biodiversity, ecosystem services and value of wetlands for the current and the future periods.

6. Restoring 100 prioritized wetland ecosystems and deriving the Total Economic Valuation of wetland ecosystem benefiting the local communities in the State.

7. Improvement in water-related ecosystem services, such as clean drinking water, water for agriculture and flood regulation, erosion control, sediment deposition, carbon sequestration, increase in agricultural production, inland fisheries and tourism activities.

8. Inclusive, safe, resilient and sustainable cities and human settlements by ensuring that the wetlands act as natural sponges absorbing rainfall, provide protection against coastal and river flooding and partially offset the need for man-made infrastructure.

9. Reduction in the incidences of drought, protection of coastal area for fisheries, nursery ground for more fish production, sediment stabilisation of coastal zones

through green recovery by way of restoring 10 sq.km mangroves, sea grasses and coral rehabilitation for sustaining marine ecosystems.

10. Reduction in incidences of nutrient enrichment from current level of 100% to 25% by promoting organic farming adjoining the wetlands by the end of 5 years.

11. Reduction in the waste accumulation adjoining marine and fresh water ecosystems from 100% to 25% by promoting Circular Economy (CE), keeping the local communities (Rag Pickers) in the loop for the successful CE solutions. Efforts will focus on first preventing degradation of riparian areas, as its degradation will lead to dumping of wastes that slowly gets

expanded to the inland and coastal wetlands.

12. Introduction of Carbon Credit System in the wetlands restoration Programme and involve local communities for reaping the benefits of future voluntary Carbon market.

13. Promoting sustainable ecological restoration of wetlands by Flood zonation mapping, real time monitoring of irrigation and cropping patterns, water quality analysis and modelling, mapping of surface water bodies and wetlands by using Remote sensing and Geographic Information System (GIS)

14. Generate widespread awareness amongst the people and communities on the ecosystem value of the wetlands and the need for its conservation and wise use for the sustenance of future generations

15. Integration of Wetland Conservation into Sectoral Development Plans for avoiding urbanization on green and blue assets preventing further wetland degradation.

6. Action Plan for 2022-2023

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

Based on a proposal sent by the State Government, the Government of India has sanctioned a new JICA funded project titled "Tamil Nadu Biodiversity Conservation and Greening Project for Climate Change Response (TBGPCCR)" with an outlay of Rs.920.52 crores for implementation over 8 years from 2022-23 to 2029-30. The Minutes of Discussions (MoD) and the Loan Agreement (LA) were signed on 05.01.2022 and 31.03.2022 respectively.

The project aims to mitigate and adapt to climate change and improve ecosystem by undertaking biodiversity conservation, human wildlife conflict mitigation measures, promoting supply chain development, livelihood improvement activities and management capacity development, thereby contributing to sustainable socio-economic development in Tamil Nadu.

The project comprises of 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.

The major expected outcomes from the project by year 2032 include increase in Carbon storage by 4 lakh MT, restoration of 3.6 ha. of Coral reef area, restoration of 600 ha. of sea grass and 300 ha. of sea weed, increase of

mangrove cover over an area of 1050 ha., 60,000 ha. increase in Trees Outside Forest (TOF) cover and capacity building for 5400 departmental staff, etc.

During the first year of the project i.e. during 2022-23, it is proposed to implement the approved activities namely raising and planting of 68.40 lakh seedlings in urban and peri-urban areas, digging of elephant proof trenches over 25 kms., establishment of Hi-tech Central Nurseries in 8 Forestry Extension Centres, Eco-tourism and eco-development activities, improvement of infrastructure and mobility, etc. with an outlay of Rs. 116.81 crores.

6.2 Restoration of Degraded Forests landscape Project

Towards Restoration of Degraded Forests landscape with various Afforestation Plantation models like Miscellaneous Species Plantations, Red Sanders, Mangroves, Shola Forests and

Sandal, carrying out Soil and Moisture Conservation and Rain Water Harvesting works, Increasing Tree cover by planting tress outside Forests by providing seedlings to the Farmers and Institutions, Forests Fire Protection and Disaster Management

The NABARD has sanctioned a loan amount of Rs.45698.15 lakhs for implementing the project from 01.04.2021 to 31.03.2027. Under this project an area of 33290 ha of degraded forest has been proposed to be planted with 33,50,000 numbers of seedlings.

6.3 Botanical Garden at Chennai

Botanical gardens are serving as biodiversity hubs and as recreational spots for the public. During the Budget Speech for the year 2022-23, this Government has announced to setup a botanical garden at a cost of Rs.300 crore near

Chennai in partnership with Kew Gardens of London.

