



Government of
Puducherry

URBAN SHIFT TRANSFORMING CITIES FOR PEOPLE & PLANET



THEME – I

**PEOPLE CENTERED AND NATURE
POSITIVE PUBLIC SPACES**

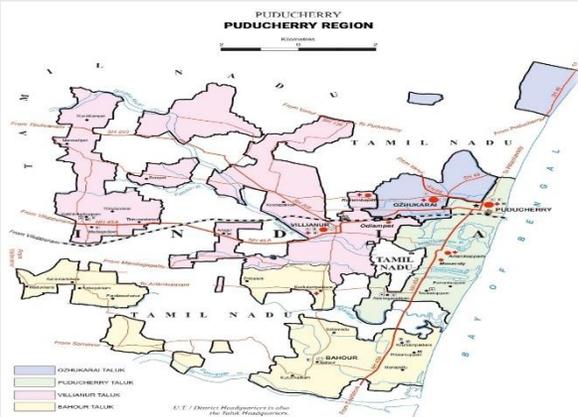
Dr. A. Muthamma, IAS
Commissioner-cum-Secretary to Government
Union Territory of Puducherry

Puducherry – a Snapshot



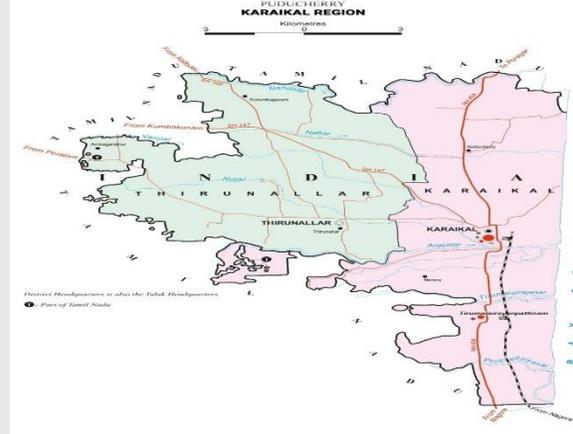
- Puducherry formerly known as Pondicherry, has a rich history (Ancient Roman trade Centre) and has a unique blend of French and Indian Culture and heritage - French Riviera of the East .
- Known for its well-planned town, vibrant beaches, extensive mangrove plantation and a diverse coastal landscape.
- Spiritual and Artistic Hub-spiritual sites like Sri Aurobindo Ashram, Auroville , Temples and Churches

Puducherry – Geographical Overview



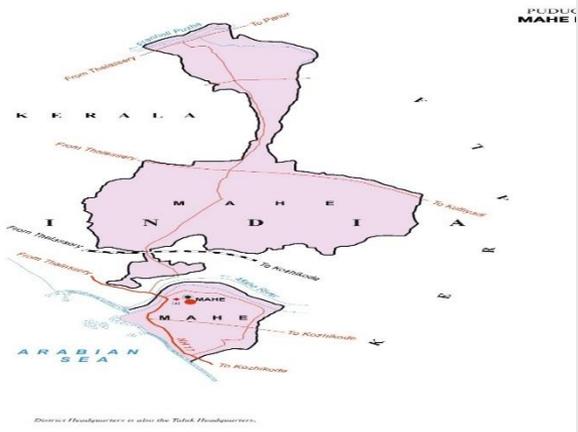
Puducherry

Puducherry – the largest region of Union Territory lies on the East Coast with 12 scattered territorial areas interspersed within jurisdictional territories of Villupuram and Cuddalore districts of Tamil Nadu. **(294 sq. km)**



