STATE ACTION PLAN ON CLIMATE CHANGE FOR THE UNION TERRITORY OF PUDUCHERRY

Prepared by

Department of Science, Technology & Environment

Government of Puducherry

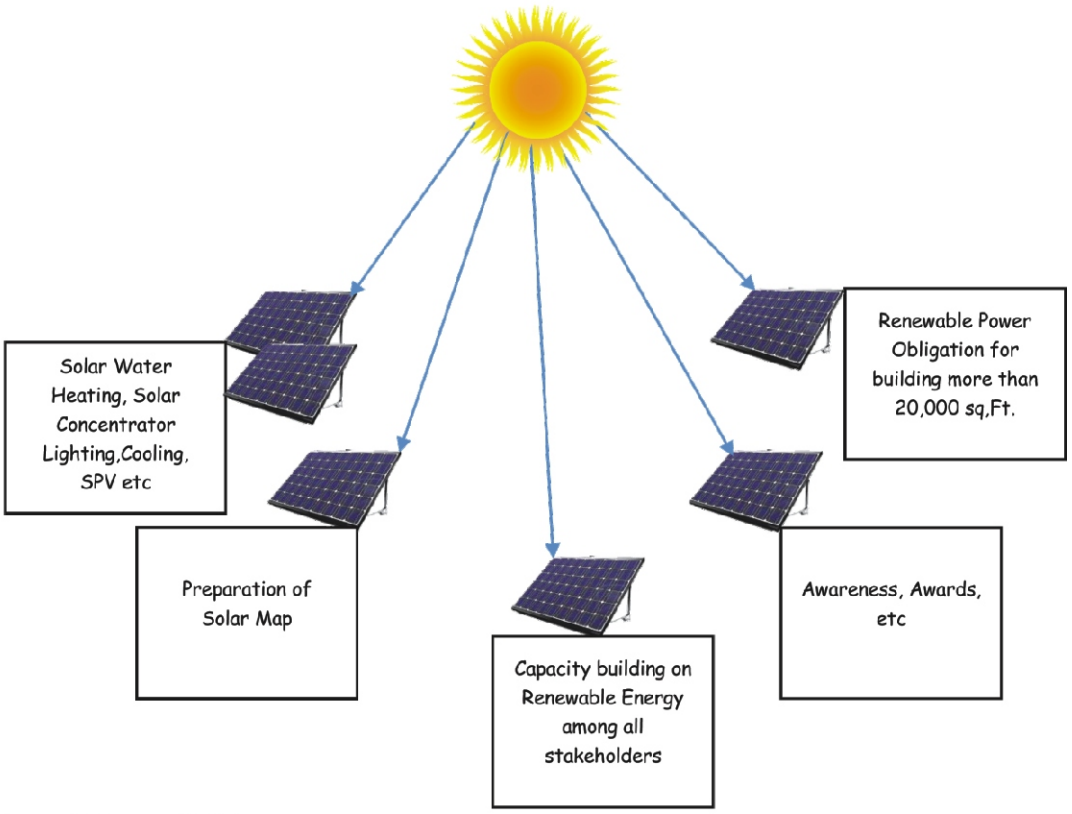
Supported by

MOEF & CC,

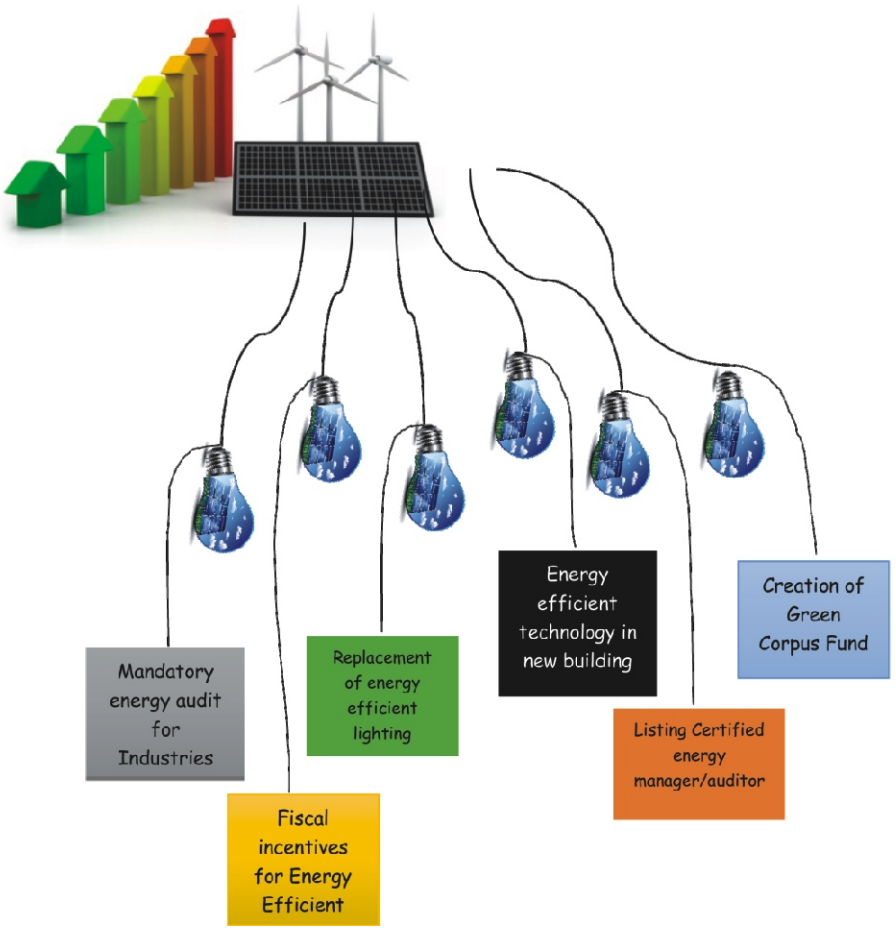
Government of India

List of Activities to be carried out in each Mission

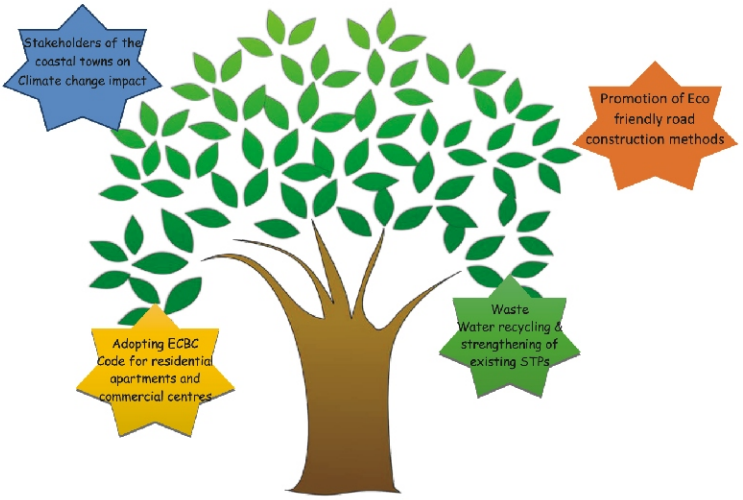
Solar Mission



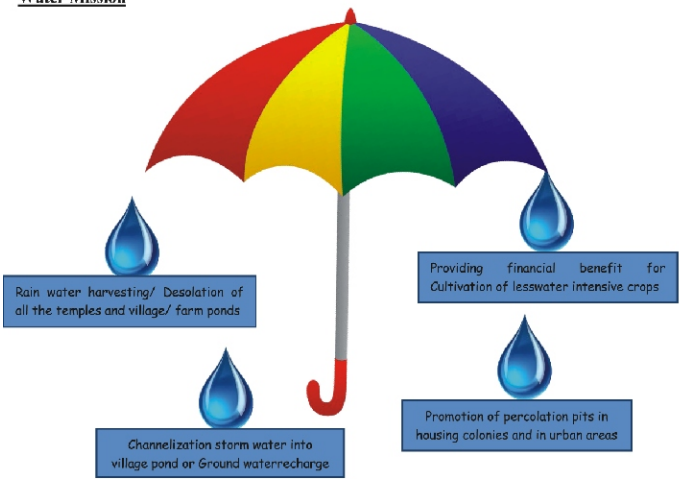
Enhanced Energy Efficiency



Sustainable Habitat Mission



Water Mission



Coastal Mission

Strategic Knowledge Mission

Mission for a Green Puducherry & Sustainable Agriculture

CONTENT

ACKNOWLEDGEMENT

The State Action plan on Climate Change for the UT of Puducherry has been prepared by Government of Puducherry. The document has been prepared with the financial assistance from the World Bank through Project Implementing Agency, Puducherry under the Coastal Disaster Risk Reduction Project (CDRRP).

The Department of Science, Technology & Environment sincerely extend thanks to the then Chief Secretary for extending appropriate advice, support and approval for the project. Without the able guidance of the then Special Secretary (Environment), then commissioner cum Secretary (DSTE) and the present Secretary (Environment), the document would not have been successfully completed. Co-operation from all the line departments for preparing this document is highly appreciated. The Department of Science, Technology & Environment, Government of Puducherry extend sincere thanks of Head of Departments and Officers who helped in preparation of this document. World Bank appointed consultant M/s. C-TRANS Consultant, Bhuvaneshwar had collected, compiled and prepared the SAPCC for the Puducherry. The able cooperation, coordination of the Officers and staff members of the Department of Science, Technology & Environment and its autonomous bodies is duly acknowledged.

Director

DSTE

Executive Summary

Introduction

Climate projections for India suggest that impacts are likely to be varied and heterogeneous, with some regions experiencing more intense rainfall and flood risks, while others encountering sparser rainfall and prolonged droughts including spatial shift in the pattern of rainfall. The coastal areas are likely to suffer from higher tides, more intense storm rising from warmer oceans and further erosion of coastline due to sea level rise. Climate variability or climate change manifests through alteration in frequency, intensity, spatial extent, or duration of weather and climate extremes, including climate and hydro-meteorological events such as heat waves, heavy precipitation events, drought and tropical cyclones which would pose greater risks to human life, endanger the sustainability of the economy.

Regional climate change model has projected warmer climatic conditions with increase in average temperature, rainfall variability and incidence of extreme weather events that might have far reaching impacts on climate sensitive sectors such as agriculture and tourism and underpin the economic development. Yanam area adjacent to East Godavari district (Andhra Pradesh) with a coast line of 177 km is prone to cyclones and depressions. A study by Anna University with analysis of data from 1972 to 2010 has found that low to medium erosion occurs along a km of the total 24 km coast of Puducherry.This is about 4.2% of the total Puducherry coast. The union territory of Puducherry and specially the Puducherry and Karaikal region have in its recent past witnessed the increased incidence of natural hazards such as storm surge, tsunami and cyclone. The tsunami in December 2004 along the coastline of Puducherry and the Thane cyclone in 2011 have resulted in extensive economic and losses of life. The problem of soil erosion in the coastal region and possibility of salt water ingression into coastal aquifers has emerged as a pressing issue. Indeed the projection of the hydro-meteorological and geophysical hazardswould jeopardize the current growth strategy and deepen poverty amongst the vulnerable coastal communities through discouraging engagement of communities in farm and nonfarm sector. The impacts of extreme climate-induced events resulting in loss of life, livelihoods, assets and infrastructure could affect the UT's economic growth and nullify the effectiveness of macroeconomic policies and pro poor initiatives. Given its profile, climate change is an important concern for the UT as it is presently on a carbon-oriented development path and at the same time, it is vulnerable to climate variations.

Process of Formulating CCAP

Post to the National Consultation Workshop convened on 19thAugust 2010 in New Delhi,Government of Puducherry initiated framing of the CCAP (Climate ChangeAction Plan)under the supervision of a Steering Committee. The State Steering Committee (SSC) was constituted under the chairmanship of Chief Secretary with Secretaries of the line departments as members and director DSTE as convener initiated formulation of the CCAP. 19 administrative departments and 5 autonomous bodies were selected as implementing agencies for development of theCCAP (Climate ChangeAction Plan). Puducherry Climate Change Action Plan was formulated with an objective of identifying and prioritizing strategies that simultaneously advance the UT's developmental goals while yielding co-benefits of climate change mitigation and adaptation effectively. It envisages mainstreaming climate change strategies into developmental planning and

exploring development of low carbonclimate resilient pathway.From the eight fold national mission the steering committee in turn picked up and strategized actions for the six missions that are relevant to Puducherry Union Territory. The initial CCAP framed was modified as per the guidelines of the common framework by MOEF with support from PIA under CDRRP programme of The World Bank. Coastal Disaster was later added based on the suggestion in course of the consultation workshop.A consultation was convened towards obtaining the view of the stakeholders from amongst public, government agencies, researchers, NGOs, civil societies and academicians.The series of adaptation and mitigation actions developed in consultation with the Nodal Department were vetted in course of the stakeholder's consultation process.

The structure of the steering committee responsible for the preparation of the CCAP

1. Chief Secretary, GOP - Chairman.
2. Secretary to Government (Animal Husbandry) - Member
3. Secretary to Government (Agriculture) - Member
4. Secretary to Government (Power)- Member
5. Secretary to Government (Fisheries) - Member
6. Secretary to Government (Forest & Wild Life)- Member
7. Secretary to Government (Health) - Member
8. Secretary to Government (Local Administration) - Member
9. Secretary to Government (Planning & Research) - Member
10. Secretary to Government (Public Works) - Member
11. Secretary to Government (Revenue & Disaster Management)- Member
12. Secretary to Government (School Education) - Member
13. Special Secretary to Government (Industries & Commerce) - Member
14. Special Secretary to Government (Transport) - Member
15. Special Secretary to Government (Science, Technology & Environment) - Member
16. Director Dept. of Science, Technology & Environment Convener

Vulnerability

There are three kind of vulnerability (a) bio-physical impacted by shoreline and other meteorological factors (b) environmental largely impacted due to pollution and (c) socio-economic. Social vulnerability was computed for the four regions by placing socioeconomic variablesin a principal components analysis (PCA), using the varimax rotation option. The analysis suggests Mahe and Yanam region to be relatively less vulnerable as compared to Puducherry and Karaikal considering all the socio-economic factors. Puducherry is most vulnerable (high vulnerability and low

[1]CCAP- Climate Change Action Plan

adaptive capacity) amongst the four regions. Karaikal has high adaptive capacity (as social capital in rural areas is relatively more and activities are comparatively more resilient than the urban areas) and has high vulnerability.Mahe has low vulnerability and high adaptive capacity (higher literacy and high population density), so also Yanam. The composite vulnerability of the four regions as per their rank is as follows:

Table 1: Composite Vulnerability index and ranking of the four regions of Puducherry

Location	Composite Vulnerability Index	Rank
Puducherry	**17.64**	**1**
Karaikal	**16.70**	**2**
Yanam	**9.87**	**3**
Mahe	**5.28**	**4**