6.4 Project Nilgiri Tahr

The Nilgiri Tahr is a majestic mountain ungulate that lives in the montane grassland and shola forest habitats of the Western Ghats. They are sure-footed and can climb steep cliffs and reach high altitudes with ease. Currently the Nilgiri Tahr are found only in mountains of the Western Ghats ranging from Nilgiris in the north to Kanniyakumari in the south covering parts of Tamil Nadu and Kerala. Mukurthi National park, Eravikulam National Park, and Grass hills National Park of the Anamalai Tiger Reserve are some of the well-known habitats of Nilgiri Tahr where these animals are found in large numbers.

The fully grown adult male develops a distinctive saddle patch on their backs, which earns them the name 'Saddlebacks'. The saddle patch evolves into different colours with its age

which ranges from off-white or tan to silvery colour. The Nilgiri Tahr is fully protected under Schedule-I of the Indian Wildlife (Protection) Act, 1972. The animal faces many challenges such as fragmented and shrinking habitat, anthropogenic pressures, lower birth rates etc., due to which it is listed under Endangered species category in the red list of the IUCN.

This species is found mostly in the montane grasslands and the Shola ecosystems and can be called the "Mountain guardians". Presence of these species indicate the health of Shola-grassland ecosystem which is a source of many of Tamil Nadu's major rivers.


Nilgiris Tahr

For the conservation of Tamil Nadu's State animal, expansion of its habitat and to spread awareness among the public, during the Budget Speech for the year 2022-23, this Government has announced to implement "Project Nilgiri Tahr" with an initial allocation of Rs.10.00 crore.

6.5 Nature Park for Children

To generate awareness about forests and wildlife among children from a young age, during the Budget Speech for the year 2022-23,this Government has announced to set up a Children Nature Park at an estimated cost of Rs.20.00 crore. Nature park for Children will house birds, butterflies and animals by remodeling the Guindy Children's Park.

6.6 Forest Commission

During the Budget Speech for the year 2022-23, Government has announced to set up a Forest Commission to recommend policy changes

needed in forest conservation, expansion of green cover, involvement of tribal in forest management, prevention of man- animal conflict, capacity building and modernization initiatives in the Forest Department.

6.7 Development of Eco-tourism Sites

Tamil Nadu is blessed with evergreen forests and scenic tourist destinations. It is the policy of the Government to promote eco-tourism without harming the forests. Based on this, during the Budget Speech for the year 2022-23 this Government has announced that, Sethumadai (Coimbatore District) Manavanur and Thadiyan Kudisai (Dindigul District) and Yelagiri (Tirupathur District) will be developed as eco-tourism sites in public private partnership mode.

7. 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 endeavor 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.

7.1 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 life forms 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.

7.2 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 green cover, building a strong forestry extension service and utilising rich traditional knowledge of the tribal communities are also important components of the Forest Policy.

7.3 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

7.4 Sustainable Development Goals

The Sustainable Development Goals (SDGs) are set goals for global prosperity agreed by member nations of the United Nations in order to tackle economic, political and environmental challenges faced by the planet. A total of 17 SDGs were announced at the UN Conference on Sustainable Development in 2012 which are further defined into 169 targets and 232 indicators. The governments worldwide are

accountable to achieve the agreed goals by 2030.Each goal offers specific and actionable targets. SDG goals 14 and 15 are directly linked with the Department. Twenty-seven indicators have been defined for priority implementation by the Ministry of Environment, Forests and Climate Change (MoEF&CC).

7.4.1 Department work for SDGs

(a)Department SDG unit

The SDG units have been formed in the Forest Department with the following composition. Forest Department (State Level)

Sl. No.	Name of the Officer / Designation	Status
1.	Additional Principal Chief Conservator of Forests, (Planning and Budgeting)	Chairperson
2.	Additional Principal Chief conservator of Forests (Wildlife)	Member

Sl. No.	Name of the Officer / Designation	Status
3.	Additional Principal Chief conservator of Forests (CAMPA & Forests Settlement)	Member
4.	Statistical Officer (J Section)	Member
5.	Programmer (MIS)	Member
6.	One Assistant	Member

Forest Department (Division /District Level)

Sl. No.	Name of the Officer / Designation	Status
1.	District Forest Officer	Chairperson
2.	Assistant Conservator of Forests	Member
3.	One Forest Range Officer to be nominated by District Forest Officer / Chairperson	Member
4.	One Superintendent in the Office of the District Forest Officer	Member

Further, a Nodal Officer has also been nominated in the Department, who along with the SDG unit continuously monitors and updates data in the SDG Dashboard in close coordination with the SDG cell under the Planning and Development Department, the Working Groups 7 (Goals 13,14 and 15) and 6 (Goal 12), Division units and field offices consistently aiming at achieving the targets.

(b) Meetings of the Working Groups

Due participation and effective involvement were ensured in the Working Group meetings of the Working Groups 2, 6 and 7 held on 12/8/2021, 1/12/2021 and 9/2/2022 respectively.

(c) Goals linked to the Department

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 domain that overlap with the forest and wildlife sectors.