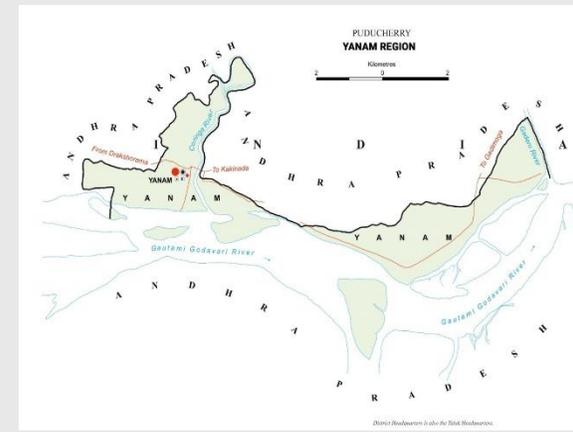
Karaikal

Karaikal region – is situated on the East Coast and is 135 kms. south of Puducherry. It is surrounded by the Nagapattinam and Mayiladuthurai districts of Tamil Nadu. **(157 sq. km)**



Mahe

Mahe Region – is situated on the West Coast and is 653 km away from Puducherry. It is surrounded by Kannur and Kozhikode districts of Kerala. **(9 sq.km)**



Yanam

Yanam Region – is situated on the East Coast and is 840 kms away from Puducherry surrounded by Kakinada District & Dr. B.R, Ambedkar Konaseema Districts of Andhra Pradesh. **(30 sq. km)**

Total Area : 490 sq. km

2 Districts and 2 Enclaves

Puducherry - City of Culture

Manakula Vinayagar Temple



- Popular pilgrimage site and tourist destination and predates French occupation of the territory

Basilica Church



Consecrated in the year **1895** with rich blend of French and Indian architecture and is one of the most beautiful churches in India.

Auroville- An experimental Township



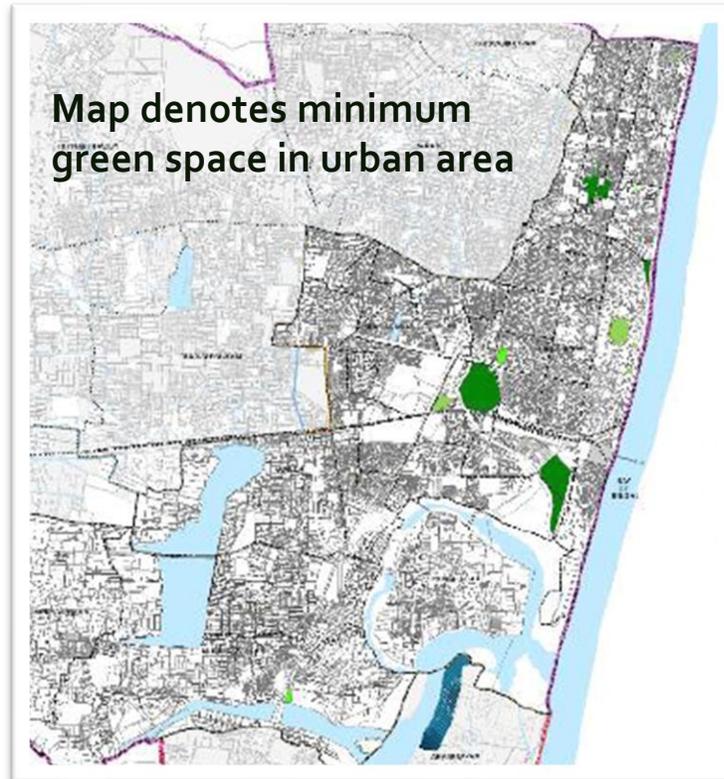
Unique architectural experimentation and integration with nature, showcasing sustainable and eco-friendly designs invites international tourists.

Sri Aurobindo Ashram



Spiritual community founded by Sri Aurobindo in **1910** is an spiritual center focused on Integral Yoga.

Importance of Public Spaces in Highly Dense Municipal Areas



Hence Green Lung City Planning with Nature-based Solutions leads to sustainable urban development and provides multiple ecosystem services in a highly urbanised area.



In Puducherry, 70% population lives in 26% of urban area (2011 Census).



Puducherry urban area spreads to an extent of 70.10 sq.km, of which public space area (*Recreation & water bodies*) is 3.91 sq. km.