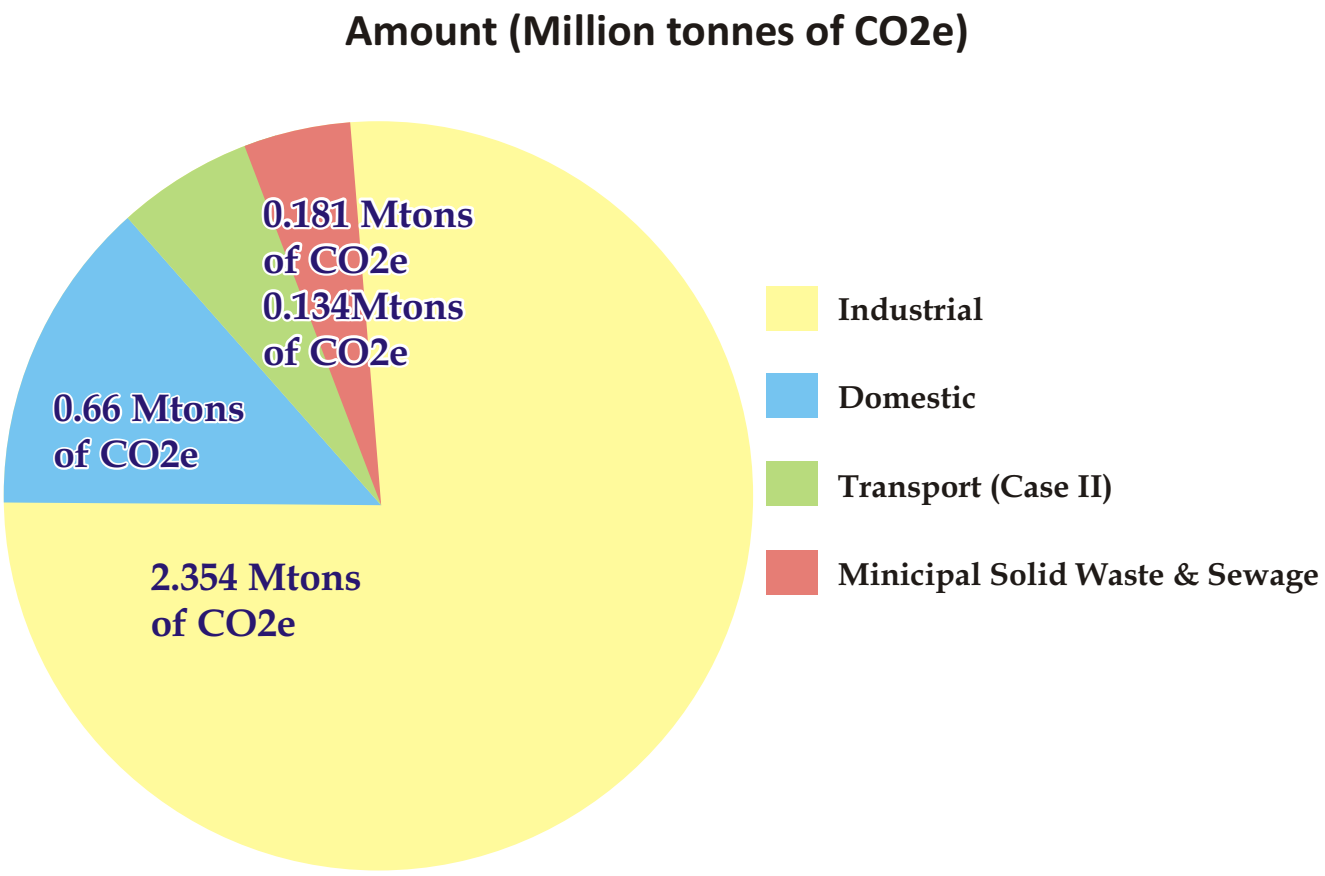
Climate projections reveals an increase in summer temperature by 3-4 °C in moderate emission A1B scenario. Since temperature is projected to increase and there is also likelihood for increase in rainfall with most likely scenario of climate being hot and humid in the near term requiring temperature adaptive agronomic practice and even varieties to withstand water logging and salinity in some low lying areas to reduce vulnerability.Yanam area adjacent to East Godavari district (Andhra Pradesh)with a long coast line is prone to cyclones and depressions. The villages viz. Chollangi, Chollangipeta, G.Vemavaram, Patavala, Coringa, Polekurru, Neelapalli and P.Mallavaram falling under Tallarevu Mandal and Bhairavapalem and Gokullanka falling under Ipolavaram Mandal are highly cyclone/ storm prone. Coastal part of this area is also flood prone.Environmental impacts of flood include soil erosion, silting, water pollution, denudation of land, ingress of saline water in cultivable land will make the coastal communities more vulnerable in case of incidence of the climate extreme events.

State GHG Inventory

Approach was made to develop an inventory of the GHG emission across the union territory considering the fossil fuel and electricity consumption across industrial, domestic, agriculture, and transport sectors whereas emission of methane and nitrous oxide from agriculture and waste(including both solid and liquid waste) sector was estimated. However due to lack of availability of information relating to actual consumption of the fuel oil in the road transport sector a two way approach was assumed. In first case (Case I) Tier 1 method of IPCC relating to the total fuel being sold is used to estimate the GHG inventory. However considering the fact that a considerable proportion of the oil sold to the transportation sector in UTis used by vehicle of adjacent state due to the lower price of the fuel oil in the UT and the boundary being very adjacent the per capita based approach (Case II) is considered. The per capita emission from transportation sector is arrived at from Submission by MOEF in 2007. The total GHG emission is estimated at 4.7435 Million tonnes of CO_2e (considering Emission from transportation sector estimated under Case I) and 3.4641Million tonnes of CO_2e (considering emission from transportation sector estimated under Case II).

The sector wise GHG emission profile in the UT is as follows:

Sectoral Emission	Amount	Unit
Industrial	2.354	Million tonnes of CO_2e
Domestic	0.663	Million tonnes of CO_2e
Transport (Case II)	0.134	Million tonnes of CO_2e
Municipal Solid Waste & Sewage	0.181	Million tonnes of CO_2e
Agriculture	0.132	Million tonnes of CO_2e
Net Emission	**3.4641**	Million tonnes of CO_2e



Considering the total emission of 3.46 million tonnes of CO_2e and population of 1.247 million the per-capita emission is estimated at 2.7 tCO_{2e}as compared to national per capita emission of 1.7tCO_2e (2007).

Solar Mission

The Energy demand in the UT is mostly met using grid based power and fossil fuel. The demand of both the primary and secondary form of energy has grown several folds. Not only the over use of energy is resulting into environmental degradation and contribute substantially to the climate change cause but also enhancing the concern over energy security. Out of the total estimated potential of 160 MW of grid interactive renewable energy potential, the cumulative capacity of renewable energy potential being harnessed is 0.02 MW.

The Solar Mission is strategized in line with the National Solar Mission with objectives to meet the country's development goals and energy security of the nation while simultaneously yielding co-benefits for addressing climate change effects. Apart from solar energy technology the CCAP (Climate ChangeAction Plan)has emphasized over promotion of other renewable energy technology including policy action of bringing about grid parity.

The Key actions proposed under solar mission are:

Key Priorities: Solar Mission

Harnessing renewable energy potential scenario of the UT by assesment of Solar energy potential across the UT & preparation of solar potential map

Mandatory use of solar water heating systems in domestic sector through policy action and demonstration	Promotion and facilitation of Renewable energy application in Govt.schools & central kitchens of UT.

Enhancement of solar lighting application in public places through demonstration

Strengthening technical competency of various stakeholders of RE technology including O&M service providers, technicans, installers,manufacturer & others	Promotion of Solar water heating system application in health sectors

Mandatory use of Solar Water Heating system in hotel sectors

Promotion of grid interactive solar power generation in PPP/IPP mode through policy measures and facilitating setting up of 20MW rooftop and small solar powerplants of up to 2MW capacity	Promotion of solar application in public building for lighting and hot water generation through demonstration project of 50 kW solar power and 1,000 LPD SWH installation in two govt. buildings

Promoting Renewable Energy technology is one of the multipronged strategies planned to achieve the key goals in context of climate change and at the same time addresses the concern over energy security, commercial exploitation of renewable power potential, eradication of energy poverty, ensuring availability and affordability of energy supply and preparing the nation for imminent energy transition.The actions proposed for promotion of renewable technology are outlined as follows:

1. Assessment of Wind Energy Potential & mapping of potential wind sites.
2. Assessment of Biomass Energy Potential & preparation of Biomass Resource Map.
3. Promotion of biomass gasifier to meet up electrical and thermal energy requirement.
4. Incorporation of Renewable Energy Obligation (RPO) in building By-Law applicable to major building projects (> 20,000 sq. ft).

[2] The national per capita emission has increased at a CAGR of 3.3% from 1994 to 2007

5. Renewable Power Obligation fixed at 2% of the power purchase from Renewable Energy Source to be scale up to 10% by 2020.

6. Formulation of Renewable Energy, Energy Conservation and Energy Efficiency policy.

7. Facilitating waste to Energy Projects.

8. Promoting private investment in setting up of projects for power generation from renewable energy sources through an attractive mix of fiscal and financial incentives.

Enhanced Energy Efficiency Mission

The power demand of the Union Territory including that of the four regions of Puducherry, Karaikal, Mahe and Yanam is around 349.97 MW (Megawatt). A part of it is met from the UT owned Gas based Power Plant of 32.0 MW and power drawn from other state and central sector power plant or southern regional grid. The total consumption of power across the UT considering all segments of consumer is 2364 million units.

The issue of the energy efficiency in this context becomes more pertinent as the saving of energy use will lessen the dependency of the UT to procure power from the neighboring state or from regional grid over and above the central sector allocation. A considerable potential of energy saving lies agriculture, industry, domestic and municipal sector. An estimated annual saving of 248 million units of electrical energy is possible through incorporation of energy conservation measures as against the total electricity consumption of 2,225MU. The average energy saving potential estimated at 11%. Considering the projected energy demand of 2,435 million units for 2013-14 the saving potential will range to around 272 million units. The key priority actions proposed under Enhanced Energy Efficiency Mission are:

Key Priorities: Mission on Enhanced Energy Efficiency

1. Provisioning of LED/CFL distribution to household and replacing incandescent lamp

2.Development and promotion of Policy measures towards up graduation of existing production/manufacturing

3. Enforcing Energy Audit and its implementation across the industrial facilities

4. Incorporate conditions as a part of building permit to adopt star energy efficient electrical appliances and use of CFL

5. Institution of Energy Conservation Award

6. Enforcement towards use of Energy Efficient Lighting in all Govt. & commercial building

7. Facilitating energy audit across all large (in terms of energy consumption) government offices and retrofitting of existing energy inefficient system with efficient and star rated products

8. Promoting and Adapting Energy Efficient technology measures and practices in new building

9. Creation of Green Corpus fund

Sustainable Habitat Mission

Climate change is expected to have multifarious impacts on Puducherry. Overall, this Union Territory is expected to be warmer with increase in maximum and minimum temperature, experience a large degree of rainfall variability and extreme weather events which would have far reaching effects on climate sensitive sectors such as agriculture and tourism underpinning the economy of Puducherry. Urban Heat Island (UHI) effects were concluded to be real local phenomena with negligible impact on large-scale trends. UHI and land-use land-cover change (LULC) effects arise mainly because the modified surface affects the storage and transfer of heat, water and airflow. For single discrete locations these impacts may dominate all other factors. Further, the coastal setting of this Union Territory also adds to the vulnerability of the region.30.3% of the coastline along Puducherry region and 11.5% of the coastlines along Karaikal Region are already under threat of coastal erosion. Sea level rise would also result in acceleration of Sea water intrusion into the fresh water aquifers. At the same time, better urban planning and policies can reduce energy use and Green House Gas (GHG) emissions and improve the resilience of urban infrastructure to climate change, thereby shaping future trends. The key priorities proposed are:

1. Adopting ECBC code for residential apartments and commercial centres

2. Waste water recycling & Strengthening/ modifications of existing STPs

3. Promotion of Green building and green building certification.

4. Municipal solidwaste management

5. Establishment of modern slaughter house within Puducherry Municipality

6. Capacity building programmes of Urban Local Bodies (ULBs)/ stakeholders of the coastal towns on potential climate change impacts (Tsunami, cyclone, flooding of low-lying coastal areas, land loss and displacement) and additional preparedness requirements

7. Construction of Flyover and laying of bypass road → Providing/ renewing underground sewerage systems to urban areas → Promotion of eco-friendly road construction methods and capacity building of stakeholders → Climate friendly transport management and promotion of Public transport → Promotion of useof cooking gas from kitchen waste in bio-digester

Green Puducherry Mission and Sustainable Agriculture

Increased atmospheric carbon dioxide (CO_2) concentration and its impact on global climate are likely to alter forest ecosystems. In this context it is also worthwhile to mention that increased concentration of CO_2 in the atmosphere might favor the plant growth and especially the C4 variety. On one hand where it is possible that increase of sea level might favor the biodiversity across the coastal line specifically the mangroves that tolerate high salinity provided the ecosystem can tolerate the amplitude of sea level rise on the other hand any rise of the sea level or the increase in sea temperature might impact the coral reef ecosystem. Irrespective of the impacts it render either positive or negative it is imperative to mention that the impact of climate change will result into abiotic and ecological stress at regional level on the forest ecosystem. The quantum of forest in the UT is however considerably low due to higher population density and lower geographical area. The forest cover of Puducherry is spread over 50.06 sq. km which is 10.43% of the UT's geographical area

Agriculture is the mainstay of rural livelihood providing direct employment to around 50% and indirect employment to 20% of the rural population. Irrespective of the sector providing livelihood opportunity to a considerable percent of the population the contribution of the agricultural and its allied sector to the UT economy is substantially low. Out of the total area of 48651ha covering all the four regions across the UT the net shown area is 18,129 ha comprising around 37% of the land area. The fisheries encompass coastal fishery across 45 km of coast line and inland fishery. Total amount of marine and inland fish catch in 2011 is 42,347 MT and that of prawn is around 3,809.7 MT.

The primary sector comprising of agriculture, animal husbandry, forestry, fishing, mining and quarrying contributes to around 5% of Net State Domestic Product (NSDP at current price). The contribution of agriculture and its allied sector to UT's income has declined substantially from 11.35% in 1994-95 to around 5% across 2011-12 irrespective of the continual effort by the agriculture department of the government of UT.