SDG14 is dedicated to sustainably manage and protect marine and coastal ecosystems from pollution, as well as address the impact of ocean acidification.

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, Restoration of degraded forest areas, Protection of terrestrial and aquatic biodiversity, Catchment Area Management,

Removal of invasive alien species and Conservation of genetic diversity are the major schemes towards achieving this goal.

(d) Targets and indicators and performance in the baseline, SDG India Index 2.0 and 3.0.

As per the SDG India Index (2.0), the State of Tamil Nadu ranked fourth out of the nine coastal States implementing the SDG 14.

As per the SDG India Index (3.0), three indicators were highlighted as low performing in respect of Environment, Climate Change and Forest Department for which separate meeting with action points was held to improve the

performance of these indicators with adequate interventions. As per the latest ISFR report 2021 released by Forest Survey of India, this indicator has shown improvement.


Pichavaram mangroves


Mangrove afforestation at Muthupet, Thiruvarur

(e) Indicator performance in the SDG reports received

As per the NITI Aayog SDG India Index, Tamil Nadu is ranked 4th among the States. In respect of Goal 15, the State has improved its Rank from 12th in 2018 to 8th in 2019 which is a remarkable progress.

(f) Indicators at the State Level (State Indicator Framework)

13 Targets and 27 Number of indicators in respect of Forest Department find place in the State Indicator Framework. The above indicators fall under the SDG 14 and 15 which are being constantly monitored at the State level. A few indicators / sub indicators in respect of a few parameters of the Department have been requested for modification.

7.4.2 Programmatic interventions focusing on improving the SDG indicator.

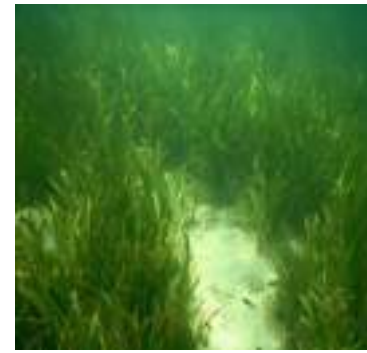
The SDGs have become Centre stage of the development plans and aspirations of the national and State Governments. The Department has pioneered in achieving the SDG goals through its programmes with due focus on achieving the SDG targets.

Department initiatives on SDG 14 (Life below water)-The Department is implementing focused schemes for managing mangrove forests, wetlands and the Marine National Park. As per the latest Indian Survey of Forest Report (ISFR), 2021, mangrove cover of Tamil Nadu is 44.94 sq.km. Habitat improvement measures such as mangrove restoration, maintenance of older plantation, removal of invasive species, protection, eco development activities, awareness creation; monitoring and evaluation etc. are the major activities.

Coastal shelterbelt plantations are being raised to reduce the velocity of winds to minimize wind erosion and to act as a protective shield against natural calamities like Tsunami, cyclones, tidal surges and floods.

The management of Gulf of Mannar Biosphere Reserve and Gulf of Mannar Marine National Park are implementing projects / schemes related to biodiversity conservation, sustainable coastal zone management and livelihood development. With the objective of conserving the endangered marine mammal Dugong and its habitat, the Government of Tamil Nadu on 03.09.2021 had made announcement that, "In order to protect the endangered Sea Cow species and its marine habitats in Tamil Nadu, a "Dugong (Seacow) Conservation Reserve" will be established in the Gulf of Mannar, PalkBay".

Releasing the turtles



Sea grass cover

Dugong (Sea Cow)

Department initiatives on SDG 15 (Life on Land)-The Forest Department has been taking up various initiatives to increase the Forest area as a proportion to total land area and also the

percentage of forest and tree cover. The State of Tamil Nadu gives lot of emphasis on sustainable forest management leading to conservation of biodiversity, soil and moisture conservation, habitat protection and enrichment, mitigation of human-wildlife conflict and empowerment of people residing in and around forest areas. The State is also deeply committed to protect and conserve its wildlife. 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), 2021, the Forest Cover in the State is 26,419.23 sq.km, which is 20.31% of the State's geographical area. The Tree cover in Tamil Nadu has been estimated at 4,424 sq.km. The total Forest and Tree Cover in the State is 30,843.23 sq.km which is 23.7% of the State's geographical area.

With thrust on achieving the SDGs and overall development, the present Government of Tamil Nadu have announced two important missions.

Green Tamil Nadu Mission was launched 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 Department s, public and private institutions will be taken up with people's participation over 10 years.

Nursery

Tamil Nadu Wetlands Mission was launched 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.150crore.

Pallikaranai Marshland

7.4.3 Localization of district level indicator frame work for monitoring indicators and reducing district level inequities.

Localization of SDGs has been strongly advocated by the Central Government as part of SDG implementation Strategy. It is essential to take the agenda of localization of SDGs to the district level indicator framework as Districts are the key players in State level performance. The State Government completed framing the

indicator framework exercise at the District Level which will be a boost in the journey towards attainment of SDG goals.

