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Abbreviations

AD	Adaptation
ADB	Asian Development Bank
AED	Agricultural Engineering Department, Tamil Nadu
AG	Agriculture
AHP	Affordable Housing in Partnership
AIBP	Accelerated Irrigation Benefits Program
AMRUT	Atal Mission for Rejuvenation and Urban Transformation
AR	Artificial Recharge of groundwater
AR	Assessment Report
ARC	Arasu Rubber Corporation
ASB	Annual Severe Bleaching
ASCAD	Assistance to States for Control of Animal Diseases
ASHA	Accredited Social Health Activist
AT&C Losses	Aggregate Technical & Commercial losses
BAU	Business as usual
BCM	Billion Cubic Metre
BEE	Bureau of Energy Efficiency
BL	Base line
BLC	Beneficiary Led Construction
BR	Biosphere Reserve
CAAQMS	Continuous Ambient Air quality Monitoring Stations
CAD	Command Area Development
CAGR	Compound Annual Growth Rate
CAM	Coastal Area Management
CAMPA	Compensatory Afforestation Management and Planning Authority
CanESM2	Canadian Earth System Model
CASMB	Centre of Advanced Study in Marine Biology, Annamalai University
CB	Capacity Building
CBRN	Chemical, Biological, Radiological and Nuclear
CCA	Climate Change Adaptation
CCAM	Conformal Cubic Atmospheric Model
CCA-RAI	Climate Change Adaptation in Rural Areas of India
CCC&DM	Centre for Climate Change and Disaster Management
CCKN-IA	Climate Change Knowledge Network in India Agriculture
CCRCP	Chennai City River Conservation Project
CDRRP	Coastal Disaster Risk Reduction Project
CEA	Central Electricity Authority
CEIG	Chief Electrical Inspectorate to Government
CFA	Central Financial Assistance
CFA	Central Financial Assistance
CGWB	Central Ground Water Board
CHC	Community Health Centre
CLSS	Credit Linked Subsidy Scheme
CMA	Commissionerate of Municipal Administration
CMDA	Chennai Metropolitan Development Authority

CMDA	Chennai Metropolitan Development Authority
CMFRI	Central Marine Fisheries Research Institute
CMWSSB	Chennai Metropolitan Water Supply and Sewerage Board
CO	Carbon Monoxide
CO₂	Carbon dioxide
CORDEX	Coordinated Regional Downscaling Experiment
CPHEEO	Central Public Health and environmental Engineering Organization
CPREEC	C.P.R. Environmental Education Centre
CR	Conservation Reserve
CRRT	Chennai River Restoration Trust
CRZ	Coastal Regulation Zones
CSIRO	Commonwealth Scientific and Industrial Research Organisation
CSIS	Climate Services Information System
CSMCRI	Central Salt and Marine Chemicals Research Institute
CSR	Corporate Social Responsibilities
CSTEP	Centre for Study of Science, Technology and Policy
CUF	Capacity Utilization Factor
CUMTA	Chennai unified Metropolitan transport System
CWC	Central Water Commission
CZMP	Coastal Zone Management Plan
DDUGJY	Deen Dayal Upadhyaya Gram Jyoti Yojana
DFFDA	District Fish Farmers Development Agency
DFR	Detailed Feasibility Report
DHAN	Development of Humane Action
DISCOM	Distribution Companies
DoA	Department of Agriculture
DoAH	Department of Animal Husbandry
DoE	Department of Environment
DoF	Department of Fisheries
DoH	Department of Horticulture
DP	Demonstration Project
DPR	Detailed Project Report
DSM	Demand Side Management
DSS	Disaster Support System
DSSAT	Decision Support System for Agro technology Transfer
DST	Department of Science and Technology
DTCP	Directorate of Town and Country Planning
DTP	Directorate of Town Panchayat
DWDA	Tamil Nadu Water Development Agency
EC	End-Century
ECBC	Energy Conservation Building Code
ECV	Essential Climate Variable
EDC	Eco-Development Committees
EDL	Essential Drug List
EE	Energy Efficiency
EESL	Energy Efficiency Services Limited
EEZ	Exclusive Economic Zone

EF&CC	Environment Forest and Climate Change
EI	Emission Intensity
EIDC	Environment Information Dissemination Centres
EM	Efficient Microorganism
ENVIS	Environmental Information System, Tamil Nadu
EPRED	Environment Protection and Renewable Energy Development Fund
ES	Energy Efficiency
ETCCDI	Expert Team on Climate Change Detection Indices
ETI	Environmental Training Institute
ETRP	Emergency Tsunami Reconstruction Project
EWS	Economically Weaker Sections
FAME	Faster Adoption and Manufacturing of (Hybrid &) Electric Vehicles
FFDA	Fish Farmer's Development Agency
FIDF	Fisheries and Aquaculture Infrastructure Development
FR	Forest Resource
FRP	Fiber Reinforced Plastic
GCAM	Global Change Assessment Model
GCC	Greater Chennai Corporation
GCF	Green Climate Fund
GCM	General Circulation Model
GDP	Gross Domestic Product
GEF	Global Environment Facility Trust Fund
GEMS	Global Environmental Monitoring System
GHG	Green House Gas
GIS	Geographic Information System
GIZ	Deutsche Gesellschaft für Internationale Zusammenarbeit
GKMS	Gramin Krishi Mausam Seva
GoI	Government of India
GoM	Gulf of Mannar
GoMBR	Gulf of Mannar Biosphere Reserve
GoMBRT	Gulf of Mannar Biosphere Reserve Trust
GoTN	Government of Tamil Nadu
GSDP	Gross State Domestic Product
GW	Giga watt
GWB	Ground Water Board
H	High
HADP	Hill Area Development Program
HC	Hydrocarbons
HDI	Human Development Index
HH	House Hold
HIV	human immunodeficiency virus
HTL	High Tide Line
HUD	Health Unit Districts
IAMWARM	Tamil Nadu Irrigated Agriculture Modernization and Water Bodies Restoration and Management
IAY	Indira Awaas Yojana
ICAR	Indian Council for Agriculture

ICZMP	Integrated Coastal Zone Management Project
IDSP	Integrated Disease Surveillance Project
IDWH	Integrated Development of Wildlife Habitats
IEC	Information, Education and Communication
IFGTB	Institute of Forest Genetics and Tree Breeding
IFPS	Intensification of Forest Management Scheme
IFS	Integrated Farming System
IHHL	Individual Household Latrines
IMAGE	Integrated Model to Assess the Global Environment
IMD	Indian Metrological Department
IMR	Infant Mortality Rate
IMSWM	Integrated Municipal Solid Waste Management
IMTI	Irrigation Management Training Institute, Thuvakudy
INGO	International Non Governmental Organizations
INR	Indian Rupee
INRM	Integrated Natural Resource Management
IOM	Institute for Ocean Management
IP	Investment Project
IPCC	Intergovernmental Panel on Climate Change
IRS	Institute of Remote Sensing, Anna University
ISBIG	Incentivization Scheme for Bridging Irrigation Gap
ISSET	Institute for Social and Environmental Transition
ISFR	India State of Forest Report
ISSR	In Situ Slum Redevelopment
IUCN	International Union for Conservation of Nature
IUDM	Integrated Urban Development Mission
IWMP	Integrated Watershed Management Programme
JF	January, February
JFM	Joint Forest Management
JICA	Japan International Cooperation Agency
JJAS	June, July, August, September
JNNURM	Jawaharlal Nehru National Urban Renewal Mission
JSA	Jal Shakti Abhiyan
KfW	KfW Bankengruppe
KM	knowledge management
KVK	Krishi Vigyan Kendra
KWh	Kilo Watt hour
L	Low
LED	Light Emitting Diode
LGBR	Load Generation Balance Report
LPA	Long Period Average
LPCD	Litres Per Capita per Day
LPG	Liquefied petroleum gas
LTL	Low Tide Line
M	Medium
MAB	Man and Biosphere
MAM	March, April, May