A hectare of mature vegetation produces oxygen to support 10 to 30 people.



Rapid Urbanisation and decreasing open and green spaces negatively impacts oxygen availability



As per Urban Regional Development Plans Formulation and Implementation Plan (URDPFI) Guidelines, - 0.4 to 0.9 Ha Per 1000 persons required for positive bio diversity in urban area, but Puducherry Urban area has only 0.003 Ha per 1000 persons.

Intent to improve the large chunk of urban lung spcae

Improvement to Botanical Garden and Eco Tourism within the Urban Forest area – Rs.15 Crores.



- **Botanical Garden** developed in **1826** as an elegant French Garden covering 11 hectares including urban forest area with over 1500 species of plants, including exotic and medicinal varieties.
- Key species includes trees like Mahogany, Palm, Rosewood, Cork, Eucalyptus along with flowering/aquatic plants, bamboos and fossil park with cycads.
- Proposed to conserve this eco-system as Smart Sustainable People Centered and Positive Public Space under Puducherry Smart City .



Intent to improve the large chunk of urban lung space

Improvement to Botanical Garden and Eco Tourism within the Urban Forest area – Rs.15 Crores.

- A man-made **Urban Forest** with untouched vegetation for the past 100 years with various species inside.
- Urban Forests are crucial for improving the quality of life in cities thereby playing vital role of in mitigating the effects of local air and water pollution and provides recreational / trekking experience.
- Proposed to rejuvenate the urban forest under Smart City project.



Urban Forest entrance



Urban Green Lushes inside forest



Bamboo Arch entrance inside forest

Sustainable Initiatives:

1. Protection of various species of flora and fauna.
2. Enhanced Tourism experience with amenities.
3. Smart security features
4. Water and Energy conservation measures
5. Sustainable Waste management Practises

Impact of both botanical garden and Urban forest

- ✓ Botanical garden and Urban forests stand as bastions of sustainability
- ✓ Promoting a balanced ecosystem amidst our bustling city lives.
- ✓ Supports biodiversity and bolsters our quality of life
- ✓ Space created for the people

Development of nature positive public spaces

Pillayarkulam Pond



2011 Summer

Dried
water
body



2011 Winter

Completely
covered with
vegetation



2018

Sewage being let
into the pond from
the nearby areas

Geographical location

- Located near 1.5 km from Puducherry Airport.
- Area : 4000 sq. metre.
- Only waterbody in the urban area covering 10-12 sq.km.
- Situated in a highly dense urban area.
- Inaccessible to public for utilization.

Status of Pond before rejuvenation

- Dumped with Solid Waste.
- No recharge of ground water.
- Draining of storm water into the sea.
- Illegal sewerage connections from the nearby households .

Rejuvenation of Pillaiyarkulam Pond at Rs.1 crore



Construction of Catch pit across roads & conveyance of rain water to the pond.



Collection of roof top rain water from the adjacent buildings to the pond.



Conveyance of rain water through UG RCC pipe line



Full catchment of rain water after rejuvenation

Impact of the Project

- Value addition to the city's green and natural landscape
- Improves ground water recharge
- Reduces urban heat island effect
- Recreational space to the public and people adopting healthier lifestyle



Revitalization of 75 ponds.

Few Completed projects



**Parapan Kulam
Veerampattinam**



**Narayan Kulam
Mangalam GP**



**Nallan Kulam
Kodathur**



**Pura Kulam
LR Palayam Village**

1

Identified pond area of minimum 1 acre with water holding capacity of 10,000 cubic meters for rejuvenation

2

152 ponds under Amrit Sarovars Project was completed to de-stress the water table by recharging the ground water

3

14,000 tree saplings viz., Neem, Banyan, Peepal planted to arrest the soil erosion and retain the water in catchment area.

Impact of the project

Water table increased by 2 to 3 meters

Every Amritsarovar site is being used as community hub for national festivals like Republic Day and Independence Day.