7.4.4 SDG specific best practices

The Forest Department is fully committed to the global SDG target of 2030. The Department has embarked on several ambitious programmes in orientation with the achievement of SDG targets and indicators. Several initiatives require convergence of multiple stakeholders and integrated strategies. Such are the Green Tamil Nadu Mission and Tamil Nadu Wetlands Mission announced by the present Government.

The Green Tamil Nadu Mission is mooted with the aim of increasing the forest and tree cover of Tamil Nadu to 33 % of geographical area of the State by the year 2030-31 from the existing

23.8%. As 50 % of the target planting area are non- forest lands it requires stronger collaboration with the landscape stakeholders including line Department s (Agriculture, Rural Development and Panchayat Raj, Industries, Horticulture etc.) and private land owners. Similarly, the Tamil Nadu Wetlands Mission launched with the aim of restoring the wetlands of the State needs concerted efforts and coordinated action plan involving multiple Department s mainly the land-owning Department s. It is conceived as a five-year mission to identify and map 100 wetlands and restore the ecological balance with focus on livelihood options.

7.5 National Working Plan Code

As per National Working Plan Code 2014, Working Plan is a management document of a

Forest division. It largely deals with the evaluation of the status of forest resources and outcomes of the past management practices and provides plan for future management on a sustainable basis. It is regularly written for a period of 10 years. Working Plan is a tool for planning scientific management of forests.

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 the prescriptions of Working Plans, Management Plans and Tiger conservation plans.

8. Statutory Bodies for Forest and Wildlife Management

8.1 Tamil Nadu State Biodiversity Board

Biodiversity or the variety of life forms on earth, is essential for the sustained availability of ecosystem services which are essential for sustenance and well-being of all forms of life, especially so, in a vastly changed scenario of climate change and the current pandemic. Conservation and sustainable use of biodiversity is, therefore, critical to our attainment of climate resilience, food, water and ecological security and as a matter of fact, in the long run, to our very existence.

In the year 1994, India became a party to the Convention on Biological Diversity (CBD) which promotes conservation of biological diversity, sustainable use of its components and fair and equitable sharing of benefits arising out

of the use of genetic resources. As a part of its national commitments as a signatory to the Convention, India enacted the Biological Diversity Act, 2002 and the rules framed in furtherance thereof, which provides a legal framework for institutionalising community- led, sustainable biodiversity conservation. The Act mandates all States to constitute respective State Biodiversity Boards to implement the provisions of Act, which among other things, seeks to empower local communities to protect biodiversity. Pursuant to the above, the Tamil Nadu Biodiversity Board was set up in 2008 as an autonomous, statutory and regulatory body of the Government of Tamil Nadu with the mandate to implement the provisions of the Act in letter and spirit.

Section 41 of the Act mandates each local body to constitute a Biodiversity Management Committee (BMC) within its area for the purpose of promoting conservation, sustainable use and documentation of biological diversity and pursuant

to this, BMCs have been constituted in 13607 local bodies so far. One of the main functions of each BMC is to prepare, maintain and validate a People's Biodiversity Register (PBR) which is an inventory of biological resources available in the territory of the BMC. People's Biodiversity Registers (PBRs) have also been prepared for all the BMCs constituted and currently their updation and validation is in progress.

District level Technical Support Groups (TSGs) headed by the Collector have been constituted to extend technical guidance to the BMCs with a view to empower and strengthen them and also assist them in the preparation, updation and validation of PBRs.

As per the Guidelines for Operationalization of Biodiversity Management Committees (BMCs), the BMCs are entitled for a start-up fund for their formation and establishment. In this regard, out of Rs. 72 lakhs start-up funds provided by the National Biodiversity Authority, an amount of

Rs. 45.60 lakhs was disbursed to 90 Block Level Model BMCs as the first instalment on 13.12.2021 by the Hon'ble Minister of Forests and Chairperson of TNBB. The remaining amount of Rs. 26.39 lakh was also distributed to 90 block level model BMCs by the TNBB on 18.3.2022 as second installment.

The Board has been conducting training programs for the BMCs and other stakeholders on site and through virtual mode. So far, 90 BMCs have been trained. The Board has also been creating various publicity and training resource materials for this purpose. Capacity building training has been conducted for various line Department officials and other stakeholders.

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 as "Biodiversity Heritage Sites" (BHS). The Government desires to declare at least one

BHS in each district. So far 36 proposals have been received and are under examination.

Under the Access and Benefit Sharing (ABS) provisions of the Act, entities desiring to access and commercially utilise biological resources, are under a statutory obligation to share benefits in applicable cases with the benefit claimers. So far, an amount of Rs 53.04 lakh has been collected and out of it, Rs 49.15 lakh was distributed by the Hon'ble Minister of Forests and Chairperson of TNBB during the 10th Meeting of the Board held on 13.12.2021.