Key Priorities: Mission for a Green Puducherry & Sustainable Agriculture

- Enhancing productivity through introduction of genetically superior seedlings
- Consolidation and protection of forests
- Watershed development through vegetative means
- Eco-restoration of coastal areas by bio shelter plantations
- Promotion of farm forestry and agro forestry
- Development of ecotourism and involving local communities
- Willife and biodiversity conservation by insitu & exsitu methods
- Enrichment of existing forest density
- Identification and propagation of adaptive species through modern nurseries

- Study on REDD & REDD + Feasibility for Afforestation in Puducherry
- Promotion of solar pumps for irrigation purpose by replacing 5 nos. diesal pumps with solar pumps
- Educating farmers on better croping systems, drought resistance crop, minimization of chemical fertilizer and encouraging organic farming and soil reclamation program
- Capacity building of staff
- Drip Irrigation for 30% of land area under Horticulture
- Replacing existing pumps by foot value motor pumps in Karaikal region
- Protection of Mangrove forests
- Monitoring critical faunal habitats[turtles/ littoral birds] to assess impact of climate change

Water Mission:

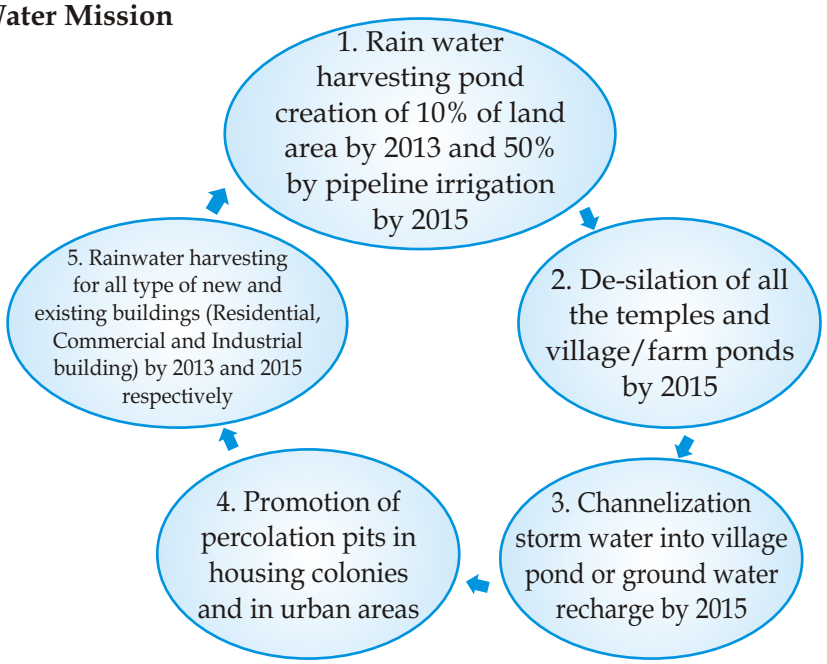
The water resources continue to be undervalued and overused without regard to current costs and future requirements. Traits of growing economy like urbanization and industrialization are taking toll on the water bodies causing large scale pollution. Demand of water for domestic needs, livelihood, industrial and agricultural use; have certainly led to unplanned and over-extraction of ground water. Neglect of tanks and water bodies, discharge of effluents, contaminated water from hatcheries have caused water pollution which have gradually snowballed into severe water resource problems in the UT. As against the total available water of 200 MCM the demand of water across various sectors area:

Sector	Quantity (MCM)	Percentage
Domestic	35.35	16
Agriculture	174.40	81
Industries and Others	7.02	3

Ground water contributes in meeting up the major share of the required water i.e around 174.6 MCM with remaining demand being met from surface source including river and tanks. Added to the burden of rapid and unplanned urbanization, the consequences of climate change are manifested through variability in river flow, increased frequency and intensity of natural weather events, ground water table depletion in alluvial aquifers due to variation in rainfall.

The Key priority actions proposed under water mission are:

Key Priorities: Water Mission



Strategic Knowledge Mission:

Enhancing coping capacity is a way towards reducing vulnerability and enhancing the resilience of the community. Enhancing technical knowhow, assessment of vulnerability, creating awareness as well as building the capacity of the vulnerable population is the measures towards enhancing the coping capacity and reducing the vulnerability of the population. Measures to generate strategic knowledge and develop understanding of the population, policy makers, decision makers and stakeholders towards disaster risk reduction. The knowledge strategy developed should be comprehensible and executable by the stakeholders at large. The knowledge networks should operate in a hub-and-spoke model with nodal institutions linked to a wider range of knowledge partners linking to both intra-mural and extra mural research support system. This should minutely address the issues and at the same time support the need for economic and livelihood growth of the UT. While in theory this is desirable, in practice many institutions and bodies operate on silos and this paradigm needs a change.Climate Change Cell proposed to be formulated under DSTE will be the nodal agency responsible for implementation of the strategic knowledge mission.

The key priority actions proposed under the mission are:

Key Priorities: Strategic Knowledge Mission

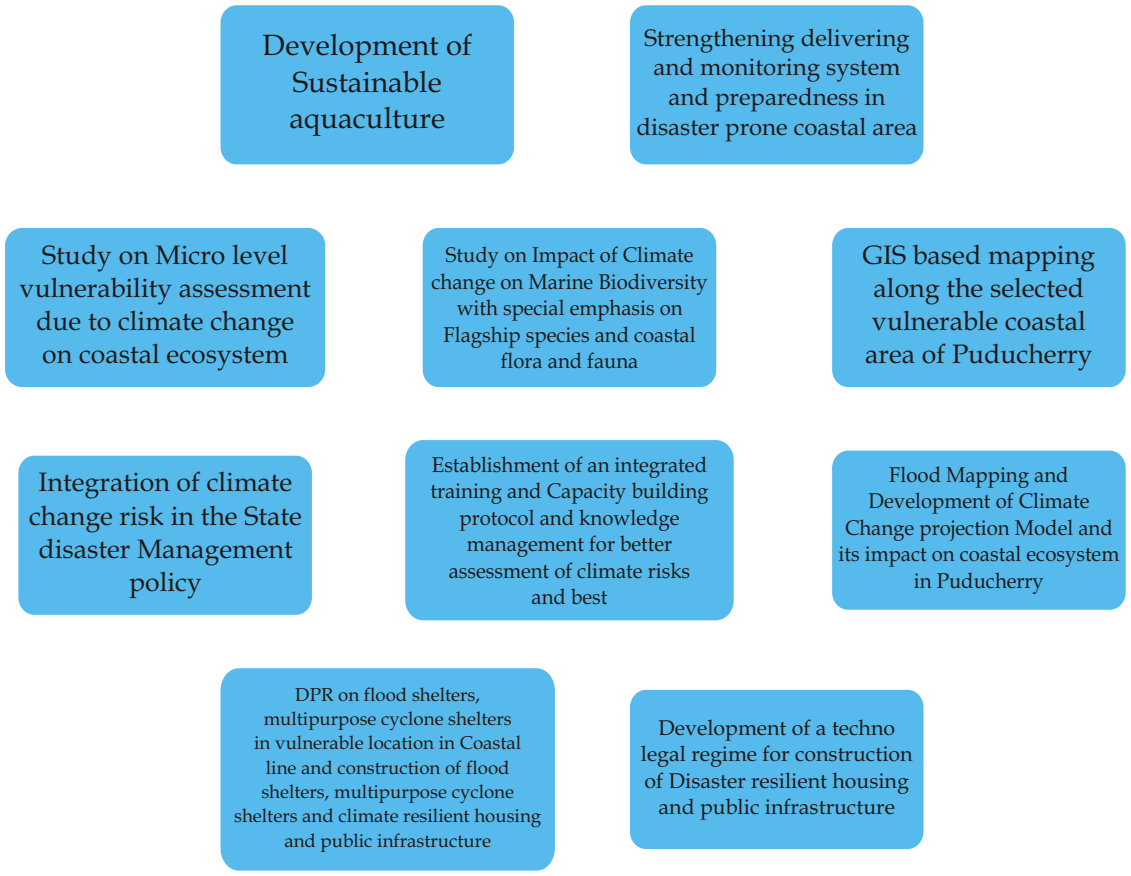
Mission on Coastal and Disaster Management

Coastal and Disaster Management is not a mission conceived from the National Action Plan of Climate Change. Conceiving the experience of disastrous impact in the past across the regions mostly due to the hydro meteorological and geophysical hazards and based on the input in course of the consultation the sector has been provided with additional importance under the CCAP and conceived as separate mission.

Coast lines of Puducherry subjected to hydro-meteorological and geophysical hazards are most likely to impact life, livelihood and infrastructure of the coastal communities by virtue of the devastation it results into during and after its occurrence. Flooding, storm surges, coastal erosion and shoreline retreat are the disasters across the coast line.The projection of sea level rise (IPCC 5thAssessment Report, The Physical Science Basis), observed increase in sea surface temperature and projection towards increased frequency of climate extreme events might result in serious ramification for the coastal community by resulting into geomorphic changes along the coastline, damage coastal ecosystems and resources thereby undermining social and economic development. The climate change action plan assess the vulnerability of the coastal community in light of the projected variation in

climate, weather variability and climate extremes and strategize measures towards effective disaster risk reduction and promote the conceptof disaster resilience. The adaptive measures planned under the CCAP as on one hand is intended to enhance the coping capacity and resilience of the vulnerable coastal communities so that they can respond promptly and effectively during crisis situation as well as quickly recover and transit to a sustainable ways of living on other hand strategies for climate proofing of the livelihood of the communities. The Action proposed under the mission specifically intends to focus on developing disaster resilient infrastructure and societies, capacity building of the communities, improvise system in place for early warning through incorporating the climate change concern as part of effective coastal zone management plan. The key priority actions proposed as part of the mission are:

Key Priorities of Mission on Coastal and Disaster Management



Cross Cutting

There are several cross-cutting issues in the climate change debate.It requires co-ordination amongst different sectors and commitment of multiple stakeholders. The issues impeding the collaboration among the sectorsprivate, public and civil society is not new. 'Convergence' is a more complex form of collaboration involving multi-stakeholder coalition seeking to influence systemic changes on wide-ranging issues, focused on outcomes than inputs to deliver scalable and sustainable change.Few of the Cross cutting themes and actions proposed under are as follows:

Health and Climate Change

Weather and climate variability has a profound influence on human health. The impact of climate change over human health is likely to be multifaceted involving increased incidence of vector, water and food borne diseases, malnutrition and undernourishment, injuries and death caused by extreme hydrogeological events and thermal stress. Key actions proposed to be taken up are as follows:

1. Monitoring high resolution weather and climate data and develop health impact model to study the regional pattern of diseases.

2. Mapping of geographic areas based on epidemiological data and extent of vulnerability to adverse impact of climate change.

3. Gap analysis and making region wise provision of primary, secondary and tertiary health care facilities, implementation of public health measures including vector control, sanitation and clean drinking water supply.

4. Identify extrinsic and intrinsic drivers of malaria and dengue and identifying immunity intervention measures towards control of incidence of malaria/ dengue.

5. Up gradation of health policy to through including of climate change related health hazards.

6. Study and documentation of diseases caused by water (water borne) and development of institutional mechanism to reduce the incidence/outbreaks of such diseases along with Awareness generation.

7. Development of institutional framework and infrastructural facilities for early detection of vector borne diseases, including managing outbreaks

8. Assessment of health impacts due to malnutrition

Strategic Knowledge

Enhancing knowledge and capacity of the department towards addressing the climate change concern and minimizing the risk of life and livelihood of the community is identified as a matter of utmost relevance. The needs and requirement are outlined as follows:

Geography Strategies	Local	State level	Activity to be undertaken
Awareness	Creating local level awareness is a first step, e.g. barefoot workers, framer field schools may promote descaled climate change concerns	Building awareness of legislators, policy makers on socio-economic and socio-political cost of climate change	Participation in national networks, interface with the national knowledge network and research systems
Capacity	Monitoring, observation Awareness/assessment at state/ district/	Scientific assess ment, measurement, models, with State level	Special regional modeling and assessments, best practices study and resource leveraging

Geography Strategies	Local	State Level	Activity to be undertaken
Generation of Knowledge/ Information	Locale specific databases, scenarios and assessment, local monitoring networks, rapid assessment for input to State inventory	Research networks, Compilation of State level GHG inventory, scientific and policy models, State-wide and area specific scenarios, technology inventory	Interface with IPCC assessments, interfacing with regional/global databases, scenarios and assessments, technology inventory database

Gender and Climate Change

Women are affected disproportionately and differently, due to climate change and associated natural disasters such as floods, droughts, cyclones and storms. This is largely because men and women are bound by distinct socio-economic roles and responsibilities that give rise to differences in vulnerability and ability to cope with these climate change consequence. Therefore it is important that issues relating to gender safety, violence against women during climate stressed scenarios and adaptation options which are gender segregated need to be worked upon and friendly policies for women need to be incorporated.

Budget

The proposed budgetary estimations for implementation of Climate Change Action Plan in different sectors are only a rough estimate. The total budget has been estimated at INR 8253.71 Million for a 5-year period.

Sl. No	Name of the Mission	Number of High Priority Actions	Budget (in Million INR) Existing	Additional	Total
1	Solar Mission	9	1,791.06	512.80	2,303.86
2	Enhanced energy efficiency	8	1.00	515.30	516.30
3	Sustainable Habitat	11	205.35	324.95	530.30
4	Green Puducherry and Sustainable Agriculture	17	0.00	297.75	297.75
5	Water Mission	6	0.00	1,040.00	1,040.00
6	Strategic Knowledge Mission	8	0.00	87.50	87.50
7	Coastal Disaster Management	13	0.00	3,478.00	3,478.00
		72	1,997.41	6,256.3	8,253.71

A break up of the budget as per the type of actions (Adaptation and Mitigation) is as follows:

Sl. No	Name of the Mission	Type of Action		Adaptation Budget (in Million INR)		Mitigation Budget (in Million INR)	
		Adaptation	Mitigation	Existing	Additional	Existing	Additional
1	Solar Mission	0	9.00	0	0	1,791.06	512.80
2	Enhanced energy efficiency	0	8.00	0	0	1.00	515.30
3	Sustainable Habitat	2.00	7.00	202.5	2.50	2.85	322.45
4	Green Puducherry and Sustainable Agriculture	5.00	9.00	0	19.25	0	278.50
5	Water Mission	6.00	0	0	1,040.00	0	0
6	Strategic Knowledge Mission	4.00	4.00	0	72.50	0	15
7	Coastal Disaster Management	11.00	0	0	3,478.00	0	0
		28	37	202.5	4,612.25	1,794.91	1644.05

A break up of the budget as per the time frame

(Short Term, Medium Term and Long Term) is as follows:

Sl. No	Name of the Mission	Time Frame			Short Term Action Budget (in Million INR)		Medium Term Action Budget (in Million INR)		Long Term Action Budget (in Million INR)	
		Short Term	Medium Term	Long Term	Existing	Additional	Existing	Additional	Existing	Additional
1	Solar Mission	3.00	6.00	0	7.56	30.14	1,783.50	482.66	0	0
2	Enhanced energy efficiency	8.00	0	0	1.00	515.30	0.00	0	0	0
3	Sustainable Habitat	6.00	5.00	0	205.35	102.45	0.00	222.50	0	0
4	Green Puducherry and Sustainable Agriculture	4.00	13.00	0	0	17.00	0	280.75	0	0
5	Water Mission	2.00	4.00	0	0	0	0	1040.00	0	0
6	Strategic Knowledge Mission	4.00	4.00	0	0	15.00	0	72.50	0	0
7	Coastal Disaster Management	8.00	2.00	1.00		3216	0	12.00	0	250.00
	Water Mission	**35.00**	**34.00**	**1.00**	**213.91**	**3895.89**	**1,783.5**	**2110.41**	**0**	**250.00**

Parts of the Action Plan based on the availability of resources of the departments and additional funds which might have to be provided for certain activities. As the implementation activities progress, the exact situation would be more prominent.

Stakeholders' Consultation

In consultation with the nodal departments, education institute and civil society, a stakeholders' consultation was conducted at Puducherry on 24th September 2013 with representation from all four regions. As a part of the consultation meeting the draft action plan was presented to the stakeholders both in English and regional language (Tamil) along with a copy of the proposed actions to all stakeholders. Apart from the respective actions under each sector each stakeholder was also briefed about the issues of climate change, its projected variability and the probable vulnerability. Around140 participants attended the workshop (including CTRAN team, organizing team members of DSTE and PIA). Each of the actions proposed under the CCAP were debated and validated apart from the main frame issues like vulnerability and institutional framework. The stakeholder feedback revealed that all the identified priority actions were considered appropriate. Additional issues were raised and suggestions made by the stakeholders during the consultation meeting were incorporated as part of the action plan. The stakeholders were also given a provision to put across their comments vide email or hard copy directly to DSTE or CTRAN. However no such comments were received in the stipulated time period assigned for the purpose (2 weeks).