MANAGE	Ministry of Agriculture and Farmers Welfare
MaxEnt	Maximum Entropy
MC	Mid-Century
MCM	Million cubic metre
MEEP	Municipal Energy Efficiency Programme
MESSAGE	Model for Energy Supply Strategy Alternatives and their General Environmental Impact
MFP	Minor Forest Produce
MGNREGS	Mahatma Gandhi National Rural Employment Guarantee Scheme
MI	Mitigation
MIDH	Mission for Integrated Development of Horticulture
MIE	Multilateral Implementing Entities
MINARS	Monitoring of Indian National Aquatic Resources
MIS	Management Information System
MLCP	Multi-Level Car Parking
MLD	Millions of Litres Per Day
MMM	Multi-Model Mean
mm	Milli metre
MMR	Maternal Mortality Ratio
MoEF&CC	Ministry of Environment, Forest and Climate Change
MoP	Ministry of Power
MPES	Multi-Purpose Evacuation Shelters
MSP	Minimum Support Price
MSSRF	M.S. Swaminathan Research Foundation
MSW	Municipal Solid Waste
MTPA	Million Tons Per Annum
MU	Million Units
MW	Mega Watt
NAAQM	National Ambient Air Quality Monitoring
NABARD	National Bank for Agriculture and Rural Development
NADP	National Agricultural Development Project
NAIS	National Agricultural Insurance Scheme
NAMP	National Air Quality Monitoring Programme
NAP	National Afforestation Programme
NAPCC	National Plan Action on Climate Change
NATCOM	India's Initial National communication
NBA	National Biodiversity Authority
NCA	National Commission of Agriculture
NCCR	National Centre for Coastal Research
NCSCM	National Centre for Sustainable Coastal Management
NDA	National Designated Authority
NDC	Nationally Determined Contribution
NE	North-East
NFDB	National Fisheries Development Board
NFDB	National Fisheries Development Board
NFHS	National Family Health Survey
NFSM	National Food Security Mission

NHM	National Horticultural Mission
NHM	National Health Mission
NICE platform	Network for Information on Climate (Ex)Change
NICRA	National Initiative on Climate Resilient Agriculture
NIE	National Implementing Entities
NIF	National Indicator Framework
NISE	National Institute for Solar Energy
NITI Aayog	National Institution for Transforming India
NMPB	National Medicinal Plants Board
NMSA	National Mission For Sustainable Agriculture
NMSDA	National Mission For Sustainable Agriculture Rainfed Area Development
NMSKCC	National Mission of Strategic Knowledge for Climate Change
NP	National Park
NRCP	National River Conservation Plan
NRDWP	National Rural Drinking Water Programme
NREGA	National Rural Employment Guarantee Act
NRHM	National Rural Health Mission
NRSE	New and Renewable Sources of Energy
NRY	Nehru Rozgar Yojana
NTFP	Non-Timber Forest Products
NUHM	National Urban Health Mission
NULM	National Urban Livelihood Mission
NWM	National Water Mission
ODF	Open Defecation Free
OND	October, November, December
OSR	Open Space Reservation
PA	Policy Action
PAT	Perform, Achieve and Trade
PEACE	Promotion of Energy Audit and Conservation of Energy
PHC	Primary Health Centre
PKVY	Paramparagat Krishi Vikas Yojana
PMAY	Pradhan Mantri Awas Yojana
PMFBY	Pradhan Mantri Fasal Bima Yojana
PMGSY	Pradhan Mantri Gram Sadak Yojana
PMKSY	Pradhan Mantri Krishi Sinchayee Yojana
PRECIS	Providing Regional Climates for Impacts Studies
PWD	Public Works Department
RADP	Rain-fed Area Development Program
RCA 4	Rosby centre regional climate model
RCM	Regional Climate Model
RCP	Representative Concentration Pathway
RD	Research and Development
RD&PR	Rural Development & Panchayati Raj Department
REC	Rural Electrification Corporation
REDD+	Reducing Emissions from Deforestation in Developing Countries
REMO	Regional Climate Model
RKVY	Rashtriya Krishi Vikas Yojana

RPO	Renewable purchase Obligation
RRT	Rapid Response Teams
RSPM	Respirable Suspended Particulate Matter
RWH	Rainwater Harvesting
SAMP	Special Area Management Plan
SBM	Swachh Bharat Mission
SC	Scheduled caste
SCADA	Supervisory Control and Data Acquisition
SDA	State Designated Agency
SDC	Swiss Agency for Development and Cooperation
SDG	Sustainable Development Goals
SDMA	State Disaster Management Authority
SDMRI	Suganthi Devadason Marine Research Institute
SDRF	State Disaster Response Fund
SECF	State Energy Conservation Fund
SG&SWRDC	State Ground and Surface Water Resources Date Centre
SH	Sustainable Habitat
SHCs	Soil Health Cards
SHGs	Self Help Groups
SICOM	Society for Integrated Coastal Management
SKO	Superior Kerosene Oil
SLNP	Street Lighting National Programme
SLR	Sea Level Rise
SME	Small and medium Industries
SMHI	Swedish Metrological and Hydrological Institute
SPM	Suspended Particulate Matter
Sq.km	Square Kilo Metre
SRS	Sample Registration System
SST	Sea Surface Temperature
ST	Scheduled Tribe
SW	South-West
SWM	Solid Waste Management
TAF CORN	Tamil Nadu Forest Plantation Corporation Limited
TANGEDCO	Tamil Nadu Generation and Distribution Corporation Limited
TANII	Tamil Nadu Innovation Initiatives
TANTEA	Tamil Nadu Tea Plantation Corporation Limited
TANTRANSCO	Tamil Nadu Transmission Corporation Limited
TANUVAS	Tamil Nadu Veterinary and Animal Sciences University
TBGP	Tamil Nadu Biodiversity conservation and Greening Project
TCMPF	Tamil Nadu Co-operative Milk Producers' Federation Limited
TDEF	Tropical Dry Evergreen Forest
TEDA	Tamil Nadu Energy Development Agency
TERC	Tamil Nadu Electricity Regulatory Commission
TFR	Total Fertility Rate
TMC	Thousand Million Cubic
TN	Tamil Nadu
TNAMB	Tamil Nadu Agricultural Marketing Board