The Government is firmly committed to steer the State towards achieving ecological security and making meaningful progress towards the Sustainable Development Goals (SDGs) by, among other things, extending necessary handholding support to the infant BMCs so as to make them vibrant and self sustaining bodies, strengthening the State Biodiversity Board and mainstreaming biodiversity concerns into the

ongoing programmes of the State through a concerted multi-stakeholder approach for deriving the desired synergy.

8.2 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.

8.3 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 Hon'ble 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.

8.4 Tamil Nadu State Wetland Authority (TNSWA)

The Tamil Nadu State Wetlands Authority is the nodal authority for the Conservation, Protection and Ecological restoration of all wetlands in State of Tamil Nadu. The State of Tamil Nadu was one of the pioneer States in constituting the State Wetlands Authority in the year 2016 which was subsequently re-constituted in the year 2019 after the wetlands (Conservation and Management) Rules 2017 came into force with effect from 26.09.2017. Similarly, the District Level Wetlands Management Committee was constituted in the year 2016 and re-constituted in

the year 2019 to assist and support the State Wetlands Authority on the matters relating to Conservation, Management, Protection and implementation of Wetlands (Conservation and Management) Rules 2017 and to ensure inter-sectoral linkages for successful management of the Wetlands at the District Level.

The Tamil Nadu State Wetlands Authority has been constituted under the Chairpersonship of the Hon'ble Minister for Forests. The Chief Secretary to the Government is the Vice Chairperson of the said Authority. Under the State Wetlands Authority, the District level Wetlands Management Committees are functioning in all the Districts under the chairpersonship of the District Collector for the protection, conservation and management of the wetlands.

Functions of Tamil Nadu State Wetlands Authority

- Preparing list of wetlands
- Preparing digital inventory of all wetlands
- Preparing list of Natural wetlands to be notified
- Develop comprehensive list of activities to be regulated, permitted and prohibited within the notified wetlands
- Define strategies for conservation and wise use of wetlands
- Review integrated management plan for each of the notified wetlands
- Ensure enforcement of Wetlands (Conservation and Management) Rules, 2017
- Function as nodal authority for all wetland specific matters within the State
- Issue necessary directions for conservation and sustainable management of wetlands to the respective implementing agencies
- Create awareness among local community about importance of wetlands.

Wetlands ecosystems are vital parts of hydrological cycle, highly productive, support rich biodiversity and provide a wide range of ecosystem services such as water storage, water purification, flood mitigation, storm buffers, erosion control, aquifer recharge, microclimate regulation, aesthetic enhancement of landscapes while simultaneously supporting many significant recreational, social and cultural activities. Several people depend on wetlands for their livelihood as well as for food and water. Recognising the aforementioned facts, the Hon'ble Finance Minister, Government of Tamil Nadu announced the first of its kind "Tamil Nadu Wetlands Mission" in the Legislative Assembly on 13.08.2021 for ecological restoration of 100 wetlands in a period of 5years for improving livelihood of the dependent communities.

Tamil Nadu Wetlands Mission will identify and map 100 wetlands in 5 years and restore the ecological balance with focus on livelihood options. It is proposed to prepare an Integrated Management Plan and undertake ecological restoration of wetlands through a purely participatory process involving local communities as well as all relevant stakeholders. All the activities will be inventorised through digital technologies. Under the said Mission, 100 natural Wetlands have already been identified for notification and ecological restoration for ensuring wise use of these Wetlands based upon the Integrated Management Plans.

In addition, around 50 Wetlands connecting to the Pallikaranai marshland are being proposed for ecological restoration for mitigation of Chennai urban and semi urban flooding based on the

recent large-scale inundation of the Chennai city and its suburbs. The said wetlands shall also be ecologically restored based upon the Integrated Management Planning.

The District level Wetlands Management Committee meetings are conducted periodically since the announcement of the Tamil Nadu Wetlands Mission and due to the proactive actions taken by the District Collectors and the DFOs/Wildlife Wardens for the first time, the identification of all the Wetlands with geo coordinates and Revenue Survey numbers are being taken up at the District level.

A Ramsar site is a wetland site designated to be of international importance under the Ramsar Convention, also known as "The Convention on Wetlands", an intergovernmental environmental treaty established in 1971. The

convention is called Ramsar convention as it was signed in Ramsar city in Iran. This convention protects wetlands of international significant. There are 170 member countries in Ramsar convention. India has been a member of Ramsar convention since 01.02.1982.

As per Ramsar Convention Wetland means an area of marsh, fen, peatland or water; whether natural or artificial, permanent or temporary, with water that is static or flowing, fresh, brackish or salt, including areas of marine water the depth of which at low tide does not exceed six meters.

As the State of Tamil Nadu had only one Ramsar site i.e., Point Calimere Wetlands complex, Nagapattinam declared in the year 2002, these potential sites of international significance were identified as a part of Tamil Nadu Wetlands Mission for bringing international

recognition to the State as well as for seeking domestic and foreign funding for these Wetlands.