The major concerns that were highlighted as a part of the consultation programme were land use policy and conversion, water level depletion and damage of existing water bodies, coastal erosion, lack of energy efficiency measures, waste management, vehicular pollution, increase in traffic due to interstate vehicular movement, conservation of coastal biodiversity and ecosystem management.

Annexure I - Comprehensive list of Actions Plan

1.1. Solar Mission

Sl. No.	Title	Organizations	Priority	Type	Scale	Nature	Time Frame
1	Harnessing Solar Energy potential scenario of the UT by assessment of Solar Energy potential & preparation of Solar Map	REAP	H	MI	S	RS	ST
2	Mandatory use of Solar Water heating systems in domestic sector through policy action and demonstration projects	REAP	H				
A	Mandatory use of Solar Water Heating systems in all group houses and apartments of more than 150 sq. m. by 2016	T&CP		MI	S	PA	MT
B	Maximizing use of Solar Water Heating systems in households of more than 1500 sq. ft. through demonstration project by 100 LPD SWH in 100 Nos. households by 2014 100 LPD SWH in 300 Nos. households by 2016	T&CP		MI	S	DP	ST
3	Promotion & facilitation of RE application in govt. schools & central kitchens of UT by		H				
A	Installation of solar power & solar cooking technologies in 50 schools to convert those as Green schools by 2016	Directorate of School Education		MI	S	IP	MT
B	Installation of solar concentrator based cooking system in 3 central kitchens of Puducherry region by 2014 and in all central kitchens of UT by 2016	Directorate of School Education		MI	D	IP	MT
4	Enhancement of solar lighting application in public places through demonstration projects		H				
A	Installation of 1,000 solar street lights in Thattanchavady & Mettupalayam Industrial Estates by 2015	REAP, Department of I&C		MI	PA	IP	MT
B	Installation of solar street lights in 9 govt. parks and 4 grounds by 2015	REAP, LAD Puducherry		MI	D	DP	MT
C	Installation of 5,000 solar street lights in remote/ internal roads of Puducherry region by 2016	REAP, LAD		MI	S	IP	MT

Sl. No.	Title	Organizations	Priority	Type	Scale	Nature	Time Frame
5	Strengthening technical competency of various stakeholders of RE technology including O&M person, technician, installer, manufacturer & others by		H				
A)	Introduction of subject or paper on RE technology, system installation, O&M, repair, etc. in all ITIs of the UT.	REAP, H&TE		MI	S	CB	ST
B)	Introducing technical course on Renewable energy technology at Poly-technic /BE Engineering colleges.	REAP, H&TE		MI	S	CB	ST
C)	Conducting certificate courses for strengthening of technical competency of the existing solar and other RE technology service providers.	REAP, H&TE		MI	S	CB	ST
6	Promotion of Solar water heating application in health sectors by		H				
A)	Installation of Solar Water Heating systems in 8 Govt. Hospitals by 2014	Dept. of Health & Family Welfare Services, REAP, PWD		MI	S	DP	ST
B)	Installation of Solar Water Heating systems in 39 Public Health Centers (PHC) and 4 Community Health Centre's (CHC) by 2016	Dept. of Health & Family Welfare Service, REAP, PWD		MI	S	IP	MT
C)	Mandate use of Solar Water Heating systems in all private hospitals, medical colleges and hostels by 2017 through policy measures	Dept. of Health & Family Welfare Services, REAP		MI	S	PA	MT
7	Mandatory use of Solar Water Heating system in hotel sector through		H				
A)	Installation of Solar Water Heating systems in all star rated hotels by 2014	REAP, Puduch erry Tourism Dept.		MI	S	IP	ST
B)	Installation of Solar Water Heating systems in all hotels, guest houses of more than 150 sq. m by 2016	REAP, Puduch erry Tourism Dept.		MI	S	IP	MT

Sl. No.	Title	Organizations	Priority	Type	Scale	Nature	Time Frame
8	Promotion of grid interactive solar power generation in PPP/IPP mode through policy measures and facilitating setting up of 20 MW rooftop and small solar power plants of up to 2 MW capacity.	REAP, Electricity Dept.	H	MI	S	PA & IP	MT
9	Promotion of solar application in public buildings for lighting and hot water usage through demonstration project of 50 kW solar power and 1000 LPD SWH installation in two govt. buildings	PWD, REAP	H	MI	PA	DP	ST
10.	Promotion of off-grid solar power plants by facilitating deployment of 5 MW stand-alone off-grid solar power plant of capacity within 50 - 100 kW in 12th plan period in PPP mode.	REAP	M	MI	S	PA & IP	MT
11.	Promotion of Solar Water Heating Application in Institutional sector through demonstration project		M				
12.	Installation of Solar Water heating systems in govt. hostels 9 hostels of Puducherry region by 2014 9 hostels of outlying regions by 2016	REAP, Adi Dravidar Welfare Department		MI	S	DP	MT
A.	Installation of Solar Water Heating systems in special schools for differently abled children at Pillaichavady and Ariyankuppam of Puducherry Region	REAP, SW		MI	PA	DP	MT
12.	Undertake research & development activity on solar technology through establishment of solar energy resource institute in the UT under National Solar Mission for R&D programmes.	REAP	M	MI	PA	RS	LT
13.	Amendment of Building Bye Laws through incorporation of Renewable Power Obligation (RPO) for buildings of more than 20,000 sq. ft.	T&CPRPAs, REAP Electricity Dept.	M	MI	S	PA	MT
14.	Awareness in regard to the subsidy disbursement and information about channel partner	REAP	M	MI	S	CB	ST
15.	Emphasise towards operation and maintenance of existing solar water heater	REAP	M	MI	S	OM	ST

1.1. Solar Mission

Priority *H High, M Medium, L Low;*

Type ***MI - Mitigation, AD Adaptation;***

Scale ***S State-wide, A Particular/Focused Area***

Nature ***RS - Research Study, PA - Policy Action, PS - Pre-investment Study, DP - Demonstration Project, IP - Investment Project, CB - Capacity Building, OM - Regular Operation & Maintenance;***

Timeframe ***ST Short-term, MT - Medium Term, LT Long term***

1.2. Mission on Enhanced Energy Efficiency

Sl. No.	Title	Organizations	Priority	Type	Scale	Nature	Time Frame
1	Development and promotion of Policy measures towards up-gradation of existing production/manufacturing process across the industrial facilities to energy efficient one.	REAP, PPCL, Electricity Dept.,PIPDIC, I&C	H	MI	S	PA	ST
2	Enforcing Energy Audit and its implementation across the industrial facilities	REAP, PPCL, Electricity Dept., PIPDIC, I&C	H	MI	S	PA & IP	ST
3	Incorporate conditions as a part of building permit to adopt star rated energy efficient electrical appliances and use of CFL	REAP, PPA, RPA, LAD Electricity Dept.,	H	MI	S	PA	ST
4	Institution of energy conservation award	REAP, PPCL, Electricity Dept., PIPDIC	H	MI	S	PA & RO& M	ST
5	Enforcement towards use of Energy Efficient Lighting in all Govt. & commercial building	REAP, PPCL, Electricity Dept., PWD	H	MI	S	PA	ST
6	Facilitating energy audit across all large (in terms of energy consumption) government offices and retrofitting of existing energy inefficient system with efficient and star rated products	REAP, PPCL, Electricity Dept.,	H	MI	S	PA, DP	ST
7	Promoting and Adapting Energy Efficient technology measures and practices in new building	T & CP, RP As, REAP, Electricity, PWD	H	MI	S	PA, IP	ST
8	Creation of green corpus fund	REAP, PPCL, Electricity Dept	H	MI	S	PA	ST
9	Enlist Certified Energy Auditor and Energy Manager with State Designated Agency (Nodal Department) under BEE for implementation of Energy Conservation Act	REAP	M	MI	S	PA	MT

Sl. No.	Title	Organizations	Priority	Type	Scale	Nature	Time Frame
10	Implementation of Energy Efficient Street light, Public /Community Lighting facility and Traffic Light system.	REAP, Electricity Dept., Urban Local Bodies	M	MI	S	PS, IP	MT
11	Provisioning of Property Tax concession for building implementing energy conservation measures.	REAP, Finance Dept, Planning Dept, Commercial Tax	L	MI	S	PA	MT
12	Extending Debt service concession by FI of Government to GRIHA certified building	REAP, Finance Dept, Planning Dept, FI	L	MI	S	PA	MT
13	Commissioning of UT Level Energy Education Park	REAP	L	MI	A	DP, IP	LT
14	Creation of Green corpus fund to abate over exploitation of fossil fuel and encourage energy conservation	REAP	L	MI	S	PA, PS	MT
15	Promotion of Organic LED	REAP, Electricity Dept.	L	MI	S	CB	LT
16	Promoting auto sensor in domestic household, office building and complex to prevent water loss as well as energy due to over flow of water from overhead pump	REAP, Electricity Dept.	L	MI	S	IP	LT

1.2. Mission on Enhanced Energy Efficiency

Priority *H High, M Medium, L Low;*

Type ***MI - Mitigation, AD Adaptation;***

Scale ***S State-wide, A Particular/Focused Area***

Nature ***RS - Research Study, PA - Policy Action, PS - Pre-investment Study, DP - Demonstration Project, IP - Investment Project, CB - Capacity Building, OM - Regular Operation & Maintenance***

Timeframe ***ST Short-term, MT - Medium Term, LT Long term***

1.3. Sustainable Habitat Mission

Sl. No.	Title	Organizations	Priority	Type	Scale	Nature	Time Frame
1	Adopting ECBC code for residential apartments and commercial centers	T&CP	H	MI	S	PA	ST
2	Waste water recycling & Strengthening/ modifications of exiting STPs	T&CP	H	MI	S	PA	MT
3	Promotion of Green buildings and green building certificate	T&CP	H	MI	S	PA	MT
4	Integrated municipal solid waste management	LAD	H	MI	S	IP/ OM	MT
5	Establishment of modern slaughter house within Puducherry Municipality	LAD	H	MI	A	IP	ST
6	Capacity building programmes of Urban Local Bodies (ULBs)/ stakeholders of the coastal towns on potential climate change impacts (Tsunami, cyclone, flooding of low-lying coastal areas, land loss and displacement) and additional preparedness requirements.	LAD	H	AD	S	CB	ST
7	Promotion of eco-friendly road construction methods and capacity building of stakeholders	PWD	H	AD	S	PA /CB	ST
8	Climate friendly transport management and promotion of Public transport	Transport	H	MI	S	PA	ST
9	Promotion of use of cooking gas from kitchen waste in bio-digester	REAP	H	MI	S	DP	ST
10	Strengthening/ modifications of exiting STPs	PWD	M	MI	A	IP/ OM	ST
11	Installation of Bio Medical Waste Management facilities in public sector hospitals	Health Dept.	M	MI	A	IP	LT
12	Capacity building and training of health care facilities personnel on biomedical waste management	Health Dept.	M	AD	S	CB	MT
13	Developing climate- responsible master plans for selected city/towns (CDP)	T&CP	M	AD	A	RS/ PS	MT
14	Adapting preventive and mitigation measures to contain spreading of contagious diseases during natural calamities	Health Dept.	M	AD	S	IP	LT

Sl. No.	Title	Organizations	Priority	Type	Scale	Nature	Time Frame
15	Compliance of all the Hospitals, Medical college, Health Care facilities and all Veterinary care centers with provisions of BMW Rule, 1998	Health Dept.	M	MI	S	OM	MT
16	Promotion of urban tree plantation with a view to realize the co-benefits with respect to climate change effects as well as carbon sinks on a pilot basis and to establish a plan to scale-up across the UT	Forestry Dept.	M	MI	S	PA/ DP	MT
17	Recycling and Reuse of the Building and road construction materials	PWD	M	MI	S	DP	LT
18	Installation of CNG dispensing centers	Transport	M	AD	S	IP	LT
19	Periodic vehicular emission test	Transport	M	AD	S	OM	ST
20	Implement a demonstration project of bio-fuel extraction & utilisation for transportation	Transport Dept.	M	MI	A	DP	MT
21	Assessment and inventorisation of climate change impact on urban sector will help to quantify the share of Urban Sector in the pollutant levels in the city/towns	LAD	L	AD	S	RS	MT
22	Urban poor Mapping to Identify vulnerable urban population	LAD	L	AD	S	PS	MT
23	Tax concessions for eco friendly vehicles	Transport	L	AD	S	PA	MT
24	Effective enforcement of Motor Vehicles Act to discourage use of old vehicles	Transport	L	AD	S	PA	MT
25	Quantitative assessment of the impact of climate change	Transport	L	AD	S	RS	ST
26	Initiate the implementation of the energy-efficiency initiatives in urban street lighting in Puducherry and other district towns	REAP	L	MI	S	PA /IP	MT

1.3. Sustainable Habitat Mission

Priority *H High, M Medium, L Low;*

Type ***MI - Mitigation, AD Adaptation;***

Scale ***S State-wide, A Particular/Focused Area***

Nature ***RS - Research Study, PA - Policy Action, PS - Pre-investment Study, DP - Demonstration Project, IP - Investment Project, CB - Capacity Building, OM - Regular Operation &Maintenance;***

Timeframe ***ST Short-term, MT - Medium Term, LT Longterm***

1.4. Mission for a Green Puducherry &Sustainable Agriculture

Sl. No.	Title	Organizations	Priority	Type	Scale	Nature	Time Frame
1	Enhancing productivity through introduction of genetically superior seedlings	Dept. F&WL	H	MI	S	IP	MT
2	Wildlife and biodiversity conservation by Insitu & exsitu methods	Dept. F&WL	H	AD	S	IP	MT
3	Promotion of farm forestry and agro forestry	Dept. F&WL	H	MI	S	IP	MT
4	Consolidation and protection of forests	Dept. F&WL	H	MI	S	PA	MT
5	Development of ecotourism and involving local communities	Dept. F&WL	H	AD	S	IP	ST
6	Identification and propagation of adaptive species through modern nurseries	Dept. F&WL	H	MI	S	RS	ST
7	Study on REED & REED +feasibility for afforestation in Puducherry	Dept. F&WL	H	MI	S	RS	ST
8	Capacity building of staff	Dept. F&WL	H	AD	S	CB	MT
9	Protection of Mangrove forests	Dept. F&WL	H	MI	S	PA	MT
10	Monitoring critical faunal habitats [turtles/ littoral birds] to assess impact of climate change	Dept. F&WL	H	AD	S	OM	MT
11	Drip Irrigation for 30% of land area under Horticulture	Dept. of Agri., KVK	H	MI	S	IP	MT
12	Promotion of solar pumps for irrigation purpose by replacing 5 nos. diesel pumps with solar pumps	REAP, Dept. of Agri.	H	MI	A	DP	ST
13	Educating farmers on better cropping systems, drought resistance crop, minimization of chemical fertilizer and encouraging organic farming and soil reclamation program	Dept. of Agri.	**H**	**AD**	**S**	**RS, CB**	**MT**
14	Replacing existing pumps by foot valve motor pumps in Karaikal region	Dept. of Agri. REAP, Electricity Dept.	H	MI	A	IP,	MT
15	Marine Biodiversity conservation through Artificial coral reef	Dept. F&WL	M	AD	S	IP	MT
16	Promotion of Integrated weed management (IWM) and Integrated pest management (IPM))	Dept. of Agri.	M	AD	S	PA	MT