TNAU	Tamil Nadu Agricultural University
TNCDBR	Tamil Nadu Combined Development and Building Rules, 2019
TNEB	Tamil Nadu Electricity Board
TNERC	Tamil Nadu Electricity Regulatory Commission
TNFA	Tamil Nadu Forestry Academy
TNFCRI	Tamil Nadu Fisheries College and Research Institute
TNFD	Tamil Nadu Forest Department
TNHB	Tamil Nadu Housing Board
TN-ICPP	Tamil Nadu- Integrated Coastal Protection Plan
TNJFU	Tamil Nadu Dr. J. Jayalalithaa Fisheries University
TNLDA	Tamil Nadu Livestock Development Agency
TNMSC	Tamil Nadu Medical Services Corporation
TNPCB	Tamil Nadu Pollution Control Board
TNSACS	Tamil Nadu State AIDS Control Society
TNSAMB	Tamil Nadu State Agricultural Marketing Board
TNSAPCC	Tamil Nadu State Action Plan on Climate Change
TNSCB	Tamil Nadu Slum Clearance Board
TNSGDC	Tamil Nadu Surface and Groundwater Data Centre
TNSLURB	Tamil Nadu State Land Use Research Board
TNSPCB	Tamil Nadu State Pollution Control Board
TNSUDP	Tamil Nadu Sustainable Urban Development Project
TNUDP III	Third Tamil Nadu Urban Development Project
TNUIFSL	Tamil Nadu Urban Infrastructure Financial Services Limited
TOF	Trees Outside Forests
TPP	Thermal Power Plants
TRANSTAN	Transplant Authority of Tamil Nadu
TSPM	Total Suspended Particulate Matter
TWAD	Tamil Nadu Water Supply and Drainage Board
TWAD	Tamil Nadu Water and Drainage Board
UDAY	Ujjwal DISCOM Assurance Yojana
UIDSSMT	Urban Infrastructure Development Scheme for Small and Medium Towns
UJALA	Unnat Jyoti by Affordable LEDs for All
ULB	Urban Local Bodies
UNDP	United Nations Development Programme
UNESCO	United Nations Educational, Scientific and Cultural Organization
USD	United State Dollar
VAMBAY	Vaalmiki Ambedkar Awas Yojana
WALAMTARI	Water and Land Management Research Institute, Hyderabad
WALMI	Water & Land Management Institute, Aurangabad
WB	World Bank
WBCIS	Weather Based Crop Insurance Scheme
WLS	Wildlife Sanctuary
WR	Water Resource
WRD	Water Resources Department
WRO	Water Resource Organization

Executive Summary

In 2019, climate change is an undisputed reality causing severe impacts on the natural environment, human lives, and economic assets and activities, thus posing an urgent need for ambitious mitigation and effective adaptation action. Both of these, in turn, need to be well planned and coordinated for maximum efficiency, in particular in contexts with competing development pressures and needs.

In this aspect, sub-national planning of action on climate change is a necessary extension of national-level planning, in particular in federal countries like India. India's **National Action Plan on Climate Change (NAPCC)** outlines for addressing climate-related challenges through National Missions. **State Action Plans on Climate Change (SAPCC)** are required to effectively ensure that objectives are aligned with national and regional development priorities. Tamil Nadu State Action Plan on Climate Change (TNSAPCC), launched in 2015, which provided the first State-wide and cross-sectoral climate change impact and vulnerability assessment, and formulated adaptation and mitigation strategies to be carried out by the State Government Departments. These strategies, in turn, were organized into seven **State Sectors**, aligned with the eight National NAPCC Missions.

Since the formulation of the TNSAPCC, important changes have impacted the realm of climate change policy planning. Not only have the science, knowledge and understanding of climate change evolved at the global and at the regional level, but so has the policy context, with the ratification of important development and climate goals at the International level, such as the Sustainable Development Goals (SDGs) and the Paris Agreement temperature and adaptation goals. Related all-Indian commitments, such as those in the **Nationally Determined Contribution**, and Tamil Nadu State's goals, such as localised SDG targets in the **SDG Vision 2030**, pose the need for an evolving, appropriate climate change action planning process. Similarly, State also involves (or) launches many important flagship schemes are of utmost importance to climate change action. In the light of these developments, the TNSAPCC2.0 at hand was developed to reflect this changing context and enhance effective mitigation and adaptation planning and action. It takes stock of the degree of TNSAPCC implementation, and uses lessons learnt for future climate change action planning for the period 2020 –2030.

Tamil Nadu is a diverse State in terms of geographic features and natural resource endowments, and among the most progressive States in India in terms of economic and social circumstances. The "Vision Tamil Nadu 2023" moves towards an Accelerated, Innovative and Inclusive Growth. As evidenced by Tamil Nadu's rich history, it's economic and social fabric has evolved under stable environmental conditions over many centuries. Tamil Nadu's climate is shaped by spatial differences between plain, Coastal and mountainous regions and by four distinct seasons – The highest value attained for maximum temperature 34.7degree Centigrade is in the pre- monsoon season (March, April, May) while its lowest maximum value (29.8 degree Centigrade) is attained in Post monsoon season. A rainy season accounting for the bulk of annual rainfall 50 percent during Post Monsoon (October, November and December), and a Monsoon season from June to September which contribute 34 percent. However, the latest scientific assessments evidence changes in climatic conditions, with inter alia 0.6 °C increase in minimum temperatures regionally and spatially distinct changes in rainfall amount and intensity robustly detectable since 1950s.

While the magnitude of future change is surrounded by uncertainty related to different sources, a further intensification of these trends seems likely, with seasonal maximum/ minimum temperature increases of 1.7°C/ 3.4 °C (mitigation scenario) to 2.2°C/ 3.8°C (high emission scenario) projected by the mean of the regional climate models. Rainfall projections, which are surrounded by higher levels of uncertainty, suggest slight increases in total annual rainfall under the different scenarios. Changes are, however, more pronounced for certain seasons and regions, with the monsoon and post-monsoon season becoming wetter and the winter and pre-monsoon season become drier.

Changes in rainfall intensity and extreme precipitation events are moreover likely but uncertain in magnitude.

Observed and projected changes in climatic conditions expose different socio-economic systems or sectors of economic activity to the risk of disruption. Sectoral vulnerabilities arise from observed and projected undesirable climate change impacts, and include threats to ecosystem services and species habitats (forest and biodiversity sector), decreasing crop and animal yields due to unfavorable heat conditions and precipitation events (agricultural sector), increases in the volatility of water availability (water resources), increases in the occurrence of both vector-borne and respiratory diseases (health sector), reduced energy system reliability due to (hydrological) extreme events and demand changes (energy sector), and exponential health and extreme event damages related to urbanization in an extreme climate (urban sector). Sectoral vulnerabilities can further be aggregated, and spatial information on aggregate climate change vulnerability is a useful input to stocktaking and adaptation prioritization – in fact, increases in indicators of aggregate vulnerability found here suggests the need for enhanced adaptation measures.