Wetlands are the nature-based solution for mitigating the adverse impacts of the Climate Change. Keeping this in view it is proposed to restore the marine habitat through the sea grass planting in an area of about 10 acres inside the Gulf of Mannar under the guidance of the National Centre for Sustainable Coastal Management, Chennai for creating additional carbon sink as well as improving the habitat for the Dugong. The scientific studies have indicated that the Sea grasses alone sequesters carbon of 2,74,00,000 Tons (27.4 Tera grams) per hectare per year. The State desires to become a pioneer State in creating additional carbon sink in the wetlands.

Tamil Nadu Wetlands Mission envisages to make the wetlands Conservation and Management

as a people's movement, accordingly wetland mitras (Iranilangalin Nanbargal) have been created in each district, so that the local communities own the wetland and facilitate the efforts of the Government in protecting these unique productive ecosystems for the future generation.

8.5 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 Department s 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.

8.6 Compensatory Afforestation Fund Management and Planning Authority (CAMPA)

Tamil Nadu Compensatory Afforestation Fund Management and Planning Authority (TN CAMPA) is a statutory 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 Authority is responsible for implementing and monitoring various activities such as Compensatory

Afforestation & other stipulated activities, Forest & Wildlife Management activities etc., which are funded through TN CAMPA. The Governing Body of the Authority is chaired by the Hon'ble 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.

9. 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 sources 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

9.1 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 specialized 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.

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.

Protection Vigilance Forest Wildlife Crime Bureau (PVFWCB) came into force in G.O.(Ms) No.117, Environment & Forests (FR.SPL.A) Department, dated.27.09.2017 the erstwhile post

of Additional Principal Chief Conservator of Forests (Protection & Vigilance) was re-designated as the post of Additional Principal Chief Conservator of Forests, Protection, Vigilance and Forests, Wildlife Crime Bureau (PVFWCB). 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 Emergency situations. The PVFWCB wing co-ordinates with other law enforcement agencies such as the Wildlife Crime Control Bureau (WCCB), Customs, Police& other Department s to protect the Forestry resources. Collects intelligence inputs from its own 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 2021-22 the covert operations of PVFWCB in various instances have resulted in several high-

profile seizures & arrests wherein illegal contraband in the form of Elephant Tusks, Ambergris, 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.

9.1.2 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.,

9.2 Forest Conservation

9.2.1 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.

9.2.2 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, 2021, mangrove cover of Tamil Nadu is 45 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.

9.2.3 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 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)

9.2.4 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 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.

9.2.5 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 tribal's for alternative livelihoods

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

9.2.6 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.

9.2.7 Forest Research

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 Centre 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. Seedling Seed Orchards (SSO), Clonal Seed Orchards (CSO), Seed Production

Area (SPA) and Seed Stand (SS) have been established and are being maintained. More than 1000 Candidate Plus Trees (CPT) have been identified and quality seeds are being collected from them.

Its main objectives are collection of good quality seeds from selected CPTs, refrigeration, storage and distribution, raising of quality seedlings and distribution, 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.

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 ecosystem. 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, 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, SS, SPA 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.

10. Forest Revenue and Expenditure Details

10.1 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	Budget Estimate 2022-23
1.	Sandalwood	198.25
2.	Timber	6.65
3.	Supply of raw materials to industries	86.51
4.	Other Minor Forest Produce	62.63
5.	Farm Forestry plantations excluding refund	945.00
6.	Sale of bamboo, cashew, softwood plantations, etc.,	70.09
7.	Other receipts	3745.17
	Sub total	5114.30
	Deduct recoveries (-)	0.16
	Total	**5114.14**

10.2 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)	Budget Estimate 2022-23
State Expenditure	71084.19
Externally Aided Project	0.00
Centrally Sponsored Schemes	0.01
Schemes shared between State and Centre	2038.26
Total	**73122.46**

11. Forest Corporations

11.1 Tamil Nadu Forest Plantation Corporation Limited (TAFCORN)

TAFCORN established in the year 1974, having mandate to raise, maintain and harvest Eucalyptus clonal pulpwood and cashew clonal plantations to meet the needs of paper industries, to increase the productivity, potential of forests, to provide rural employment, to conserve soil and moisture and to supply firewood to fulfill the needs of the rural people.

TAFCORN has an authorized share capital of Rs.10 crore and a paid-up share capital of Rs.5.64 crore held by the Government of Tamil Nadu. Tamil Nadu Forest Department has leased 71,540.50 ha, of Reserved Forests to TAFCORN. As per Government orders, TAFCORN pays 30% of the annual turnover as lease rent to the Forest Department.

By adopting modern Silviculture techniques such as high yielding clones, mechanization of planting activity, irrigation facilities etc., TAFCORN has been successful in increasing productivity per ha. The details of the plantations raised and expenditure involved during 2020-21 and 2021-22 are given below.