Sl. No.	Title	Organizations	Priority	Type	Scale	Nature	Time Frame
17	Study and commercialization of Combined use of remote sensing, GIS (Geographic Information System) and GPS (Global Positioning System) towards detecting, mapping and monitoring the spread of weeds over inaccessible areas and disease intensity for risk mapping and epidemiological purposes.	Dept. of Agri.	M	AD	S	RS	MT
18	Studies towards selection of adaptable genotypes, genetic manipulation to overcome extreme climatic stresses.	Dept. of Agri.	M	AD	S	RS	MT
19	Promoting drip irrigation since drip irrigation minimizes water losses due to run-off and deep percolation and water savings of 50-80% are achieved when compared to most traditional surface irrigation methods.	Dept. of Agri.	M	AD	S	IP	MT
20	Training of farmers over simple, affordable and accessible technologies like, mulching and use of shelters and raised beds help to conserve soil moisture, prevent soil degradation, and protect vegetables from heavy rains, high temperatures, and flooding. The use of mulch helps reduce evaporation, moderate soil temperature, reduce soil runoff and erosion, protect fruits from direct contact with soil and minimize weed growth.	Dept. of Agri.	M	AD	S	CB	MT
21	Development of heat and/or drought and/or salt tolerant genotypes.	Dept. of Agri.	M	AD	S	IP	ST
22	Undertaking research over planting dates (early or late showing) to avoid heat stress during flowering and maturity of crop.	Dept. of Agri.	M	AD	S	RS	ST
23	Promoting crop insurance as a strategic intervention for covering risks of climatic extremes.	Dept. of Agri.	M	AD	S	IP	MT
24	Promotion of use of organic sources of nutrients and avoiding use of chemical pesticides and conservation of agricultural land from degradation	Dept. of Agri.	M	AD	S	IP	MT

Sl. No.	Title	Organizations	Priority	Type	Scale	Nature	Time Frame
25	Facilitating the concept of precision farming, improved nutrient management, use of efficient microbes, inter cropping/mixed cropping, agro horticulture, agro forestry and indigenous technological knowledge.	Dept. of Agri.	M	AD	S	PS	MT
26	Use of genetic engineering to convert C-3 crops to the more carbon responsive C-4 crops to achieve greater photosynthetic efficiency for obtaining increased productivity at higher levels of carbon dioxide in the atmosphere or sustain thermal stresses.	Dept. of Agri.	M	AD	S	IP	LT
27	Creation of database to record collection and dissemination of information on fish availability status up to 12 nautical miles and climatic changes of the ocean.	Dept. of Fishs.	M	AD	S	DP	MT
28	Conservation of genetic resources of marine flora and fauna	Dept. of Fishs.	M	AD	S	PS	MT
29	Conservation of marine turtles	Dept. of Fishs.	M	AD	S	IP	MT
30	Promotion of sustainable coastal tourism	Dept. of Fishs.	M	AD	S	IP	MT
31	Providing veterinary health services to farmers, livestock owners and pet owners	Dept. of Animal Husbandry	M	AD	S	IP	LT
32	Promoting Soil solarization technique (Soil solarization plays a big role in the management of weeds, nematodes and pathogens under the conditions of increased temperature)	Dept. of Agri.	L	AD	S	IP	MT
33	Prediction of Probable Distribution of Crop Diseases under Climate Change Scenario for Long-term Strategic Decisions.	Dept. of Agri.	L	AD	S	IP	MT
34	Developing crop varieties tolerant to salinity, long dry spell and suitable to rain fed agriculture.	Dept. of Agri.	L	AD	S	IP	LT
35	Research over the possible options of grafting of susceptible plant (scion) on tolerant plant.	Dept. of Agri.	L	AD	S	RS	ST
36	Undertaking research over use of biotechnology in plant breeding.	Dept. of Agri.	L	AD	S	RS	MT

Sl. No.	Title	Organizations	Priority	Type	Scale	Nature	Time Frame
37	Field testing and assessment of viability of conservation agriculture across the four isolated regions.	Dept. of Agri.	L	AD	S	RS	ST
38	Demarcation of eco protected areas	Dept. of Fishs.	L	AD	S	IP	MT
39	Setting up marine Oceanarium	Dept. of Fishs.	L	AD	S	IP	MT
40	Creation of green belt in and around the industries to abate pollution	Department of Forest	L	MI	S	IP	LT
41	Concept of City Forest, Biodiversity Park, Orchid garden, Botanical garden, Rose Garden.	Department of Forest	L	MI	S	IP	LT
42	Enhancing productivity through introduction of genetically superior seedlings	Dept. F&WL	L	MI	S	IP	ST
43	Enhancing productivity through introduction of genetically superior seedlings	Dept. F&WL	L	AD	S	IP	ST
44	Regulating real estate and prevention encroachment of land under forest/ plantation/ agriculture	Dept. F&WL, Dept. of Agriculture	L	MI	S	PA	ST
45	Promoting gender parity while determining agriculture wages	Dept. F&WL, Dept. of Agriculture	L	AD	S	PA	ST
46	Introduction of Early warning system at agriculture department to support farmer in cropping and contingency planning	Dept. of Agriculture	L	AD	S	IP	MT

1.4. Mission for a Green Puducherry &Sustainable Agriculture

Priority *H High, M Medium, L Low;*

Type ***MI - Mitigation, AD Adaptation;***

Scale ***S State-wide, A Particular/Focused Area***

Nature ***RS - Research Study, PA - Policy Action, PS - Pre-investment Study, DP - Demonstration Project, IP - Investment Project, CB - Capacity Building, OM - Regular Operation & Maintenance;***

Timeframe ***ST Short-term, MT - Medium Term, LT Long term***

1.5. Water Mission

Sl. No.	Title	Organizations	Priority	Type	Scale	Nature	Time Frame
1	Rain water harvesting pond creation of 10% of land area	Dept. of Agri.	H	AD	S	IP/ OM	MT
2	Desiltation of all the temples and village/ farm ponds	LAD	H	AD	S	IP	MT
3	Channelising storm water into village pond or ground water recharge	LAD	H	AD	S	IP/ OM	MT
4	Promotion of percolation pits in housing colonies and in urban areas	PWD	H	AD	A	DP	ST
5	Promoting Rain water harvesting arrangements as per building by-laws in all new Public buildings of terrace area more than 200 sq.m or Plot area more than 300 sq. m, in all existing Public buildings of terrace area more than 200 sq.m or Plot area more than 300 sq. m in phased manner, in all new Residential buildings of terrace area more than 100 sq.m or Plot area more than 200 sq. m,in all existing Residential buildings of terrace area more than 100 sq.m or Plot area more than 200 sq. m in phased manner, in all new Commercial buildings of terrace area more than 100 sq.m or Plot area more than 200 sq. m, all existing Commercial buildings of terrace area more than 100 sq.m or Plot area more than 200 sq. m in phased manner, all new Industrial buildings of terrace area more than 100 sq.m or Plot area more than 200 sq. m, all existing Industrial buildings of terrace area more than 100 sq.m or Plot area more than 200 sq. m in phased manner	PWD. T&CP, Dept. of Industries, PPCB	H	AD	A	DP	ST
6	Integrated Water Resources Management	LAD	M	AD	S	CB	MT
7	Capacity building of communities on adaptation options required for integrated demand side as well as supply side strategies during climate stressed condition	LAD	M	AD	S	CB	ST
8	Impact assessment study of climate change on aquatic ecosystem	LAD	M	AD	S	RS	ST
9	Promotion of dual flash type toilet in all new households/ new constructions	PWD	M	AD	S	PA/ IP	ST

Sl. No.	Title	Organizations	Priority	Type	Scale	Nature	Time Frame
10	Promotion of water less urinals, auto flushing group urinals, electronic sensor taps etc. in public buildings, hospitals, commercial spaces to consume less water	PWD	M	AD	S	PA/ DP	ST
11	Recycling of waste water for toilet flushing in new households	PWD	M	MI	A	IP/ OM	ST
12	Fixation of water pricing based on rate of consumption	PWD	L	AD	S	PA	MT
13	Increasing the water use efficiency, bench marking and water audit in irrigation project	Dept. of Agri.	L	AD	S	DP/ OM	LT
14	Establishment of water Resource Department	PWD	M	AD	S	PA	MT
15	Promoting SRI and providing financial benefit for cultivation of less water intensive crops	Dept. of Agri., PWD	M	AD	S	PA	MT
16	Maintenance of existing rain water harvesting structure	PWD	M	AD	S	OM	MT
17	License to be provided to package water industry after through study of the ground water level in the region	PWD	L	AD	S	PA	MT

1.5. Water Mission

Priority *H High, M Medium, L Low;*

Type *MI - Mitigation, AD Adaptation;*

Scale *S State-wide, A Particular/Focused Area*

Nature *RS - Research Study, PA - Policy Action, PS - Pre-investment Study, DP - Demonstration Project, IP - Investment Project, CB - Capacity Building, OM - Regular Operation & Maintenance;*

Timeframe *ST Short-term, MT - Medium Term, LT Long term*

1.6. Strategic Knowledge Mission

Sl. No.	Title	Organizations	Priority	Type	Scale	Nature	Time Frame
1	Creating awareness on water and energy conservation, composting, source segregation of House hold waste, plantation	DSTE	H	AD	S	CB	MT
2	Educating farmers on better cropping systems, drought resistance crop, minimization of chemical fertilizer and encouraging organic farming and soil reclamation program	Dept. of Agri	H	AD	S	RS, CB	MT
3	Advocating clean development mechanism, resource conservation and waste minimization through seminar/ workshop	DSTE	H	MI	S	CB	ST
4	Capacity building on mitigation/adaptation of Green House Gases among the officers and establishment of a climate change cell	DSTE	H	MI	S	CB	ST
5	Inventorisation of GHG generation from industries and other sectors	DSTE	H	MI	S	RS	ST
6	Setting up of Energy Bench Mark for all government buildings/ institutions	Electricity Department	H	MI	S	PA, CB	ST
7	Establishing a network of knowledge institutions, location specific research on climate science, setting up of an effective mechanism for data sharing and access and organizing conferences/ workshops on climate change and related issues	DSTE(DSTE) and Puducherry Council for Science and Technology	H	AD	S	PS, IP, CB	MT
8	Evaluation of action plan programmes and providing budget support to implementing departments/ authorities	DSTE and Planning and Research Department	H	AD	S	RS	MT
9	Studies on impact of climate change on disease incidence, surface and ground water resources. Establishment of forecasting arrangement for agricultural and health sector agricultural and health sector	DSTE	M	AD	S	RS	MT
10	Climate mandate Hazards risks vulnerability assessment and mapping for the coastal regions	DSTE	M	AD	S	RS	ST
11	Framing up e-governance related to climate Change action plan	DSTE	M	AD/ MI	S	IP	LT

1.6. Strategic Knowledge Mission

Priority — *H High, M Medium, L Low;*

Type — *MI - Mitigation, AD Adaptation;*

Scale — *S State-wide, A Particular/Focused Area*

Nature — *RS - Research Study, PA - Policy Action, PS - Pre-investment Study, DP - Demonstration Project, IP - Investment Project, CB - Capacity Building, OM - Regular Operation & Maintenance;*

Timeframe — *ST Short-term, MT - Medium Term, LT Long term*

1.7 Coastal Mission

Sl. No.	Title	Organizations	Priority	Type	Scale	Nature	Time Frame
1	Flood Mapping and Development of Climate change projection Model and its impact on coastal ecosystem in Puducherry	DRDM, PIA, DSTE	H	AD	S	RS, PS	ST
2	Assessment of Erosion prone Area with the help of Digital elevation model and strengthen coastal protection method through improved technology	PWD, Port,	H	AD	A	PS	ST
3	Study on Micro level vulnerability assessment due to climate change on coastal ecosystem	PCZMA, DRDM, Fisheries	H	AD	S	RS,	MT
4	DPR on flood shelters, multipurpose cyclone shelters in vulnerable location in Coastal line and construction of flood shelters, multipurpose cyclone shelters and climate resilient buildings and infrastructure including electrical network that can withstand multiple hazards	PIA, DRDM,	H	AD	A	PS, IP	LT
5	Development of a techno legal regime for construction of Disaster resilient housing and public infrastructure	DRDM, PIA, PWD, TCP	H	AD	S	RS,	MT
6	Integration of Climate change risk in the disaster Management policy of the UT	DRDM, DSTE	H	AD	S	PA	ST
7	Establishment of an integrated training and Capacity building protocol and knowledge management for better assessment of climate risks and best management practices	DRDM, DSTE	H	AD	S	CB	ST

Sl. No.	Title	Organizations	Priority	Type	Scale	Nature	Time Frame
8	Study on Impact of Climate change on Marine Biodiversity with special emphasis on Flagship species and coastal flora and fauna	Forest, DSTE	H	AD	S	PA	ST
9	Strengthening delivering and monitoring system and preparedness in disaster prone coastal area	DRDM, DSTE PIA, PWD	H	AD	S	OM, CB	ST
10	GIS based mapping along the selected vulnerable coastal area of Puducherry	DRDM, DSTE, TCP, Agriculture	H	AD	S	RS, PS	ST
11	Development of Sustainable aquaculture	DSTE, Fisheries	H	AD	S	IP, PS	ST
12	Preservation of sand dunes, mangroves undertaking dredging and creation of drainage	PCZMA	M	AD	A	IP	MT
13	Study on sea level rise	PCZMA	M	AD	A	RS	MT

1.7 Coastal Mission

Priority H High, M Medium, L Low;

Type *MI - Mitigation, AD Adaptation;*

Scale *S State-wide, A Particular/Focused Area*

Nature *RS - Research Study, PA - Policy Action, PS - Pre-investment Study, DP - Demonstration Project, IP - Investment Project, CB - Capacity Building, OM - Regular Operation & Maintenance;*

Timeframe *ST Short-term, MT - Medium Term, LT Long term*

Annexure II Key Priority List
Key Priority List : Solar Mission

Sl. No.	Title	Adaptation / Mitigation (ST, MT, LT)	Organization	Budget (In Million INR)			Source of funding
				Existing	Additional	Total	
1	**Harnessing Solar Energy potential scenario of the UT by assessment of Solar Energy potential & preparation of Solar Map**	M-ST	REAP	**Nil**	**5.00**	**5.00**	GoI, GoPY, EFA
2	**Mandatory use of Solar Water heating systems in domestic sector through policy action and demonstration projects**		REAP				GoI, GoPY, EFA
A)	Mandatory use of Solar water heating systems in all group houses and apartments of more than 150 sq. m. by 2016	M-MT	T&CP				
B)	Maximizing use of Solar water heating systems in households of more than 1500 sq. ft. through demonstration project by 100 LPD SWH in 100 Nos. households by 2014 100 LPD SWH in 300 Nos. households by 2016	M-ST	T&CP	2.40	8.60	11.00	
3	**Promotion & facilitation of RE application in govt. schools & central kitchens of UT by**						GoI, GoPY, EFA
A)	Installation of solar power & solar cooking technologies in 50 schools to convert those as Green schools by 2016	M-MT	DSE	75.00	180.00	255.00	
B)	Installation of solar concentrator based cooking system in 3 central kitchens of Puducherry region by 2014 and in all centralkitchens of UT by 2016	M-MT	DSE	4.74	11.06	15.8	