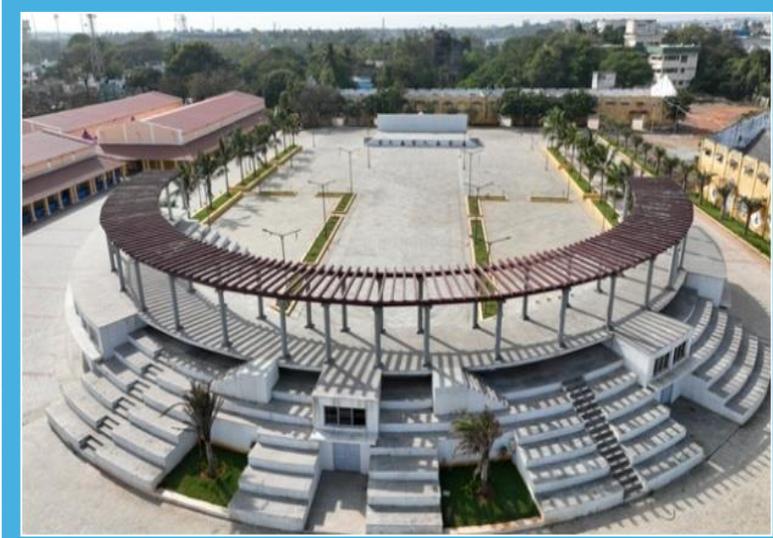
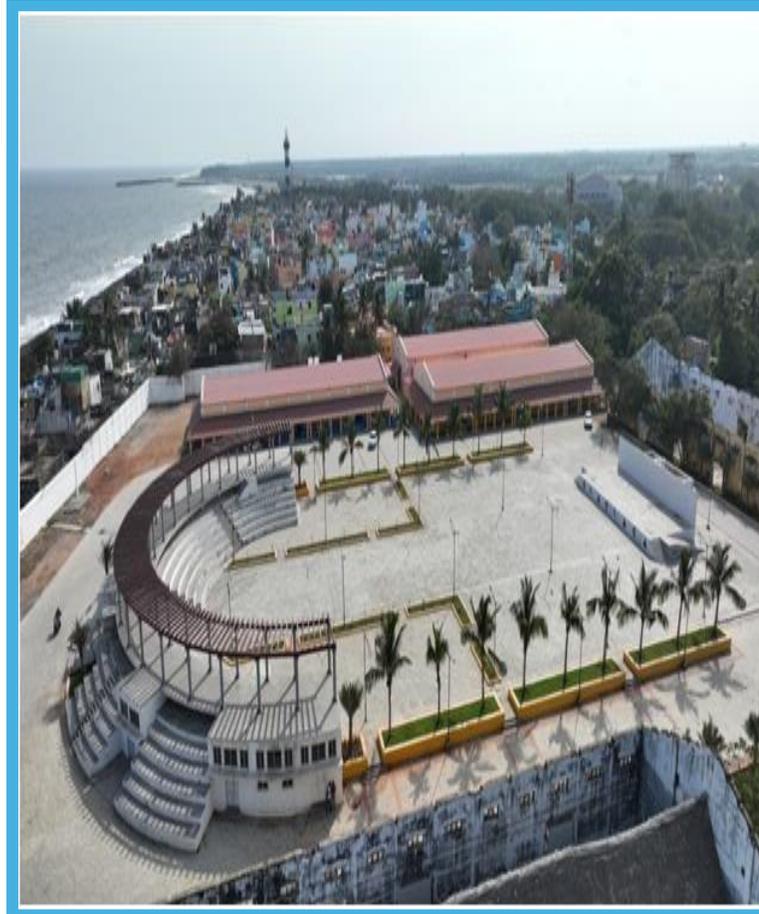
Revitalization of Old Port to Urban Entertainment Center