Given this ever more urgent need for adaptation, and the fact that a comparison of planned **TNSAPCC** strategies and a record of departmental activities during the TNSAPCC period shows an at best partial implementation of the former, this document then identifies forward-looking strategies and actions that will enhance the fulfillment of the five adaptation-related TNSAPCC State sectors, namely the Sustainable Agriculture, Water Resources, Forest & Biodiversity, Coastal Area Management and Strategic Knowledge Management. Similarly, forward-looking mitigation strategies are defined that will contribute to the fulfillment of the Enhanced Energy Efficiency and State Solar Mission, as well as the State Mission on Sustainable Habitat.

The elaboration of these strategies in a participatory process led by nodal and line departments – along with the identification of responsible line departments - ensure ownership of these strategies by the key actors. Their design and selection in a manner that maximizes their contribution towards Tamil Nadu's 2030 SDG targets and the Indian NDC goals, as well as synergies with ongoing initiatives such as the central and State programmes and schemes, facilitates mainstreaming and warrants financing and rapid implementation. Moreover, the design and selection of prioritized adaptation and mitigation measures was based on an analysis of key barriers preventing more substantial progress on TNSAPCC implementation, so that learning from the TNSAPCC period are properly incorporated.

While a longer list of useful strategies and activities is presented, a shortlist of five to six prioritized strategies/ activities is proposed for each of the seven State sectors. At State, the implementation of **TNSAPCC2.0** strategies and activities will be overseen by the TNSAPCC Steering Committee (chaired by the Chief Secretary) and the nodal department (Department of Environment). While each proposed strategy/ activity is clearly assigned to a responsible line department, all strategies/ activities under a particular sector are moreover handled and coordinated by a nodal mission department (Sustainable Agriculture – Department of Agriculture, Water Resources -Institute of Water Studies- Public Works Department, Forest and Biodiversity- Tamil Nadu Forest Department, Coastal Area Management- Department of Environment and Strategic Knowledge Management – Centre for Climate Change and Disaster Management, Enhanced Energy Efficiency and State Solar Mission – Tamil Nadu Energy Development Agency, Sustainable habitat –Chennai Metro Water Supply and Sewage Board).

Key intentions of the State to address Climate Change concerns are enshrined in various policies and these have been summarized below:

Key Policy Elements	State Performance
National Action Plan on Climate Change	The State has all eight sectors aligned to NAPCC
State Action Plan on Climate Change	The State Action Plan on Climate Change (SAPCC) for Tamil Nadu was formulated in 2014 and the final draft of TNSAPCC was endorsed by MoEF&CC in March 2015
Sustainable Agriculture	<p>The main policy of the State is to usher in the Second Green Revolution, and thereby raise farm-based incomes through Rashtriya Krishi Vikas Yojana (RKVY)</p> <p>Agriculture Programmes like Paddy Mission, Millet Mission, Pulses Mission under National Agricultural Development programme (NADP), National Food Security Mission, Rain-fed Area Development Program (RADP), Irrigated Agriculture Modernization and Water-Bodies Restoration and Management (IAMWARM)</p> <p>Pradhan Mantri Krishi Sinchayee Yojana (PMKSY)</p> <p>Horticulture Programmes like Integrated Horticulture Development Scheme</p> <p>Animal Husbandry Programmes</p> <p>Revised Breeding Policy for Cattle 2008</p> <p>Dairy Development Programmes</p> <p>Tamil Nadu Bovine Breeding Act 2019</p> <p>Fisheries programmes</p>
Water Resource	<p>The Tamil Nadu Additional Assessment and Additional Water Cess Act 1963</p> <p>The Water (Prevention and Control of Pollution) Act, 1974</p> <p>Chennai Metropolitan Area Ground Water (Regulation) Act, 1987</p> <p>State Water Policy, 1994</p> <p>The Tamil Nadu Panchayat Act, 1994</p> <p>The Tamil Nadu Farmers Management of Irrigation Systems Act, 2000</p> <p>National Water Policy, 2002</p> <p>Tamil Nadu State Groundwater Development and Management Act, 2003</p> <p>The National Environment Policy, 2006</p> <p>The Tamil Nadu Protection of Tanks and Eviction of Encroachment Act, 2007</p> <p>On-going Programmes and Projects- National Action Plan on Climate Change for Cauvery delta, Tamil Nadu Irrigated Agriculture Modernisation and Water Bodies Restoration and Management Project (TN IAMWARM), Coastal Protection Works, Flood Management Programme, Dam Rehabilitation and Improvement Project</p>
Forest & Biodiversity	<p>The forests in Tamil Nadu are managed in line with the provisions of the National Forest Policy (1988)</p> <p>National Forest Policy 2017</p> <p>National Environment Policy 2016</p> <p>Tamil Nadu State Environment Policy, 2017</p> <p>National Afforestation Programme</p> <p>Tamil Nadu Forest Act, 1882</p> <p>Forest (Conservation) Act, 1980</p> <p>Tamil Nadu Rosewood Tree (Conservation) Act, 1994</p>

	<p>Environment Protection and Renewable Energy Development Fund (EPRED)</p> <p>Ongoing State Programmes/Schemes- Nature Conservation, Community Waste Land Development Programme, Tamil Nadu Afforestation Project (Phase II), Tamil Nadu Biodiversity Conservation and Greening Project, Sandalwood Plantation, Teakwood Plantation, Minor Forest Produce, Forest Research, Consolidation of Forests, Raising of free supply of seedlings, Erection of Solar Fence to protect the farm land from wild animals, Hill Area Development Programme, Eco-Development (Western Ghat Development Programme), Asian Elephant Depredation and Mitigation Measures, Creation of fodder tree plantation in forest areas to improve the wildlife habitat, Eco-restoration and Conservation of Pallikaranai Marsh Land</p> <p>Centrally sponsored programmes and schemes like Conservation and Management of Biosphere Reserves, Tamil Nadu Biodiversity conservation and Greening Project (TBGP)</p>
Coastal Zone Management	<p>Coastal Aquaculture Act 2005</p> <p>Coastal Aquaculture Rules 2005</p> <p>Developing an Integrated Coastal Zone Management Plan for Tamil Nadu which include Shoreline management, Biodiversity conservation, Controlling Coastal Pollution like Solid Waste Management, Livelihood improvement plans, Improvement of fishery resources, Encourage development of ecotourism</p> <p>Disaster Risk Management Programme</p> <p>Gulf of Mannar Biosphere Reserve (GoMBR)</p> <p>Coastal Area Management Project of Tamil Nadu Forest Department</p> <p>Coastal Regulation Zone (CRZ) Notification</p>
Energy Efficiency, Renewable Energy and Solar Mission	<p>New and Renewable Sources of Energy Policy (NRSE) 2012</p> <p>Policy on net metering for Grid Interactive Roof-Top Solar Photo Voltaic Power Plants</p> <p>Roof Top Solar Energy</p> <p>The Chief Minister's Solar Powered Green House Scheme</p> <p>Perform, Achieve and Trade (PAT) Scheme aimed at industrial efficiency</p> <p>State has reported 100 percent electrification</p>
Sustainable habitat	<p>Several water supply schemes under TNUDP-III, JNNURM, KfW, JICA, IUDM, IGFF and Capital Grant Fund. Housing for All Mission – Tamil Nadu Slum Clearance Board (TNSCB) is the nodal agency and has been implementing various housing schemes under BLC and AHP by In-situ and resettlement and rehabilitation. TNSCB has also proposed to rehabilitate all the slums along the waterways (Adyar, Cooum and Buckingham Canal) within a period of five years. (2019 – 2023).</p> <p>Underground Sewerage Scheme</p> <p>Satellite Town Schemes</p> <p>Integrated Municipal Solid Waste Management (IMSWM) system</p> <p>Special Solid Waste Management (SWM) Fund</p> <p>Tamil Nadu Common Development Promotion Rules, 2018</p> <p>National Urban Transport Policy (2006) aims to ensure safe, affordable, comfortable, quick, reliable and sustainable access for the growing number of city residents.</p>