Sl. No.	Title	Adaptation / Mitigation (ST, MT, LT)	Organization	Budget (In Million INR)			Source of funding
				Existing	Additional	Total	
4	**Enhancement of solar lighting application in public places through demonstration projects**						GoI, GoPY, EFA
A)	Installation of 1,000 solar street lights in Thattanchavady & Mettupalayam Industrial Estates by 2015	M-MT	REAP, I&C	9.60	23.40	33.00	
B)	Installation of solar street lights in 9 govt. parks and 4 grounds by 2015	M-MT	REAP, LAD	4.88	12.88	17.75	
C)	Installation of 5,000 solar street lights in remote/ internal roads of Puducherry region by 2016	M-MT	REAP, LAD	48.00	114.00	162.00	
5	**Strengthening technical competency of various stakeholders of RE technology including O&M person, technician, installer, manufacturer & others by**			**Nil**	**5.00**	**5.00**	GoI, GoPY, EFA
A)	Introduction of subject or paper on RE technology, system installation, O&M, repair, etc. in all ITIs of the UT.	M-ST	REAP, H&TE				
B)	Introducing technical course on Renewable energy technology at Polytechnic /BE Engineering colleges.	M-ST	REAP, H&TE				
C)	Conducting certificate courses for strengthening of technical competency of the existing solar and other RE technology service providers.	M-ST	REAP, H&TE				
6	**Promotion of Solar water heating application in health sectors by**						GoI, GoPY, EFA
A)	Installation of Solar Water Heating systems in 8 Govt. Hospitals by 2014	M-ST	H&FWS, REAP, PWD	12.30	28.70	41.00	

Sl. No.	Title	Adaptation / Mitigation (ST, MT, LT)	Organization	Budget (In Million INR)			Source of funding
				Existing	Additional	Total	
B)	Installation of Solar Water Heating systems in 39 Public Health Centers (PHC) and 4 Community Health Centre's (CHC) by 2016	M-MT	H&FWS, REAP	2.58	11.02	13.60	
C)	Mandate use of Solar Water Heating systems in all private hospitals, medical colleges and hostels by 2017 through policy measures	M-MT	H&FWS REAP				
7	**Mandatory use of Solar Water Heating system in hotel sector through**						GoI, GoPY, EFA
A)	Installation of Solar Water Heating systems in all star rated hotels by 2014	M-ST	REAP, Tourism Dept.	9.00	23.00	32.00	
B)	Installation of Solar Water Heating systems in all hotels, guest houses of more than 150 sq. m. by 2016	M-MT	REAP, Tourism Dept.	15.00	40.00	55.00	
8	**Promotion of grid interactive solar power generation in PPP/IPP mode through policy measures and facilitating setting up of 20 MW rooftop and small solar power plants of up to 2 MW capacity.**	M-MT	REAP, Electricity	1,600	30.00	1,630	GoI, GoPY, EFA
9	**Promotion of solar application in public buildings for lighting and hot water usage through demonstration project of 50 kW solar power and 1000 LPD SWH installation in two govt. buildings**	M-ST	PWD, REAP	7.56	20.14	27.70	GoI, GoPY, EFA
	TotalBudget (in Million INR)			**1,791.06**	**512.80**	**2,303.85**	

Annexure II Key Priority List
Key Priority List : Solar Mission

[1] GoI : Government of India

[2] GoPY: Government of Puducherry

[3] EFA: External Funding Agencies

[4] T&CP Town and Country Planning

[5] DSE: Directorate of School Education

[6] I&C: Industries and Commerce

[7] LAD: Local Administrative Department

[8] H&TE: Directorate of Higher & Technical Education

Key Priority List: Enhanced Energy Efficiency Mission

Sl. No.	Title	Adaptation / Mitigation (ST, MT, LT)	Organization	Budget (In Million INR)			Source of funding
				Existing	Additional	Total	
1	Development and promotion of Policy measures towards up-gradation of existing production/manufacturing process across the industrial facilities to energy efficient one.	M-ST	REAP, PPCL, Electricity Dept.,PIPDIC, I&C	Nil 0.50	0.50		GoI, GoPY
2	Enforcing Energy Audit and its implementation across the industrial facilities	M-ST	REAP, PPCL, Electricity Dept., PIPDIC, I&C	Nil	2.50	2.50	GoI, GoPY, EFA
3	Incorporate conditions as a part of building permit to adopt star rated energy efficient electrical appliances and use of CFL	M-ST	REAP, PPA, RPA, LAD Electricity Dept.,	Nil	1.50	1.50	GoI, GoPY, EFA
4	Institution of energy conservation award	M-ST	REAP, PPCL, Electricity Dept., PIPDIC	1.00	Nil	1.00	GoI, GoPY, EFA
5	Enforcement of mandatory use of Energy Efficient Lighting in all Govt. Departments	M-ST	REAP, PPCL, Electricity Dept., PWD	Nil	5.00	5.00	GoI, GoPY, EFA
6	Facilitating energy audit across all large (in terms of energy consumption) government offices and retrofitting of existing energy inefficient system with efficient and star rated products	M-ST	REAP, PPCL, Electricity Dept.,	Nil	5.00	5.00	GoI, GoPY, EFA
7	Promoting and Adapting Energy Efficient technology measures and practices in new building	M-ST	T & CP, RPAs, REAP, Electricity, PWD	Nil	500.80	500.80	GoI, GoPY, EFA
8.	**Creation of Green corpus fund** Total Budget (in Million INR)	M-ST	REAP, ERC	Nil **1.00**	Nil **515.30**	Nil **515.30**	Consumer

[13] I&C : Industries and Commerce

Key Priority List: Sustainable Habitat Mission

Sl. No.	Title	Adaptation / Mitigation (ST, MT, LT)	Organization	Budget (In Million INR)			Source of funding
				Existing	Additional	Total	
1	Adopting ECBC code for residential apartments and commercial centers	M-ST	T&CP	Nil	0.80	0.80	GoI, GoPY, EFA
2	Establishment of modern slaughter house within Puducherry Municipality by 2015	M-ST	LAD	Nil	10.00	10.00	GoI, GoPY, EFA
3	Climate friendly transport management and promotion of Public transport	M-ST	Transport Dept.,	Nil	Nil	Nil	GoI, GoPY, EFA, MNRE
4	Promotion of use of cooking gas from kitchen waste in bio-digester	M-ST	REAP, Agriculture Dept.	Nil	Nil	Nil	GoI, GoPY, EFA,
	Demonstration project in 10 Nos. govt. guest/rest house, govt. office canteen, govt. training centers by 2015						
	Implementation of 30 Nos. bio-digesters in all central kitchens, temples, Anganwadi centers, govt. hostels of UT by 2017						
5	Waste water recycling & Strengthening/ modifications of exiting STPs	M-MT	T&CP, PWD	Nil	120.00	120.00	GoI, GoPY, EFA
6	Promotion of Green buildings and green building certificate	M-MT	T&CP	Nil	2.50	2.50	GoI, GoPY, EFA
7	Integrated Municipal solid waste management	M-MT	LAD	Nil	100.00	100.00	GoI, GoPY, EFA

Sl. No.	Title	Adaptation / Mitigation (ST, MT, LT)	Organization	Budget (In Million INR)			Source of funding
				Existing	Additional	Total	
8	Capacity building programmes of Urban Local Bodies (ULBs)/ stakeholders of the coastal towns on potential climate change impacts (Tsunami, cyclone, flooding of low-lying coastal areas, land loss and displacement) and additional preparedness requirements.	A-ST	LAD	Nil	2.50	2.50	GoI, GoPY, EFA
9	Promotion of eco-friendly road construction methods and capacity building of stakeholders	A-ST	PWD	202.50	0.00	202.50	GoI, GoPY, EFA
	Phase out old vehicles		Adi Dravirar Welfare, Dept. of Health, BDO/DRDA, Dept. of Education	Nil	4.00	4.00	
	Promoting Bijilee (Battery Operated Vehicles)			Nil	4.00	4.00	
	Periodic vehicular emission test			Nil	4.50	4.50	
	Switching of fuels and promotion of LPG/CNG			Nil	5.00	5.00	
	Promotion of public transport and mass transport within the city and town area will help in reducing GHG emissions			Nil	60.00	60.00	
	Promotion of bio fuel			Nil	5.00	5.00	
	Total Budget (in Million INR)			**205.35**	**324.45**	**529.80**	

Key Priority List: Sustainable Habitat Mission

[14] T&CP : Town & Country Planning

[15] GoI : Government of India

[16] GoPY: Government of Puducherry

[17] EFA: External Funding Agencies

[18] PWD: Public Works Department

[19] LAD: Local Administration Dept.

Key Priorities: Mission for a Green Puducherry & Sustainable Agriculture

Sl. No.	Title	Adaptation / Mitigation (ST, MT, LT)	Organization	Budget (In Million INR)			Source of funding
				Existing	Additional	Total	
1	Enhancing productivity through introduction of genetically superior seedlings	M-MT	Dept. of F&WL	Nil	**5.00**	**5.00**	GoI, GoPY, EFA
2	Wildlife and biodiversity conservation by Insitu &exsitu methods	A-MT	Dept. of F&WL	Nil	0.25	0.25	GoI, GoPY, EFA
3	Promotion of farm forestry and agro forestry Area = 50 ha	M-MT	Dept. of F&WL	Nil	**2.50**	**2.50**	GoI, GoPY, EFA
4	Consolidation and protection of forests (10million in each year)	M-MT	Dept. of F&WL	Nil	50.00	50.00	GoI, GoPY, EFA
5	Development of ecotourism and involving local communities	A-ST	Dept. of F&WL	Nil	1.00	1.00	GoI, GoPY, EFA
6	Identification and propagation of adaptive species through modern nurseries	M-ST	Dept. of F&WL	Nil	**4.00**	**4.00**	GoI, GoPY, EFA
7	Study on REED & REED +feasibility for afforestation in Puducherry	M-ST	Dept. of F&WL	Nil	10.00	10.00	GoI, GoPY, EFA
8	Capacity building of staff	A-MT	Dept. of F&WL	Nil	5.00	5.00	GoI, GoPY, EFA
9	Protection of Mangrove forests	M-MT	Dept. of F&WL	Nil	15.00	15.00	GoI, GoPY, EFA
10	Monitoring critical faunal habitats [turtles/ littoral birds]to assess impact of climate change	A-MT	Dept. of F&WL	Nil	3.00	3.00	GoI, GoPY, EFA
11	**Drip Irrigation for 30% of land area under Horticultureby 2013 and 50% by 2015**	**M-MT**	**Dept. of Agri, KVK**	Nil	**40.00**	**40.00**	GoI, GoPY, EFA
12	**Promotion of solar pumps for irrigation purpose by replacing 5 nos. diesel pumps with solar pumps**	**M-ST**	**REAP, Dept. of Agri**	Nil	**2.00**	**2.00**	GoI, GoPY, EFA
13	Educating farmers on better cropping systems, drought resistance crop, minimization of chemical fertilizer and encouraging organic farming and soil reclamation programme	**A-MT**	**Dept. of Agri**	Nil	10.00	10.00	GoI, GoPY, EFA
14	Replacing existing pumps by foot valve motor pumps in Karaikal region	**M-MT**	**Dept. of Agri**, REAP, Electricity Dept.	Nil	150.00	150.00	GoI, GoPY, EFA
	Total Budget (in Million INR)			**Nil**	**297.75**	**297.75**	

Key Priorities: Mission for a Green Puducherry & Sustainable Agriculture

[20] F&WL: Forest and Wild Life

[21] GoI : Government of India

[22] GoPY: Government of Puducherry

[23] EFA: External Funding Agencies

Key Priority List: Strategic Knowledge Mission

Sl. No.	Title	Adaptation / Mitigation (ST, MT, LT)	Organization	Budget (In Million INR)			Source of funding
				Existing	Additional	Total	
1	Creating awareness on water and energy conservation, composting, source segregation of House hold waste, plantation	A-MT	DSTE[24]	Nil	7.50	7.50	GoI, GoPY, EFA
2	Educating farmers on better cropping systems, drought resistance crop, minimization of chemical fertilizer and encouraging organic farming and soil reclamation program	A-MT	Dept. of Agri.	Nil	10.00	10.00	GoI, GoPY, EFA
3	Advocating clean development mechanism, resource conservation and waste minimization through seminar/ workshop	M-ST	DSTE	Nil	5.00	5.00	GoI, GoPY, EFA
4	Capacity building on mitigation/ adaptation of Green House Gases among the officers and establishment of a climate change cell	M-ST	DSTE	Nil	5.00	5.00	GoI, GoPY, EFA
5	Inventorisation of GHG generation from industries and other sectors	M-ST	DSTE	Nil	3.00	3.00	GoI, GoPY, EFA
6	Setting up of Energy Bench Mark for all government buildings/ institutions	M-ST	Electricity Department	Nil	2.00	2.00	BEE, EESL, GoI, GoPY, EFA
7	Establishing a network of knowledge institutions, location specific research on climate science, setting up of an effective mechanism for data sharing and access and organizing conferences/ workshops on climate change and related issues Puducherry Council for Science and Technology	A-MT	DSTE and	Nil	50.00	50.00	GoI, GoPY, EFA
8	Evaluation of action plan programmes and providing budget support to implementing departments/ authorities	A-MT	DSTE and Planning and Research Department	Nil	5.00	5.00	GoI, GoPY, EFA
	Total Budget (in Million INR)			**Nil**	**87.50**	**87.50**	

[24] DSTE: Department of Science, Technology and Environment

[25] GoI : Government of India

[26] GoPY: Government of Puducherry

[27] EFA: External Funding Agencies

Key Priority List: Coastal and Disaster Management Mission

Sl. No.	Key Priorities	Adaptation / Mitigation (ST, MT, LT)	Departments/ Organisation	Budget (In Million INR)			Source of funding
				Existing	Additional	Total	
1	Flood Mapping and Development of Climate change projection Model and its impact on coastal ecosystem in Puducherry	A-ST	DRDM, PIA, DSTE	Nil	50.00	50.00	GoI, GoPY, EFA
2	Assessment of Erosion prone Area with the help of Digital elevation model and strengthen coastal protection method through improved technology	A-ST	PWD, Port,	Nil	2,500.00	2,500	GoI, GoPY, EFA
3	Study on Micro level vulnerability assessment due to climate change on coastal ecosystem	A-MT	PCZMA, DRDM, Fisheries	Nil	10.00	10.00	GoI, GoPY, EFA
4	DPR on flood shelters, multipurpose cyclone shelters in vulnerable location in Coastal line and construction of flood shelters, multipurpose cyclone shelters and climate resilient buildings and infrastructure including electrical network that can withstand multiple hazards	A-LT	PIA, DRDM,	Nil	250.00	250.00	GoI, GoPY, EFA