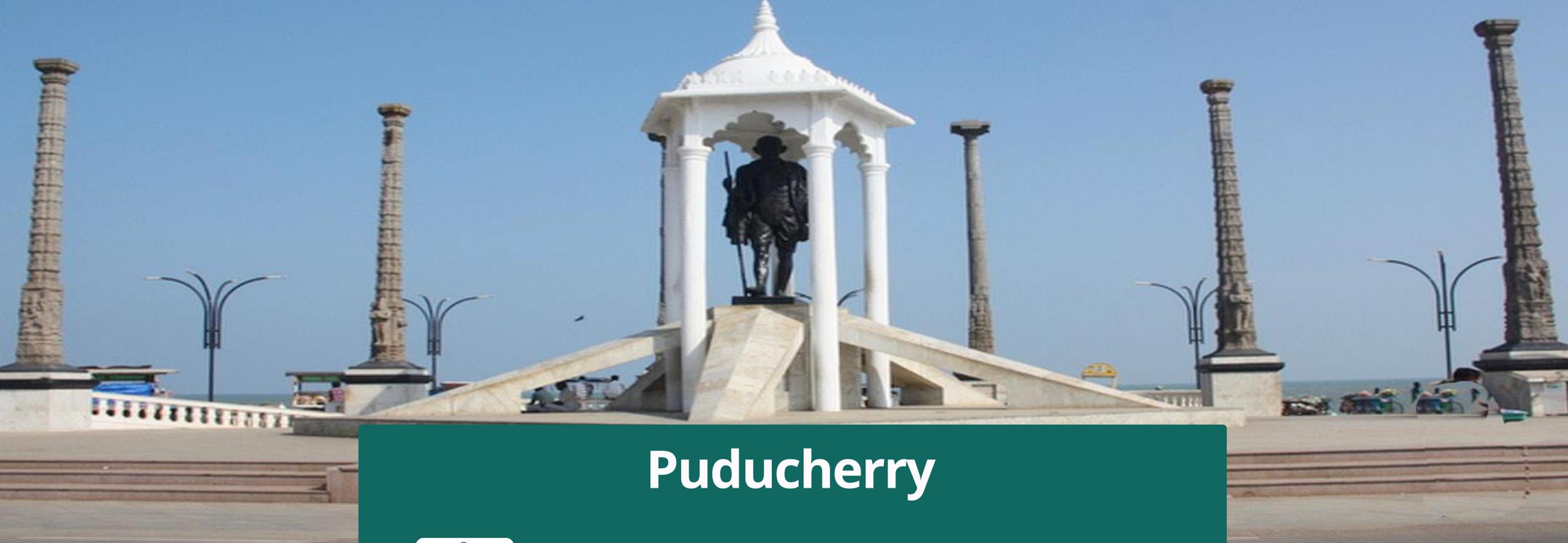
Aimed to transform the Old Port complex into a vibrant Cultural Hub while preserving its heritage along with provision of modern recreational facilities.

Design Components towards conversion to people centric public spaces; Covers 10-acre site, Concept towards integrating open spaces with contemporary infrastructure to enhance community engagement and to give an impetus to Tourism.

Impact of the Project

- Revitalized the Old Port area into a dynamic urban space, blending heritage with contemporary public amenities.
- It has become a landmark venue for hosting major Cultural and commercial events that contributes to Puducherry's identity as a cultural and tourist hub . Facilitates for multifunctional venue for positive public gathering.





Puducherry



Doubling Green Cover.



DOUBLING GREEN COVER



- ❑ Puducherry is a dense urban agglomeration and does not have any natural forest.
- ❑ The recorded forest cover in the UT is 52.14 sq. km. which is 10.70% of UT's geographical area (Forest Survey of India – 2019.).
- ❑ Urban areas of the UT have silvicultural mature trees.
- ❑ Doubling the green cover in the UT has been undertaken to mitigate the effects of pollution, to reduce the urban heat island effect and to achieve carbon neutrality.

Following activities are undertaken to double the green cover of Puducherry.