Mission for Sustainable Agriculture

This is a comprehensive scheme trying to address issues relating to climate change adaptation in agriculture and allied sector. The allocation under the rainfed area development component of the National Mission for Sustainable Agriculture has shown a rise after 2016-17 while the allocations under Rashtriya Krishi Vikas Yojana (RKVY) are showing a decreasing trend. The State had fund allocation for sub-Mission on agro forestry only during 2016-17.

Poverty and Food Security

According to the report published by the Planning Commission in 2014, during 2011-12, about 22.4 percent of population in the State was living under poverty as compared to the National average of 29.5 percent. As compared to 2009-10, the rural poverty in the State has decreased. The performance of the State in terms of Food Security is improving every year as the food grain production shows an increasing trend. By 2030, the poverty level is expected to be in the range of 3.3 percent as per this criterion.

Water Mission and Water use Efficiency

The main objective of the National Water Mission (NWM) is to conserve water, minimize its wastage and ensuring it equitable distribution. The overall goal of this Mission is to improve water use efficiency by 20 percent. This Mission possesses strong adaptation capacity with mitigation co-benefits through efficient energy use as well as carbon sequestration.

The vision of Pradhan Mantri Krishi Sinchayee Yojana (PMKSY) is to extend the coverage of irrigation 'HarKhetKoPani' and improving water use efficiency 'More crop per drop' in a focused manner with end to end solution on source creation, distribution, management, field application and extension activities.

Jal Shakti Abhiyan (JSA)

Jal Shakti Abhiyan (JSA) is a time-bound, mission-mode water conservation campaign. The JSA will run in two Phases: Phase 1 from 1st July to 15th September 2019 for all States and Union Territories; and Phase 2 from 1st October to 30th November 2019 for States and UTs receiving the retreating monsoon (Andhra Pradesh, Karnataka, Puducherry and Tamil Nadu). During the campaign, officers, groundwater experts and scientists from the Government of India will work together with State and district officials in India's most water-stressed districts* for water conservation and water resource management by focusing on accelerated implementation of five target intervention. The JSA aims at making water conservation a Jan Andolan through asset creation and extensive communication.

In Tamil Nadu, Jal Shakti Abhiyan campaign is carried out under the leadership of the Additional Chief Secretary, Rural Development & Panchayat Raj (RDPR), with the full involvement of Gram Panchayats, Women Self- help Group members and the community.

The five intervention areas identified by MoRD, GOI, for the implementation of MGNREGS works under Jal Shakti Abhiyan:

1. Water Conservation and Rain Water Harvesting
2. Renovation of Traditional and other Water harvesting
3. Re-use, Borewell recharge structure
4. Water shed Development
5. Intensive Afforestation

Enhancement of Carbon Sink and Green India Mission

The forest cover in Tamil Nadu is 26,281 sq.km which is 20.21 percent of the State's geographical area. However, only 286 sq.km of forest is very dense forest, 2,435 sq. km is moderately dense

and 5,979 sq km is open forest. The total carbon stock in the forest of Tamil Nadu is 229.338 million tonnes (840.906 million tonnes of CO₂ equivalent) which is 3.24 percent of the total forest carbon stock of the country.

Mission on Enhanced Energy Efficiency

Mission on Enhanced energy efficiency includes the following components:

- Energy Conservation Building Code (ECBC) and UJALA
- Street Lighting National Programme (SLNP), Municipal Energy Efficiency Programme (MEEP), including energy efficient pumps
- Faster Adoption and Manufacturing of (Hybrid &) Electric Vehicles (EV) - (FAME)
- Demand Side Management (DSM)

Solar Mission and Renewable Energy

Tamil Nadu stands forefront in Renewable Energy sector among all States and has a total installed capacity of 11,113 MW as on 31.03.18. Tamil Nadu Solar Energy Policy, 2012 aims for developing Tamil Nadu as a world leader in solar energy. Tamil Nadu Vision 2023 forecasts a creation of incremental generation of 5000 MW of wind energy and 5000 MW of solar energy by 2023. Tamil Nadu has a total solar installed capacity of 2034 MW as on 31.03.2018.

Mission on Sustainable Urban Habitat

Two important Missions have been launched by the Government of India for several actions that focus on urban habitations, waste handling and emission reduction in the cities. These two Missions are Atal Mission for Rejuvenation and Urban Transformation (AMRUT) and Smart City. Beside this, it has also launched National Urban Livelihood Mission (NULM).

Swachh Bharat Mission (SBM)

One of the major public funded sanitation programmes SBM has shown significant result in the State. As per the Swachh Bharat Mission – Gramin dashboard, the State has achieved 100 percent household toilet coverage in 2018.

Mission on Strategic Knowledge for Climate Change

The objective of Tamil Nadu State Mission on Strategic Knowledge is to build a greater understanding of the climate variability, its effect on various sectors and vulnerabilities associated with the sector. It tries to allow for sustainable adaptation to climate change and mitigation the impact of drivers of climate change. The State has also developed a State Action Plan on Climate Change (SAPCC) for assessment, adaptation and mitigation measures with an aim to examine the targets, objectives and achievements of the National Missions specified by the National Action Plan on Climate Change (NAPCC).

Sustainable Agriculture

Agriculture is a predominant sector in Tamil Nadu's economy, engaging more than 70 percent of the population for their livelihood. However, only 22 percent of income comes from agriculture and allied sectors. The total cultivated area in the State is 6.5 million hectares with 8.1 million operational land holders having average farm size of 1.15 hectares. Around 92 per cent of the farmers belong to small and marginal category, operating 61 per cent of the farm area of the State with average land holding of lesser than 0.80 hectare.

As Tamil Nadu gets its major share of rainfall during northeast monsoon, the dryland cultivation is mainly practiced during this season. The principal food crops include paddy, millets and pulses. Commercial crops include sugarcane, cotton, sunflower, coconut, cashew, chillies, gingelly and groundnut.

The growth of the agriculture sector in the State is constrained by many factors including the occurrence of frequent and recurrent hydro-meteorological events such as droughts, extreme rainfall events and cyclones, reduced availability of water, declining cropped area, deterioration in soil health due to depletion of topsoil and decline in organic carbon content, decrease in cropping intensity and shortage of labour force.

The contribution of livestock sector to the gross State Domestic product is 2.58 percent and it constitutes 24.80 percent the total agriculture and allied sector. The dairy sector in Tamil Nadu is mostly in the hands of 2 million marginal and landless farmers.