Sl. No.	Key Priorities	Adaptation / Mitigation (ST, MT, LT)	Departments/ Organisation	Budget (In Million INR)			Source of funding
				Existing	Additional	Total	
5	Development of a techno legal regime for construction of Disaster resilient housing and public infrastructure	A-MT	DRDM, PIA, PWD, TCP	Nil	2.00	2.00	GoI, GoPY, EFA
6	Integration of Climate change risk in the disaster Management policy of the UT	A-ST	DRDM, DSTE	**Nil**	2.50	2.50	GoI, GoPY, EFA
7	Establishment of an integrated training and Capacity building protocol and knowledge management for better assessment of climate risks and best management practices	A-ST	DRDM, DSTE	Nil	1.00	1.00	GoI, GoPY, EFA
8	Study on Impact of Climate change on Marine Biodiversity with special emphasis on Flagship species and coastal flora and fauna	A-ST	Forest, DSTE	Nil	10.00	10.00	GoI, GoPY, EFA
9	Strengthening delivering and monitoring system and preparedness in disaster prone coastal area	A-ST	DRDM, DSTE, PIA, PWD	Nil	2.50	2.50	Government of India, External Agencies
10	GIS based mapping along the selected vulnerable coastal area of Puducherry	A-ST	DRDM, DSTE, TCP, Agriculture	Nil	500.00	500	Government of India, External Agencies
11	Development of Sustainable aquaculture	A-ST	DSTE, Fisheries	Nil	150.00	150	Government of India, External Agencies
	Total Budget (in Million INR)			Nil	3,478	3,478	

Key Priority List: Water Mission

Sl. No.	Title	Organization	Budget (In Million INR)			Source of funding
			Existing	Additional	Total	
1	Rain water harvesting pond creation of 10% of land area	Dept. of Agriculture	Nil	40.00	40.00	GoI, GoPY, EFA
2	Desiltation of all the temples and village/ farm ponds	LAD	Nil	500.00	500.00	GoI, GoPY, EFA
3	Channelising storm water into village pond or ground water recharge	LAD	Nil	500.00	500.00	GoI, GoPY, EFA
4	Promotion of percolation pits in housing colonies and in urban areas	PWD	Existing budget are there for taking up actions	Nil	Nil	GoI, GoPY, EFA
5	Rainwater harvesting for all type of new and existing buildings	PWD, T&CP, PUDA	Existing budget are there for taking up actions	Nil	Nil	GoI, GoPY, EFA
	Providing Rain water harvesting arrangements as per building by-laws in all new Public buildings of terrace area more than 200 sq.m or Plot area more than 300 sq.m Providing Rain water harvesting arrangements as per building by-laws in all existing Public buildings of terrace area more than 200 sq.m or Plot area more than 300 sq. m in phased manner					

GoI : Government of India
GoPY: Government of Puducherry
EFA: External Funding Agencies
LAD: Local Administrative Dept.
PWD: Public Works Department

Sl. No.	Title	Organization	Budget (In Million INR)			Source of funding
			Existing	Additional	Total	
	Providing Rain water harvesting arrangements as per building by-laws in all new Residential buildings of terrace area more than 100 sq.m or Plot area more than 200 sq. m					
	Providing Rain water harvesting arrangements as per building by-laws in all existing Residential buildings of terrace area more than 100 sq.m or Plot area more than 200 sq. m in phased manner					
	Providing Rain water harvesting arrangements as per building by-laws in all new Commercial buildings of terrace area more than 100 sq.m or Plot area more than 200 sq. m					
	Providing Rain water harvesting arrangements as per building by-laws in all existing Commercial buildings of terrace area more than 100 sq.m or Plot area more than 200 sq.m in phased manner					
	Providing Rain water harvesting arrangements as per building by-laws in all new Industrial buildings of terrace area more than 100 sq.m or Plot area more than 200 sq.m					
	Total Budget (in Million INR)		**Nil**	**1040**	**1040**	

List of Activities to be carried out in each Mission

Solar Mission

Harnessing Solar Energy in all possible areas (Solar Water heating, Solar Concentrator Lighting, SPV etc)

Preparation of Solar Map.

Capacity building on Renewable Energy across all stakeholders.

Awareness, Awards, etc

Amendment of Building Bye Laws for Renewable Power Obligation (RPO) for building more than 20,000 sq. Ft.

Mission on Enhanced Energy Efficiency

Mandatory Energy Audit for industries.

Replacement of Energy Efficient Lighting (i.e.) LED in commercial building.

Energy Efficient Technology in new building.

Creation of Green Corpus fund.

Fiscal Incentives for Energy Efficient / GRIHA Rated building.

Listing Certified Energy Auditor / Energy Manager.

Sustainable Habitat Mission

Adopting ECBC code for residential apartments and commercial centres.

Waste water recycling & Strengthening / modifications of existing STPs

Capacity building programmes of Urban Local Bodies (ULBs) / stakeholders of the coastal towns on potential climate change impacts (Tsunami, cyclone, flooding of low-lying coastal areas, land loss and displacement),

Promotion of eco-friendly road construction methods and capacity building of stakeholders.

Mission for a Green Puducherry & Sustainable Agriculture

Enhancing productivity through introduction of genetically superior seedlings.

Identification and propagation of adaptive species through modern nurseries.

Development of eco-tourism and involving local communities.

Study on REDD & REDD + Feasibility for Afforestation in Puducherry.

Educating farmers on better cropping systems, drought resistance crop, minimization of chemical fertilizer and encouraging organic farming and soil reclamation program.

Water Mission

Rain water harvesting pond creation of 10% of land area and Desolation of all the temples and village / farm ponds

Channelization storm water into village pond or ground water recharge.

Promotion of percolation pits in housing colonies and in urban areas.

Promoting SRI and providing financial benefit for cultivation of less water intensive crops.

Strategic Knowledge Mission

Creating awareness on water and energy conservation, composting, source segregation of House hold waste, plantation.

Inventorisation of GHG generation from industries and other sectors

Studies on impact of climate change on disease incidence, surface and ground water resources.

Climate mandate Hazards risks vulnerability assessment and mapping for the coastal regions.

Coastal Mission

Flood Mapping and Development of Climate Change project Model and its impact on coastal ecosystem in Puducherry.

DPR on flood shelters, multipurpose cyclone shelters in vulnerable location in Coastal line and construction of flood shelters, infrastructure including electrical network that can withstand multiple hazards.

GIS based mapping along the selected vulnerable coastal area and Preservation of sand dunes, mangroves undertaking dredging and creation of drainage.

Mission wise M&E Target

1.Solar Mission

Sl. No.	2014	2015	Organizations
1	**Installation of Solar water heater in** 100 Nos. households of size more than 1500 sq. ft.	**Installation of Solar water heater in** 300 Nos. households of size more than 1500 sq. ft.	REAP
2	Installation of Solar Water Heating systems in all star rated hotels, medical colleges and hostels	All the Hotels	REAP Electricity, RPAs,
3	Installation of Solar Water Heating in hospitals, hotels, guest house, schools, group houses, apartments of more than 150 sq.mt		REAP Electricity, RPAs,
4	Installation of Solar Water heating systems in all 9 hostelsin govt. buildings of Puducherry	Installation of Solar Water heating systems in all 9 hostels in govt. buildings in all outlying regions	REAP Adi Dravidar Welfare
5	Installation of solar concentrator based cooking system in3 central kitchens	Installation of solar concentrator based cooking system in all central kitchens of UT	REAP Directorate of School Education
6	Installation of Solar Water Heating systems in Govt. Hospitals, Maternity Hospitals	Installation of Solar Water Heating systems in all Public Health Centers (PHC)	REAP Health
7	Installation of Solar Water Heating systems in special schools for differently abled children at Pillaichavady and Ariyankuppam of Puducherry Region		REAP Social Welfare
8	Providing1,000 solar street lights in Thattanchavady&Mettupalayam Industrial Estates	Providingsolar street lights in all Industrial Estates	REAP Industries
9	Installation of solar street lights in 9 govt. parks and 4 grounds (subject to availability of Fund)	Installation of 5,000 solar street lights in remote/ internal roads of Puducherry region by 2016	REAP LAD

5.2.Mission on Enhanced Energy Efficiency

Sl. No.	2014	2015	Organizations
1	Provisioning of CFL distribution to household and replacing incandescent lamp in all new buildings	Provisioning of CFL distribution to household and incandescent replacing all lamp	REAP, PPCL, Electricity Dept.
2	Development and promotion of Policy measures towards up-gradation of existing production/manu facturing process across the industrial facilities to energy efficient one in 17 categories of highly polluting units	Development and promotion of Policy measures towards up-gradation of existing production/manufacturing process across the industrial facilities to energy efficient one in all large and medium industries	REAP, PPCL, Electricity Dept., PIPDIC, Industries & Commerce
3	Enforcing Energy Audit and its implementation in large scale industrial facilities	Enforcing Energy Audit and its implementation in medium scale industrial facilities	REAP, PPCL, Electricity Dept., PIPDIC, Industries & Commerce
4	Incorporate conditions as a part of building permit to adopt star rated energy efficient electrical appliances and use of CFL		REAP, PPA, RPA, LAD Electricity Dept.,
5	Institution of energy conservation award for industries	Institution of energy conservation award for commercial establishments	REAP, PPCL, Electricity Dept., PIPDIC
6	Enforcement of mandatory use of Energy Efficient Lighting in all Govt. Departments of area more than 10,000 sq. ft.	Enforcement of mandatory use of Energy Efficient Lighting in all Govt. Departments of area more than 5,000 sq. ft.	REAP, PPCL, Electricity Dept., PWD
7	Facilitating energy audit across all large (in terms of energy consumption) government offices and retrofitting of existing energy inefficient system with efficient and star rated products		REAP, PPCL, Electricity Dept.,

Sl. No.	2014	2015	Organizations
8	Promoting and Adapting Energy Efficient technology measures and practices in new building of area more than 10,000 sq. ft.	Promoting and Adapting Energy Efficient technology measures and practices in new building of area more than 5,000 sq. ft.	T & CP, RPAs, REAP, Electricity, PWD
9	Enlist Certified Energy Auditor and Energy Manager with State Designated Agency (Nodal Department) under BEE for implementation of Energy Conservation Act		REAP
10	Implementation of Energy Efficient Street light, Public /Community Lighting facility and Traffic Light system		REAP, Electricity Dept., Urban Local Bodies
11	Provisioning of Property Tax concession for building implementing energy conservation measures.		REAP, Finance Dept, Planning Dept, Commercial Tax
12	Extending Debt service concession by FI of Government to GRIHA certified building		REAP, Finance Dept, Planning Dept, FI
13	Commissioning of UT Level Energy Education Park in Puducherry		REAP
14	Creation of Green corpus fund to abate over exploitation of fossil fuel and encourage energy conservation		REAP

3.Sustainable Habitat Mission

Sl. No.	2014	2015	Organizations
1	Adopting ECBC code for residential apartments and commercial centers in Urban areas	Adopting ECBC code for residential apartments and commercial centers in rural areas	Town & Country Planning (T&CP)
2	Waste water recycling in commercial establishments generating 10,000 LPD and industries generating more than 50,000 LPD	Waste water recycling in commercial establishments generating 5,000 LPD and industries generating more than 10,000 LPD	Town & Country Planning (T&CP)
3	Promotion of Green buildings and green building certificate for all new buildings of area more than 10000 sq. ft.		Town & Country Planning (T&CP)
4	Developing climate- responsible master plans for selected city/towns (CDP)		Town & Country Planning (T&CP)
5	Integrated Municipal solid waste management: Establishment of integrated common municipal solid waste treatment facility at Kurumbapet	Municipal solid waste management: Establishment of integrated common municipal solid waste treatment facility in other municipalities and common Panchayats	Local Administration Dept. (LAD)
6	Establishment of modern slaughter house within Puducherry Municipality		Local Administration Dept. (LAD)
7	Capacity building programmes of Urban Local Bodies (ULBs) of the coastal towns on potential climate change impacts (Tsunami, cyclone, flooding of low-lying coastal areas, land loss and displacement) and additional preparedness requirements.	Capacity building programmes of all stakeholders of the coastal towns on potential climate change impacts (Tsunami, cyclone, flooding of low-lying coastal areas, land loss and displacement) and additional preparedness requirements.	Local Administration Dept. (LAD)

Sl. No.	2014	2015	Organizations
8	Assessment and inventorisation of climate change impact on urban sector will help to quantify the share of Urban Sector in the pollutant levels in the city/towns		Local Administration Dept. (LAD)
9	Urban poor Mapping to Identify vulnerable urban population		Local Administration Dept. (LAD)
10	Installation of Bio Medical Waste Management facilities in public sector hospitals		Health Dept.
11	Capacity building and training of health care facilities personnel on biomedical waste management		Health Dept.
12	Adapting preventive and mitigation measures to contain spreading of contagious diseases during natural calamities		Health Dept.
13	Compliance of all the Hospitals, Medical college, Health Care facilities and all Veterinary care centers with provisions of BMW Rule, 1998		Health Dept.
14	Promotion of urban tree plantation with a view to realize the co-benefits with respect to climate change effects as well as carbon sinks on a pilot basis and to establish a plan to scale-up across the UT		Forestry Dept.
15	Construction of Flyover and laying of bypass road	Construction of Flyover and laying of bypass road	Public Works Dept. (PWD)
16	Providing/ renewing underground sewerage systems to urban areas	Providing/ renewing underground sewerage systems to semi urban areas	Public Works Dept. (PWD)
17	Strengthening/ modifications of exiting STPs	Providing 3 additionalSTPs to treat 50 MLD in Puducherry	Public Works Dept. (PWD)
18	Promotion of eco-friendly road construction methods and capacity building of stakeholders		Public Works Dept. (PWD)
19	Recycling and Reuse of the Building and road constructionmaterials		Public Works Dept. (PWD)
20	Phase out old vehicles more than 20 years	Phase out old vehicles more than 15 years	Transport

Sl. No.	2014	2015	Organizations
21	Installation of CNG dispensing centers within Puducherry city limit	Installation of CNG dispensing centers in all areas other than Puducherry city limit	Transport
22	Tax concessions for eco friendly vehicles		Transport
23	Effective enforcement of Motor Vehicles Act to discourage use of old vehicles		Transport
24	Promoting Bijilee (Battery Operated Vehicles) within Puducherry city limit	Promoting Bijilee (Battery Operated Vehicles) in all areas other than Puducherry city limit	Transport
25	Periodic vehicular emission test : Setting up 50 nos. of automobile emission testing centres	Periodic vehicular emission test : Setting up 100 nos. of automobile emission testing centres	Transport
26	Switching of fuels and promotion of LPG/CNG in auto, new cars, new autos, taxis	Switching of fuels and promotion of LPG/CNG in PRTC buses	Transport
27	Promotion of public transport and mass transport within the city and town area will help in reducing GHG emissions within Puducherry city limit	Promotion of public transport and mass transport within the city and town area will help in reducing GHG emissions in all areas other than Puducherry city limit	Transport
28	Quantitative assessment of the impact of climate change		Transport
29	Using cooking gas from kitchen waste in 10 Nos. govt. guest/rest house, govt. office canteen, govt. training centers by 2015		REAP
30	Implementation of 30 Nos. bio-digesters in all central kitchens, temples, Anganwadicenters, govt. hostels of UT by 2017 and promotion of Community biogas plant in Dairies, village Panchayats, hostels, special school setc.		REAP, Adi Dravidar Welfare, Dept. of Health, BDO/DRDA, Dept. of Education
31	Initiate the implementation of the energy-efficiency initiatives in urban street lighting in Puducherry	Initiate the implementation of the energy-efficiency initiatives in urban street lighting in other district towns	Renewable Energy Agency Puducherry (REAP)
32	Promotion of Bio-fuel and conducting research and development study		Renewable Energy Agency Puducherry (REAP)
33	Implement a demonstration project of bio-fuel extraction &utilisation for transportation		Transport Dept.