1. Tree saplings of theologically important trees / plants distributed free of cost to all Religious Institutions like temples, churches etc.,

- 48 different tree species linked to 9 Grahas (Planets), 12 Rashis (Signs), and 27 Nakshatras (Constellations) and considered auspicious identified for plantation.
- Belief systems harnessed for Urban greening activity – (Navgraha-van, Rashi-van and Nakshatra-van).
- 4,80,000 saplings raised so far.



2. GREENING THE URBAN AREA WITH 3:33:333 PATTERN IN ALL AVAILABLE SPACES



To improve urban environment and promote climate resilience (Air, Water, illumination & Noise Pollution)

- Location specific tree species of environmental protection, conservation and aesthetic value such as Neem, Teak, Bamboo, and Seasonal Flowering Plants planted along road sides, rail tracks, waterbodies, riverine and canal bunds, institutional premises and airport.
- 30,000 saplings planted for greening urban sprawls.

3:33:333 Greening Pattern

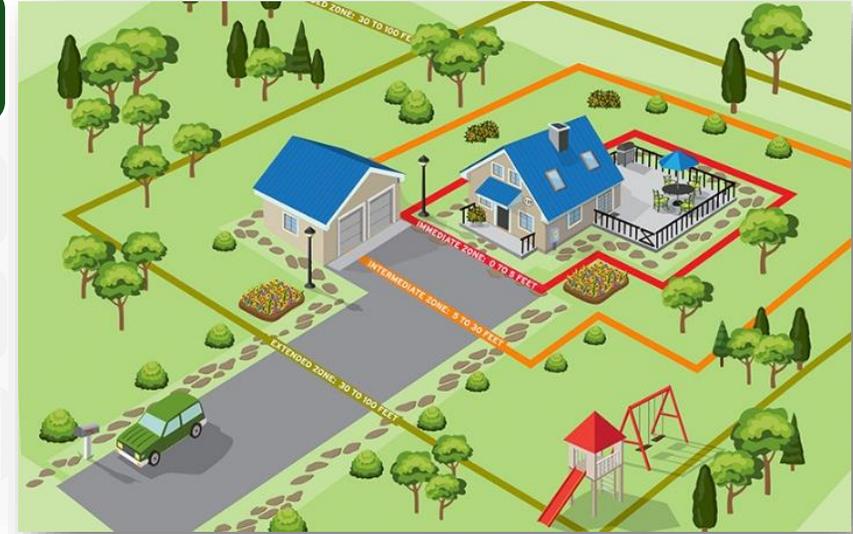
01 3 Trees around every house



02 33 Trees in each street



03 333 Trees in 100-meter radius of every point



3. ESTABLISHED SHELTERBELT COASTAL PLANTATION ALONGWITH CREATION OF MICRO WATER SHEDS

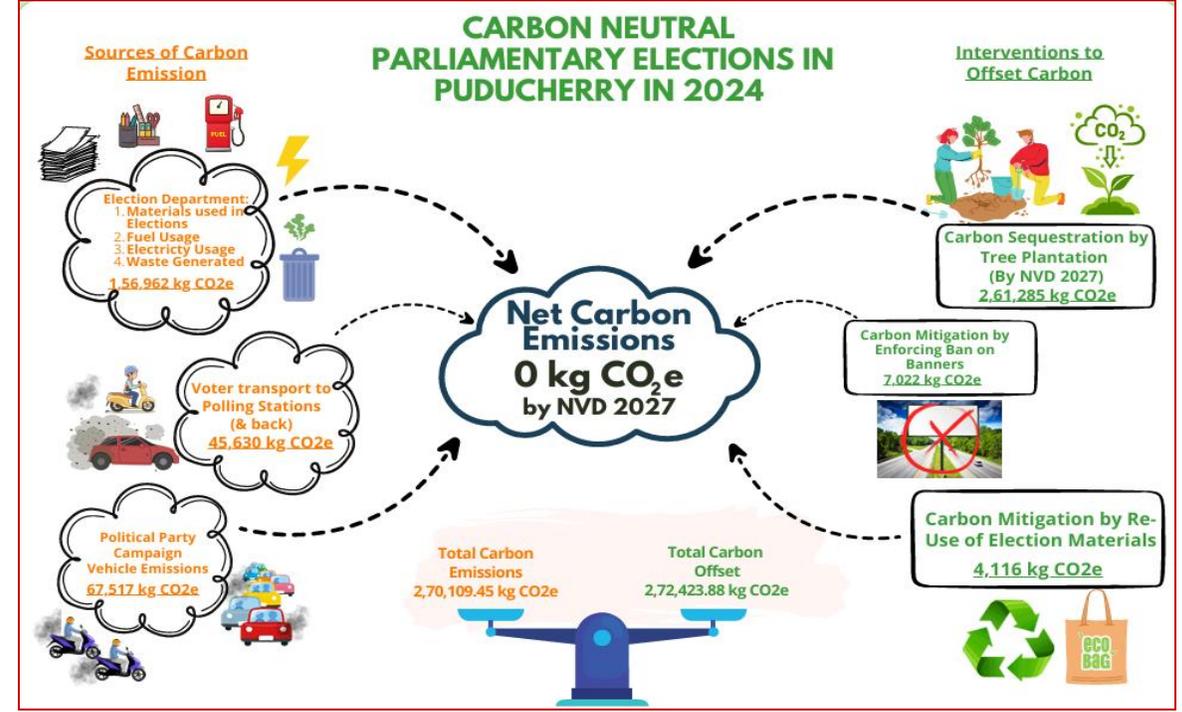


1. Salt hardy tree saplings (Palm tree seeds, casuarina, bamboo and other shrubs etc.,) are planted closely along with mulch (of coir pith and other local green leaf manures) with the help of local community like SHGs, MNREGA workers, Local Volunteers etc.,
2. Around 1,10,000 tree saplings planted to prevent saline waste intrusion and reduce wind velocity under the programme called 'AMMA VAN'.

- ❑ Micro watersheds are created through bio-mechanical ways i.e., creation of series of earthen bunds along with bund tree plantation.
- ❑ These structures created along the coasts recharge the temporary aquifers and reduce salinity. They act as rainwater harvesting structures and tree plantation on the bunds reduces wind velocity above-ground.