	<i>No. of Activities (2021-30)</i>	<i>Budget Proposed in crore INR (2021-30)</i>
Adaptation based	45	48,031.94
Mitigation based	3	20,900.00
Both	3	2,800.00
Total	51	71,731.94

Major Achievements

Breeding and testing of varieties tolerant to various climatic stress

Tamil Nadu Agricultural University has introduced eight new crop varieties during 2017-18

Land management for better crop establishment

In order to bring more area under cultivation, the GoTN has created additional irrigation potential by extending an assistance to the District Watershed Development Agencies for adopting water saving technologies (Per drop More crop), enhancing recharge of aquifers and sustainable water conservation practices.

Organic farming including horticultural crops

Under PKVY, Organic farming is promoted through adoption of organic village by cluster approach and Participatory Guarantee System (PGS) certification. From 2015-16 to 2016-17, an area of 1020 Ha has been brought under Organic cultivation.

Increase the use of Micro Irrigation technology

The PMKSY Micro Irrigation Scheme is being implemented with the aim of conserving water and increasing the production and productivity of horticultural

Budget Proposed in TNSAPCC	Rs. 23,093.14crore
Budget Allocated from 2012-17	Rs. 4,641.99crore
Percentage Share	20.1%

and agricultural crops. From the year 2012-2017, an area of 2,69,250 ha has been brought under Drip and Sprinkler Irrigation

Water Resources

Climate change has significant impact on water resources. The overall water stress is continuously increasing and due to climate change a sharp decline in precipitation is expected. Studies also predict reduction in number of rainy days and increase in frequency of extreme rainfall events that will result in frequent droughts and floods. Tamil Nadu constitutes 4 percent of India's land area and is inhabited by 6 percent of India's population, but has only 2.5 percent of India's water resources. More than 95 percent of the surface water and 80 percent of the ground water have already been put into use.

The demand for water in Tamil Nadu is increasing at a fast rate both due to increasing population and due to larger per capita needs triggered by economic growth. The per capita availability of water resources, however, is just 900 cubic meters when compared to the national average of 2,200 cubic meters. Agriculture is the largest consumer of water in the State using 75 per cent of the State's water resources. Demand from other sectors such as domestic and industries have been growing significantly.

The projected demand of water in 2050 has increased from 54395 MCM in 2010 to 57725 MCM in 2015 and ultimately the supply demand gap raised from 16.88 percent in 2010 to 24.05 percent in 2050. In order to meet this demand, augmentation of existing water resources by development of additional sources of water or conservation of the existing resources through impounding of more water in the existing water bodies and its conjunctive use will be needed.

	No. of Activities (2021-30)	Budget Proposed in INR crore (2021-30)
<i>Adaptation based</i>	9	18,441.84
<i>Mitigation based</i>	0	0
<i>Both</i>	1	600
Total	10	19,041.84

Major Achievements

Hilly region interventions

- Rainwater harvesting structures have been constructed along the hill slopes of Western Ghats and eastern Ghats to collect the rainwater

Plain region interventions

- 213 Check dams, 29 Percolation ponds, 266 Recharge shafts, 2 Diaphragm walls, 5 Grade walls, a bed dam and 6 Sub-surface dykes were constructed under Master Plan Artificial Recharge Scheme (MPARS)
- Eco-restoration of Water Bodies

Coastal region interventions

- Periodical desilting has been carried out for the benefit of farming community to improve the status of soil organic matter content

Research and Capacity Building interventions

- Through NADP project, AWS network has been created at block level

Restoration of Water Bodies

Policy interventions

Pricing regulation for use of piped water for domestic use and drinking water

Budget Proposed in TNSAPCC	Rs12,626crore
Budget Allocated from 2012-17	Rs 34,685.95 crore
Percentage Share	275%

Forest & Biodiversity

As per ISFR 2017 by FSI, the forest cover in Tamil Nadu is 26,281 sq.km. which is 20.21 percent of the State's geographical area. In terms of forest canopy density in 2017, very dense forests occupied 12.47 percent (3386 sq.km.) of the total forest area in the State. The moderately dense forests covered 43.77 percent (8544 sq.km.), open forests covered 33.90 percent (5979 sq.km.), and scrubs covered 5.079 percent (1200 sq.km.) of the total forest area respectively. The total carbon stock in the forest of Tamil Nadu is 229.338 million tonnes (840.906 million tonnes of CO₂ equivalent) which is 3.24 percent of the total forest carbon stock of the country.

Ecosystems and associated services are sensitive to changes in climate and anthropogenic changes. Forests as discussed earlier are subject to multiple stresses. Climate change brings an additional stress that can result in serious impacts on the forests. Increasing temperatures usually result in an increase in the frequency of forest fires and pest and disease infestation in forests. Intermittent occurrences of drought and floods also result in an increase in soil erosion and degradation of the watershed, thereby affecting the forest cover. The changes in characteristics of ecosystems coupled with habitat degradation and fragmentation is likely to further weaken the ability of forests to continue to provide ecosystem goods and services.

	<i>No. of Activities(2021-30)</i>	<i>Budget Proposed in crore INR(2021-30)</i>
Adaptation based	24	1,976.48
Mitigation based	6	396.00
Both	7	461.96
Total	37	2834.44

Major Achievements

Participatory Forest Management or Joint Forest Management (JFM)

Planting and maintenance of 3.99 crore seedlings in the 32 districts throughout Tamil Nadu have been achieved through Massive Tree Planting Programme till 2017-18.

Tamil Nadu Biodiversity Conservation & Greening Project with assistance (Japan International Cooperation Agency)

Sandal Wood Plantation

Raising Palmyra plantation

Raising Teak Plantation in Padugai Lands

Promotion of Climate Resilient Agro and Farm Forestry

Under National Innovations in Climate Resilient Agriculture (NICRA) and other climate change adaptation programmes Climate Resilient Agro and Farm Forestry is being promoted in vulnerable regions of Tamil Nadu.

Training and extension activities to develop institutional capacity for biodiversity conservation and ecosystem management

At present, 13 Forest Protection Squads are functioning for the protection of forests, apart from territorial and wildlife staff. Besides the Forest Protection Squads, there are 5 Strike Force squads, 17 Forest Stations, 11 Roving Check Posts and 112 Forest Check Posts to protect the forest and wildlife wealth of the State.

Budget Proposed in TNSAPCC	Rs. 1528 crore
Budget Allocated from 2012-17	Rs. 1440.97 crore
Percentage Share	94.30%

Coastal Area Management

The Coastal State of Tamil Nadu is rich in marine resources with an array of ecosystem services that support the biodiversity as well as livelihood of the local communities. The Coastal stretch is not only zones of heavy population but also constitutes a hub with several flourishing industrial sectors like fishing, agriculture, tourism, shipping industry and other industries, which together help drive the State's economy. The identified ecologically important areas in Tamil Nadu are coral reefs and seagrass beds, mangroves and lagoon.

The coastal areas and resources are under immense stress through human influences like population growth, heavy dependence on the coastal wealth, over-exploitation of resources, developmental activities, and increased levels of pollution on the one hand, and through natural impacts such as cyclones, tsunamis, flooding, saltwater intrusion, siltation and climate change on the other.