4.Mission for a Green Puducherry &Sustainable Agriculture

Sl. No.	2014	2015	Organizations
1	Enhancing tree cover in urban areas through afforestation	Enhancing tree cover in semi urban areas through afforestation	Dept. of Forest and wildlife
2	Enhancing productivity through introduction of genetically superior seedlings		Dept. of Forest and wildlife
3	Eco-restoration of coastal areas by bio shelter plantations		Dept. of Forest and wildlife
4	Wildlife and biodiversity conservation by Insitu & exsitu methods		Dept. of Forest and wildlife
5	Enrichment of existing forest density in Puducherry city limit	Dept. of Forest and wildlife	Department of Forest and wildlife
6	Promotion of farm forestry and agro forestry		Dept. of Forest and wildlife
7	Consolidationand protection of forests		Dept. of Forest and wildlife
8	Water shed development through vegetative means in Puducherry city limit	Dept. of Forest and wildlife	Department of Forest and wildlife
9	Development of ecotourism and involving local communities in Puducherry city limit	Dept. of Forest and wildlife	Department of Forest and wildlife
10	Installation of 5 Solar Pumps as demo for irrigation		REAP, Agriculture
11	Identification and propagation of adaptive species through modern nurseries		Dept. of Forest and wildlife
12	Study on REED & REED +feasibility for afforestation in Puducherry		Dept. of Forest and wildlife
13	Capacity building of staff		Dept. of Forest and wildlife

Sl. No.	2014	2015	Organizations
14	Protection of Mangrove forests		Dept. of Forest and wildlife
15	Marine Biodiversity conservation through Artificial coral reef		Dept. of Forest and wildlife
16	Monitoring critical faunal habitats [turtles/ littoral birds] to assess impact of climate change		Dept. of Forest and wildlife
17	Drip Irrigation for 15% of land area under Horticulture	Drip Irrigation for 30% of land area under Horticulture	Dept. of Agriculture, KVK
18	Educating farmers on better cropping systems, drought resistance crop, minimization of chemical fertilizer and encouraging organic farming and soil reclamation program		Department of Agriculture
19	Replacing existing pumps by foot valve motor pumps in Karaikal region	Replacing existing pumps by foot valve motor pumps inthe UT	Department of Agriculture, REAP, Electricity Dept
20	Promoting Soil solarization technique (Soil solarization plays a big role in the management of weeds, nematodes and pathogens under the conditions of increased temperature)		Department of Agriculture
21	Promotion of Integrated weed management (IWM) and Integrated pest management (IPM))		Department of Agriculture
22	Study and commercialization of Combined use of remote sensing, GIS (Geographic Information System) and GPS (Global Positioning System) towards detecting, mapping and monitoring the spread of weeds over inaccessible areas and disease intensity for risk mapping and epidemiological purposes.		Department of Agriculture
23	Prediction of Probable Distribution of Crop Diseases under Climate Change Scenario for Long-term Strategic Decisions.		Department of Agriculture
24	Studies towards selection of adaptable genotypes, genetic manipulation to overcome extreme climatic stresses.		Department of Agriculture

Sl. No.	2014	2015	Organizations
25	Promoting drip irrigation since drip irrigation minimizes water losses due to run-off and deep percolation and water savings of 50% are achieved when compared to most traditional surface irrigation methods.	Promoting drip irrigation since drip irrigation minimizes water losses due to run-off and deep percolation and water savings of 80% are achieved when compared to most traditional surface irrigation methods.	Department of Agriculture
26	Training of farmers over simple, affordable and accessible technologies like, mulching and use of shelters and raised beds help to conserve soil moisture, prevent soil degradation, and protect vegetables from heavy rains, high temperatures, and flooding. The use of mulch helps reduce evaporation, moderate soil temperature, reduce soil runoff and erosion, protect fruits from direct contact with soil and minimize weed growth.		Department of Agriculture
27	Research over the possible options of grafting of susceptible plant (scion) on tolerant plant.		Department of Agriculture
28	Development of heat and/or drought and/or salt tolerant genotypes.		Department of Agriculture
29	Undertaking research over use of biotechnology in plant breeding.		Department of Agriculture
30	Field testing and assessment of viability of conservation agriculture across the four isolated regions.		Department of Agriculture
31	Undertaking research over planting dates (early or late showing) to avoid heat stress during flowering and maturity of crop.		Department of Agriculture
32	Promoting crop insurance as a strategic intervention for covering risks of climatic extremes.		Department of Agriculture
33	Promotion of use of organic sources of nutrients and avoiding use of chemical pesticides.		Department of Agriculture
34	Facilitating the concept of precision farming, improved nutrient management, use of efficient microbes, inter cropping/mixed cropping, agro horticulture, agro forestry and indigenous technological knowledge.		Department of Agriculture

Sl. No.	2014	2015	Organizations
35	Developing crop varieties tolerant to salinity, long dry spell and suitable to rain fed agriculture.		Department of Agriculture
36	Use of genetic engineering to convert C-3 crops to the more carbon responsive C-4 crops to achieve greater photosynthetic efficiency for obtainingincreased productivity at higher levels of carbon dioxide in the atmosphere or sustain thermal stresses.		Department of Agriculture
37	Creation of database to record collection and dissemination of information on fish availability status up to 12 nautical miles and climatic changes of the ocean.		Department of Fisheries
38	Demarcation of eco protected areas in Puducherry city limit	Demarcation of eco protected areas in all areas other than Puducherry city limit	Department of Fisheries
39	Conservation of genetic resources of marine flora and fauna		Department of Fisheries
40	Conservation of marine turtles		Department of Fisheries
41	Promotion of sustainable coastal tourism		Department of Fisheries
42	Setting up marine Oceanarium		Department of Fisheries
43	Providing veterinary health services to farmers, livestock owners and pet owners in Puducherry city limit	Providing veterinary health services to farmers, livestock owners and pet ownersin all areas other than Puducherry city limit	Department of Animal Husbandry
44	Creation of green belt in and around the industries to abate pollution		Department of Forest
45	Concept of City Forest, Biodiversity Park, Orchid garden, Botanical garden, Rose Garden.		Department of Forest

5.Water Mission

Sl. No.	2014	2015	Organizations
1	Drip Irrigation for 15% of land area under Horticulture	Drip Irrigation for 30% of land area under Horticulture	Dept. of Agriculture, KVK
2	Rain water harvesting pond creation of 5% of land area	Rain water harvesting pond creation of 10% of land area	Dept. of Agriculture
3	Increasing the water use efficiency, bench marking and water audit in irrigation project		Dept. of Agriculture
4	Desiltation of all the temples and village/ farm ponds in Puducherry city limit	Desiltation of all the temples and village/ farm pondsin all areas other than Puducherry city limit	Local Administrative Dept. (LAD)
5	Channelising storm water into village pond or ground water recharge	Channelising storm water into village pond or ground water recharge	Local Administrative Dept. (LAD)
6	Integrated Water Resources Management		Local Administrative Dept. (LAD)
7	Capacity building of communities on adaptation options required for integrated demand side as well as supply side strategies during climate stressed condition		Local Administrative Dept. (LAD)
8	Impact assessment study of climate change on aquatic ecosystem		Local Administrative Dept. (LAD)
9	Promotion of dual flash type toilet in all new house - holds/ new constructions in Puducherry city limit	Promotion of dual flash type toilet in all new households / new constructionsin all areas other than Puducherry city limit	Public Works Department (PWD)
10	Promotion of water less urinals, auto flushing group urinals, electronic sensor taps etc. in public buildings, hospitals, commercial spaces to consume less water in Puducherry city limit	Promotion of water less urinals, auto flushing group urinals, electronic sensor taps etc. in public buildings, hospitals commercial spaces to consume less water in all areas other than Puducherry city limit	Public Works Department (PWD)

Sl. No.	2014	2015	Organizations
11	Recycling of waste water for toilet flushing in new households in Puducherry city limit	Recycling of waste water for toilet flushing in new households in all areas other than Puducherry city limit	Public Works Department (PWD)
12	Fixation of water pricing based on rate of consumption	Fixation of water pricing based on rate of consumption in rural households	Public Works Department (PWD)
13	Promotion of percolation pits in housing colonies and in urban areas	Promotion of percolation pits in rural areas	Public Works Department (PWD)
14	Providing Rain water harvesting arrangements as per building by-laws in all new Public buildings of terrace area more than 200 sq.m or Plot area more than 300 sq. m	Providing Rain water harvesting arrangements as per building by-laws in all new Public buildings of terrace area more than 200 sq. m or Plot area more than 300 sq. m in phased manner	Public Works Department (PWD)
15	Providing Rain water harvesting arrangements as per building by-laws in all existing Public buildings of terrace area more than 200 sq. m or Plot area more than 300 sq. m	Providing Rain water harvesting arrangements as per building by-laws in all existing Public buildings of terrace area more than 200 sq. m or Plot area more than 300 sq. m in phased manner	Public Works Department (PWD)
16	Providing Rain water harvesting arrangements as per building by-laws in all new Residential buildings of terrace area more than 100 sq. m or Plot area more than 200 sq. m	Providing Rain water harvesting arrangements as per building by-laws in all new Residential buildings of terrace area more than 100 sq. m or Plot area more than 200 sq. m in phased manner	Town & Country Planning (T&CP)

Sl. No.	2014	2015	Organizations
17	Providing Rain water harvesting arrangements as per building by-laws in all existing Residential buildings of terrace area more than 100 sq. m Plot area more than 200 sq. m	Providing Rain water harvesting arrangements as per building by-laws in all existing Residential buildings of terrace area more than 100 sq. m Plot area more than 200 sq.m in phased manner	Town & Country Planning (T&CP)
18	Providing Rain water harvesting arrangements as per building by-laws in all new Commercial buildings of terrace area more than 100 sq. m or Plot area more than 200 sq. m	Providing Rain water harvesting arrangements as per building by-laws in all new Commercial buildings of terrace area more than 100 sq. m or Plot area more than 200 sq. m in phased manner	Town & Country Planning (T&CP)
19	Providing Rain water harvesting arrangements as per building by-laws in all existing Commercial buildings of terrace area more than 100 sq. m	Providing Rain water harvesting arrangements as per building by-laws in all Plot area more than 200 sq. m in phased manner	Town & Country Planning (T&CP)
20	Providing Rain water harvesting arrangements as per building by-laws in all new Industrial buildings of terrace area more than 100 sq. m or Plot area more than 200 sq. m	Providing Rain water harvesting arrangements as per building by-laws in all new Industrial buildings of terrace area more than 100 sq. m or Plot area more than 200 sq. m in phased manner	Town & Country Planning (T&CP)
21	Providing Rain water harvesting arrangements as per building by-laws in all existing Industrial buildings of terrace area more than 100 sq. m or Plot area more than 200 sq. m	Providing Rain water harvesting arrangements as per building by-laws in all existing Industrial buildings of terrace area more than 100 sq. m or Plot area more than 200 sq. m in phased manner	Town & Country Planning (T&CP)

6. Strategic Knowledge Mission

Sl. No.	2014	2015	Organizations
1	Creating awareness on water and energy conservation, composting, source segregation of House		Climate Change Cell, -Department of Science, Technology and hold waste, plantation Environment (DSTE)
2	Educating farmers on better cropping systems, drought resistance crop, minimization of chemical fertilizer and encouraging organic farming and soil reclamation program		Department of Agriculture
3	Advocating clean development mechanism, resource conservation and waste minimization through seminar/ workshop		Climate Change Cell, -Department of Science, Technology and Environment (DSTE)
4	Capacity building on mitigation/adaptation of Green House Gases among the officers	Establishment of a climate change cell	Climate Change Cell, -Department of Science, Technology and Environment (DSTE)
5	Inventorisation of GHG generation from industries	Inventorisation of GHG generation from other sectors	Climate Change Cell, -Department of Science, Technology and Environment (DSTE)
6	Setting up of Energy Bench Mark for all government buildings/ institutions in Puducherry city limit	Setting up of Energy Bench Mark for all government buildings/ institutions in all areas other than Puducherry city limit	Electricity Department

Sl. No.	2014 2015	Organizations
7	Establishing a network of knowledge institutions, location specific research on climate science, setting up of an effective mechanism for data sharing and access and organizing conferences/ workshops on climate change and related issues	Climate Change Cell, -Department of Science, Technology and Environment (DSTE) and Puducherry Council for Science and Technology
8	Evaluation of action plan programmes and providing budget support to implementing departments/ authorities	Climate Change Cell, -Department of Science, Technology and Environment (DSTE) and Planning and Research Department
9	Studies on impact of climate change on disease incidence, surface and ground water resources. Establishment of forecasting arrangement for agricultural and health sector	Climate Change Cell, -Department of Science, Technology and Environment (DSTE)
10	Climate mandate Hazards risks vulnerability assessment and mapping for the coastal regions	Climate Change Cell, -Department of Science, Technology and Environment (DSTE)
11	Framing up e-governance related to climate Change action plan	Climate Change Cell, -Department of Science, Technology and Environment (DSTE)

7.Coastal and Disaster Management Mission

Sl. No.	2014 2015	Organizations
1	Demarcation of HTL or LTL along the coastal stretches and preparation of revised coastal Zone Management Plan	DSTE, PIA, TCP, PCZMA, Anna University
2	Integrated Coastal Zone Management Plan Preparation	TCP, PWD, LAD, Fisheries, Agriculture, DSTE
3	Flood Mapping and Development of Climate change projection Model and its impact on coastal ecosystem in Puducherry	DRDM, PIA, DSTE
4	Assessment of Erosion prone Area with the help of Digital elevation model and strengthen coastal protection method through improved technology	PWD, Port,
5	Study on Micro level vulnerability assessment due to climate change on coastal ecosystem	PCZMA, DRDM, Fisheries
6	DPR on flood shelters, multipurpose cyclone shelters in vulnerable location in Coastal line and construction of flood shelters, multipurpose cyclone shelters and climate resilient buildings that can withstand multiple hazards	PIA, DRDM,
7	Development of a techno legal regime for construction of Disaster resilient housing and public infrastructure	DRDM, PIA, PWD, TCP
8	Integration of Climate change risk in the disaster Management policy of the UT	DRDM, DSTE
9	Establishment of an integrated training and Capacity building protocoland knowledge management for better assessment of climate risks and best management practices	DRDM, DSTE
10	Study on Impact of Climate change on Marine Biodiversity with special emphasis on Flagship species and coastal flora and fauna Forest,	DSTE
11	Strengthening delivering and monitoring system and preparedness in disaster prone coastal area	DRDM, DSTE, PIA, PWD
12	GIS based mapping along the selected vulnerable coastal area of Puducherry	DRDM, DSTE, TCP, Agriculture
13	Development of Sustainable aquaculture	DSTE, Fisheries