Sl. No.	Raising planta-tion species	Physical (Ha.)		Financial (Rs.in lakh)	
		2020-21	2021-22	2020-21	2021-22
1.	Eucalyptus	1462	1009	535.63	488.34
2.	Cashew	319	252	72.68	154.70

The Government suggested to take up field study/ experiments for planting suitable alternative commercial pulpwood species in place of Eucalyptus pulpwood in view of interim injunction passed for ban on Eucalyptus planting by the Hon'ble Madras High Court of Madurai Bench, accordingly clonal Casuarina plantation has been raised in 23.51 Ha. in Pudukkottai Region on a trial basis during the year 2021-22.

As per section 135 of Company Act 2013, TAFCORN is taking up Corporate Social Responsibility (CSR) activities every year. CSR amount is calculated as 2% on the average Net Profit of last three financial years comes to Rs.120 Lakhs for CSR activities during the year 2021-22 including unspent amount of previous years.

The Eucalyptus pulpwood supplied to paper mills during 2020-21 and 2021-22 are given below.

Details of Pulpwood supply made

Year	Quantity of Pulpwood supplied (M.T.)	Revenue (Rs.in lakh)
2020-21	239165.073	10642.85
2021-22 (31.03.2022)	224443.000	9987.72
2022-23 (Budget estimate)	196000.00	8722.00

TAFCORN is focusing to increase cashew clonal plantation productivity per ha. in the recent past. It is the second major revenue earner in the Corporation. The details of revenue realized are given below.

Revenue from Cashew

Year	Revenue (Rs. in lakh)
2020-21	1463.70
2021-22(31.03.2022)	1691.48
2022-23(Budget estimate)	1700.00

The revenue and expenditure details of the Corporation for 2020-21 and 2021-22 and the Revised Budget Estimate for 2021-22 are given below:

Year	Revenue	Expenditure	Profit (+) / Loss (-)	
			As per Budget	Actuals
2020 – 2021	13749.69	10287.76	--	3461.93
2021 – 2022 (Revised Budget Estimate)	12901.11	10581.81	2319.30	--
2022 2023 (Budget Estimate)	11478.45	9298.52	2179.93	--

Proposal for Plantations to be raised during 2022-23

Plantations	Physical (Ha.)	Financial (Rs.in lakh)
Eucalyptus	1210	485.33
Cashew	802	362.42

11.2 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

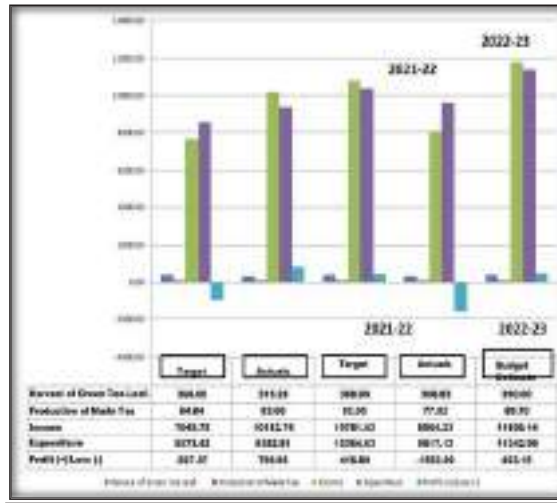
in the Forest areas of Nilgiris District and other suitable areas in the State of Tamil Nadu.

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

Phase	Year	Planted area in Ha.		
		Nilgiris	Anamalai	Total
Phase I	1969-1979	1747.32	..	1747.32
Phase II & III	1979-1984	795.87	..	795.87
Phase IV	1990-1995	554.21	956.358	1510.568
TOTAL		**3097.40**	**956.358**	**4053.758**

In G.O.(Ms) No.107 (Environment and Forests (FR.8) Department, dated 31.07.2018 and G.O.(1D) 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.

TANTEA-PERFOMANCE REPORT



	Target	Actuals	Target	Actuals	Budget Estimates
Harvest of Green Tea Leaf	3600.00	3415.89	3600.00	3598.83	3900.00
Production of Made Tea	84.00	83.00	91.00	77.02	85.70
Income	10643.70	10432.70	13781.63	8864.23	11838.16
Expenditure	10373.63	10332.81	13284.63	9817.13	11342.66
Profit (+)/Loss (-)	267.37	799.89	496.99	-952.90	495.49






11.2.1 Increasing the retail sale of tea

Action is being taken to appoint more wholesale/ retail dealers. At present TANTEA has 135 Retail Dealers, 15 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 267.500 MT of tea during the recent 3 years. 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 Telengana. Fresh orders have been received from the State of Chattisgarh to supply 100 MT of tea through Public Distribution System.

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

State Transport Corporation, Military Canteens, Post Office, Prison Department and TANGEDCO etc.