The Major issue faced by the State regarding its marine resources is the increasing temperature, degradation of coral reefs, seagrass beds and mangroves, saltwater intrusion, excessive commercial fishing, unsustainable tourism and improper waste management system. In the TNSAPCC 2.0, several new activities on protection, conservation and management of marine resources, livelihood generation, capacity building, institutional arrangements and disaster resilience are proposed for implementation for the time period 2021-2030.

	No. of Activities (2021-30)	Budget Proposed (INR crore) for 2021-30
Adaptation Based	27	4,681.75
Mitigation Based	7	83.34
Both	4	11.01
Total	38	4776.10

Major Achievements

- **Coastal vulnerability Mapping**
- **Preparation of Coastal Zone Management Plan (CZMP) for Tamil Nadu**
- **Native Mangrove Plantation in coastal areas**
- **Conservation of mangrove forests**
- **Ecosystem based Climate proofing of watersheds Rehabilitation of Degraded coral Reef and sea grass in Gulf of Mannar Biosphere Reserve Water quality monitoring under Monitoring of Indian National Aquatic Resources (MINARS) and Global Environmental Monitoring System (GEMS)**
- **Emergency Tsunami Reconstruction Project**
- **Coastal Disaster Risk Reduction Project (CDRRP)**
- **Construction of Coastal defence structures, both hard and soft engineering structures for Coast stabilisation for protection against sea water intrusion**
- **Greenbelt/buffer zone/natural barrier set up through extension of coastal vegetation for protection against sea water intrusion**
- **Integrated Mangrove Fishery Farming System**
- **Fisheries Management for sustainable Livelihoods**

Capacity Building & Awareness programme

- Environment Information Dissemination Centres were formed
- Establishment of Climate change cell
- Special Area Management Plan (SAMP) development Check
- State Disaster Management Perspective Plan for 2018-2030

Budget Proposed in TNSAPCC	Rs 4420 crore
Budget Allocated from 2012-17	Rs 3089.85 crore
Percentage Share	69.9%

Strategic Knowledge for Climate Change

Strategic Knowledge for Climate Change is a major functional body of a State with vast repository of natural resources and, vulnerable to the impacts of climate change. The local communities as well as departments must be made aware of the sectoral vulnerabilities and challenges due to global change and the strategies that can be adopted for better adaptability and increased resilience to the same.

The State of Tamil Nadu extensively works on knowledge dissemination through various scientific working groups, educational organizations and research institutions to people at grass-root levels. In this regard, all the vulnerable sectors are assigned activities to enhance the knowledge base in their respective areas. The climate change vulnerable sectors identified in Tamil Nadu are: Sustainable Agriculture, Water resources, Forest & Biodiversity, Coastal Area Management, Energy Efficiency, Renewable Energy & Solar Mission and Sustainable Habitat.

The State along with the respective sectoral departments is developing a knowledge portal that would support in strategic decision making in order to adapt to the consequences of climate change and ensure security of the residing population through food availability, economic stability and environmental sustainability. The sectoral proposed activities are in line with the NDCs and SDGs.

In TNSAPCC 2.0, several new activities on strengthening of State Climate Change Cell, Campaign on climate awareness and Education, training to farmers on integrated farming system, studies on coral communities, ecosystem based climate proofed watershed have been proposed for implementation for the time period 2021-2030.

	No. of Activities (2021-30)	Budget Proposed (INR crore) for 2021-30
Adaptation Based	9	178.96
Mitigation Based	1	98.46
Both	2	3.45
Total	12	280.87

Major Achievements

Capacity Building & Awareness programme

- Action Research on Adaptation to Climate Change on rainfed farming
- 580 trainings and 279 demonstrations have been conducted under rainfed Area Development
- Study on diversity, abundance and role of reef binding coralline algae in coral reef ecosystem
- Study on Artificial reefs for the enhancement of fishery production and improved livelihood
- Training of 1176 Farmer Producer Groups on installation and commissioning of Micro Irrigation System
- Climate Change Adaptation Demonstration Projects
- SHG skill training
- Capacity building on Climate Resilient Development
- Awareness creation through workshops, seminars and exhibition

Budget Proposed in TNSAPCC	Rs 49 crore
Budget Allocated from 2013-14 to 2017-18	Rs 28.94 crore
Percentage Share	59.06%

Energy Efficiency, Renewable Energy and Solar Mission

The power sector of Tamil Nadu being one of the most diversified sectors in the country is undergoing a significant change that has redefined the industry outlook. Sustained economic growth continues to drive electricity demand in the State.

Tamil Nadu is the third largest consumer of electricity accounting for nearly 9 percent of total energy consumption in India in Financial year (FY) 2016. The primary energy requirement of the State is met through TANGEDCO and it has been able to maintain 24 hours of supply to both urban and rural areas since June 2014. Thus, the energy security of the State is very strong and does not possess any threat to the power supply scenario.

Of the total power allocation, wind accounts for the highest which is 27.3 percent followed by Central Generating Systems (20.6 percent) and then Power Purchases and Captive Power Projects (CPPs) (18.26%). Solar accounts for 6.81 percent, hydro for 7.73 percent, biomass for 0.8% and cogeneration for 2.31 percent.

As compared to National, the State's demand supply is better than the National average (2.1 percent Energy deficit and 3.2 percent Peak deficit in the Financial Year 2016).

The per capita consumption of electricity is higher than national level and even the growth trajectory is higher. The per-capita electricity consumption in the State is 114 percent of National per-capita consumption and owes to higher industrial and commercial sectoral growth.

The sales of petroleum products at national level and State level are in alignment. The per-capita sale of petroleum product in the State is around 130 percent of the national average.

	No. of Activities (2021-30)	Budget Proposed in INR crore(2021-30)
Adaptation based	7	1,365.76
Mitigation based	20	96,690.92
Both	0	0
Total	27	98056.68

Major Achievements

- The draft Amended Tamil Nadu Energy Conservation Building Code has been updated in line with Energy Conservation Building Code (ECBC) 2017 and is submitted to the Empowered Committee for approval and notification.
- Demonstration projects on Energy Efficiency at Nammakkal Kavingar Maaligai and Ezhilagam buildings were completed.
- 81460 nos. of Faster Than Light (FTL) lights converted into 81460 Nos. Light Emitting Diode (LED)(world class cities programme)
- 134965 nos. of FTL lights converted into 123499 Nos. LED (Rest of Urban Tamil Nadu)
- Strengthening of State Designated Agencies on Energy Conservation by Bureau of Energy Efficiency (BEE) and capacity building of Small and Medium Industries (SME) industries on Demand Side Management (DSM)
- Transmission Infrastructure strengthening works
- Distribution Infrastructure Strengthening works

Budget Proposed in TNSAPCC	Rs. 155438 crore
Budget Allocated from 2012-13 to 2016-17	Rs. 32719.22crore
Percentage Share	21.05%

Sustainable Habitat

Sustainable Habitat means achieving a balance between the economic and social development of human habitats together with the protection of the environment, equity in employment, shelters, basic services, social infrastructure and transport. Climate change and its impacts are related with unsustainable, unplanned and rapid development. The climate extreme events affect both rural and urban regions. Rural development needs to accompany urban development in order to create a balanced growth in each sector. Urban regions are most vulnerable to the impacts of climate change because of the rising issues like food insecurity, inequitable water supply, improper sewerage, more accumulation of solid wastes, health issues, vehicular growth, pollution etc. Important factor of urbanisation is the migration of people from rural to urban areas and which impacts, there is increasing pressure on urban infrastructure and services, increase in consumption of energy and associated greenhouse gas emissions.