4. EK PED MAA KE NAAM (A plant in the name of the mother) AND COUNT THE CARBON INITIATIVE



- About 1,26,000 Tree saplings planted in co-ordination with SHGs, community volunteers, students, NGOs, etc.,
- Multi storied plantation adopted to ensure circulation of nutrients among different species of plants and trees.
- Success ratio above 85%.

- Carbon foot print for the process of conduct of Elections (Lok Sabha 2024) was quantified.
- To neutralize the carbon footprint, circular economy concepts like waste reduction, walk to vote, tree plantation etc., was carried out.
- One of its kind activity in the country, recognized by ECI.

DOUBLING THE GREEN COVER



Outcomes

- ❑ Community involvement in management of natural resources.
- ❑ Right Plant at Right Place for Right Purpose to abate pollution.
- ❑ Carbon foot print quantification leading to carbon neutrality.

Challenges

- ❑ Coordination and Convergence with different departments.
- ❑ Investment on modern tools like Drones, AI monitoring tools.
- ❑ Skilled man power and funding.
- ❑ Data collection and management.

Way forward

- ❑ AI based nature interpretation centre is planned with GoI support for information on conservation and preservation of environment, especially for the youth.
- ❑ Extending carbon quantification to other projects and processes.
- ❑ Promotion and use of AI driven, Geo spatial technologies for survey, data gathering, monitoring and quality management of natural resources.
- ❑ Road side, River side, Rail side vertical greening projects.



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Sustainability is no longer about doing less harm. It's about doing more good.

~ Jochen Zeitz



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Thank you

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