11.3. 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 3772.114 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 laborer's, and rehabilitation of Sri Lankan repatriates.
3. To avoid possible speculative trends in acquisition and management of rubber and other plantation estates.

11.3.1 Production and financial achievement

Production and financial achievements of Corporation are furnished below,

Sl. No	Particulars	2020-21	2021-22 (Tentative)	2022-23 (Budget Estimate)
a)	Production of Rubber (in M.T)	(Actual) **1479**	1622 (Tentative)	1300
b)	Income & expenditure (Rs.in lakh) Income Expenditure	(Audited) **3807.17 3547.47**	5159.79 4308.98 (Tentative)	(Subject to revision) **3924.99 4152.59**
c)	Profit (+) or Loss (-) Rs in lakh	**(+) 259.70**	850.81 (Tentative)	**(-) 227.60**

11.3.2 Future proposals

Rubber Plantations were raised gradually between the years 1961 and 1979 over a total

area of 4785.70 Ha. A rubber tree becomes tappable at the age of 7 years and its yield becomes very less and uneconomical after the age of 35 years and hence such area should be felled and replaced with fresh rubber plants 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 originally planted trees could not be completed as per the above-mentioned schedule, and the work of felling and replanting in the felled area, are still going on. Therefore, in order to get better production and productivity the old areas are being felled in phased manner and planting of high yielding clones of rubber plants are being undertaken.

It is expected that the financial status of the Corporation will become very sound by the time all the works of replantation are completed and majority of the replanted area attains the age of

above 7 years and brought under tapping and contributing to the revenue generation.

12. HIGHLIGHTS OF THE YEAR 2021-22

1. On the occasion of the birthday of late Kalaignar Dr. M.Karunanidhi, former Chief Minister of Tamil Nadu, 38,000 tall saplings have been planted in 38 districts of Tamil Nadu @1000 seedlings in each of the districts on 3rd June, 2021 in order to promote tree cover and amelioration of Environment.

2. Special Task Force for COVID-19 surveillance and monitoring in Zoos / National Parks / Wildlife Sanctuaries / Tiger reserves / Reserve Forest has been constituted vide G.O.(Rt)No.264, Environment, Climate Change and

Forests (FR.5) Department dated 16.06.2021.

3. Successful rewilding of elephant 'Rivaldo' after meticulous finding and scientific implementations and monitoring methodologies in MTR.

4. Successful Capture of the problematic tiger (MDT23) in Mudumalai tiger reserve after scientific implementations and monitoring methodologies.

5. Rescue of Tiger Cub and planned for release in wild for its rehabilitation in ATR.

6. Nearly 91% settlement of compensation paid for conflicts of previous years and this year cases.

7. Kazhuveli Bird Sanctuary (5151.60 Ha.) was notified under Section 18(1) of

Wildlife (Protection) Act 1972 on 06.12.2021

8. Ambergris seizures worth of Rs.75 crore in several operations with arrest of over 25 persons since July 2021.

9. Recovery of stolen tusks in 3 separate cases in ATR, Coimbatore and Hosur in the month of August21, October21 and February 22 within 2 weeks of detection of crime.

10. Use of drones and kumkis effectively to drive away animals from Nilgiris without disturbing and un-necessary capture and minimizing damages from July 2021.

11. Setting up of Green Tamil Nadu Mission and Tamil Nadu Wetland Mission under Tamil Nadu Green Climate Company (TNGCC)

12. First ever synchronized All Tamil Nadu Birds Census being conducted in three phases during Jan 22, Feb 22 and March 22. Phase1 focused on coastal and marine habitats, and phase 2 on wetlands and water bodies have been successfully completed. Preparation of the third phase on terrestrial birds is underway.

13. In interest of captive elephant health management and welfare new captive elephant transit rules were framed and is in practice from 09.02.2022 in Tamil Nadu.

13. CONCLUSION

Tamil Nadu Forest Department is fully geared to achieve the goal of 33% forest and tree cover as well as to protect the rich bio-diversity of the State, as envisaged in National Forest Policy,

1988 and State Forest Policy, 2018 of Tamil Nadu. Sincere efforts from a dedicated team are already underway and the same will be carried forward with added vigor and zeal through involvement of all stakeholders.

K.RAMACHANDRAN
MINISTER FOR FORESTS

Inauguration of Eco Park at Pallikaranai by the Hon'ble Chief Minister of Tamil Nadu on 10.12.2021.

Hon'ble Forest Minister Thiru K. Ramachandran Handing over Rs.10.39 Crore dividend of TAFCORN for the year 2020-21 to the Hon'ble Chief Minister of Tamil Nadu.

During the 10th meeting of the Tamil Nadu Biodiversity Board held on 13.12.2021, the Chairman of the Biodeversity Board Hon'ble Minister (Forests) has distributed cheques to the beneficiaries towards the fund collected through access and benefit sharing from the National Biodiversity Board

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