The sustainable habitat focuses on housing, drinking water, urban development, health and sanitation, waste management, transport, energy, pollution and greening of urban spaces. The increasing rate of urban population is creating humongous stress on housing demand and space thereby making living conditions unsustainable. There is also unplanned settlement and construction. Change in rainfall pattern is a threat to the sustainability of water use in the urban regions as it leads to reduction of water availability and quality from surface and groundwater sources.

	No. of Activities(2021-30)	Budget Proposed in crore INR (2021-30)
Adaptation based	11	107736.93
Mitigation based	12	19752.35
Both	1	0.05
Total	24	127,489.33

Major Achievements	
Promote sustainable habitats to adapt to Climate Change (CC)	
<ul style="list-style-type: none"> The Combined Development Regulation and Building Rules developed by the State focuses on rainwater harvesting, reuse of grey water, ecofriendly construction materials 	
Providing CC resilient water supply systems	
<ul style="list-style-type: none"> Providing 24x7 water supply and focusing on sustainable use of water by SCADA application 	
Urban and Rural development	
<ul style="list-style-type: none"> Thirumazhisai Satellite Township and Uchappatti – Toppur Satellite Township 	
Health and sanitation (urban and rural)	
<ul style="list-style-type: none"> The Rapid Response Teams (RRT) under IDSP (Integrated Disease Surveillance Project) is investigating in all outbreaks of diseases 	
Waste Management (Urban and Rural)	
<ul style="list-style-type: none"> Formulation of Solid Waste Management and Plastic Waste Management Rules - 2016 	
Energy	
<ul style="list-style-type: none"> Energising one lakh streetlights through Solar Energy by replacing the existing lamps with LED lamps 	
Developing an efficient integrated transport system	
<ul style="list-style-type: none"> Improvement to all existing roads and maintenance at regular intervals 	
bating enhanced air and water pollution in a CC scenario	
<ul style="list-style-type: none"> Installation of six Continuous Ambient Air Quality Monitoring stations (CAAQMS) in Chennai and Coimbatore, 10 Real Time Ambient Noise Monitoring Stations in Chennai City CARE AIR Centre monitors both source emissions and ambient air quality on a real time basis of the industries at TNPCB Corporate Office. Chennai City Water ways Monitoring Program 	
Greening of Urban Spaces	
<ul style="list-style-type: none"> Development of green parks, parks developed on open space reservation (OSR) land 	
Capacity Building	
<ul style="list-style-type: none"> Jal sakthi Abiyan main focus of this campaign being Water conservation and rain water harvesting 	
Budget Proposed in TNSAPCC	Rs 207104 crore
Budget Allocated from 2012-13 to 2016-17	Rs. 71589.48crore
Percentage Share	34.6%

Summary allocation of climate relevant budget in different Sectors

In the TNSAPCC, 260 climate actions were proposed. The tentative budget to implement these actions was Rs. 404,258.14 crore for 5 years (2012-17).

Out of the proposed actions in the TNSAPCC, 59 percent were for adaptation, 36 percent for mitigation and 5 percent had characteristics of both adaptation and mitigation.

Sector	Proposed Budget (as in SAPCC 2012-17) in crore INR
Sustainable Agriculture	23,093.14
Water Resources	12,626.00
Forest & Biodiversity	1528.00
Coastal Area Management	4420.00
Strategic Knowledge for Climate Change	49.00
Enhanced Energy Efficiency and Solar Mission	155,438.00
Sustainable Habitat	207,104.00
TOTAL	404,258.14

The above table shows, sectoral, the investment focus has been more on the Sustainable Habitat sector that has strong relevance for NDC and is highly affected by climate change.

Prioritized Interventions

For 2021-2030, a total number of 199 planned activities have been identified in seven sectors for prioritisation for which financial allocation have been proposed merging similar activities. The key method of prioritisation is driven by the following:

- (a) Adaptation activities that addresses high vulnerability and fits in to the impact chain (as relevant to sector)
- (b) Low carbon development linked to mitigation activities
- (c) Activities where adaptation and mitigation both possible, the co-benefit approach has been taken. Further sharpening has been done based on their linkages to Sustainable Development Goals-Nationally Determined Contributions (SDG-NDC), funding linkage and implementation potential.

Though for prioritization of activities, a multi criteria analysis-based score card was used, first the activities have been screened based on vulnerability/impact as well as low carbon development process. Thereafter, SDG-NDC linkage was assigned highest weight of 50 percent. Implementation potential based on low barriers was assigned 30 percent weight and funding linkage was assigned 20 percent weight (since our funding is mostly schematic and climate relevance for proposed activities is still not standardized). The activities based on this were scaled as (1) meagre (2) reasonable (3) significant. The weighted averages were used for ranking and prioritization.

However, sector wise resource requirement for all the proposed activities for next 10 years have been given below.

Sl. No.	Sector	Proposed Budget Rs in crore (2021-30)	From State/central budget available Rs in crore	Gap Rs in crore
1	Sustainable Agriculture	71,731.94	58,426.94	13,305.00
2	Water Resources	19,041.84	16,728.00	2,313.84
3	Forest & Biodiversity	2,834.44	2,301.44	533.00
4	Coastal Area Management	4,776.10	2,626.58	2,149.52
5	Strategic Knowledge for Climate Change	280.87	271.68	9.19
6	Enhanced Energy Efficiency and Solar Mission	98,056.68	42,522.31	55,534.37
7	Sustainable Habitat	127,489.33	98,021.77	29,467.56
	TOTAL	324,211.20	220,898.72	103,312.48

The State has proposed 199 activities that include some of the existing activities and new ones based on their linkages to NDC/SDG. The total resource requirement is expected to be Rs 324,211.20crore. Apart from accounting from all possible sources of funds, there will still be a gap of Rs 103,312.48crore.

While on the one hand, implementation of the prioritised adaptation and mitigation strategies will be monitored in regular stocktaking exercises such as the one in this document, in addition eight adaptation indicators and three mitigation indicators have been defined at the output/ outcome level, and will be tracked under the responsibility of the nodal department. Monitoring and evaluation of SAPCC implementation and effectiveness will allow assessing the effectiveness of adaptation and mitigation interventions, and thereby facilitating continuous learning and improvement. These indicators, moreover, have been designed in a way to facilitate aggregation, and to allow assessment of the actual TNSAPCC2.0 contribution towards the Indian NDC goals and the SDGs. Ultimately, information collected on TNSAPCC2.0 implementation is thought to be useful to feed into a National-level Monitoring &Evaluation system.