



# Cultivating Resilience through Urban Gardening | A Re-imagined LT-LED

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# Chennai's Resilience Strategy

- CRC launched the city's first Resilience Strategy in 2019 in collaboration with Greater Chennai Corporation.
- **Aim:** to promote resilience in individuals, communities and institutions to address the challenges posed by rapid urbanization and climate change in Chennai.
- **Approach:** Developed based on the City Resilience Framework which introduced shocks and stresses & seven pillars of resilience



City Resilience Framework (Arup 2014)



# RESILIENT CHENNAI

## ONE VISION

To make Chennai

*Enlightened. Just. Integrated.*



# Chennai Urban Farming Initiative (CUFI)



*Goal: To build resilience to climate change, specifically increasing heat, and create healthy, self-reliant communities by improving food security & livelihoods, especially among the urban poor in the city.*

## Implement using the organic Mobile Vegetable Garden Kit (MVGK)

- Modular, space efficient, scalable
- Contains potting mix, vermicompost, greens and veg seeds grow bags, bio-pesticide



## Train, set up and maintain

- Train project beneficiaries to set up and maintain
- Provision of maintenance support as required

## Create green livelihoods & nudge residents

- Up skill women from SHGs registered with TNULM to work as Madras Malis.
- Connect Madras Malis to residents who require garden support through social media campaign.



## Monitor, Evaluate & Incentivize

- Monitor parameters like yield, heat, psycho-social impact, innovation etc. through surveys, FGDs, visits.
- Incentivize & encourage through friendly competitions to ensure long term sustainability.

# Chennai Urban Farming Initiative (CUFI)

## IMPACT 2025



144 Integrated  
Child Development  
Services Centres



10 Schools  
including Govt.  
schools



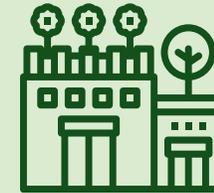
2 Resident  
Welfare  
Associations



Rs 2,19,650  
earned by 10  
women Malis



4082 children,  
teachers, staff  
benefiting from the  
gardens



4 edible roof gardens providing cooling  
benefits of 1 to 2°C on an avg in the  
rooms below



# Benefits

The whole is greater than the sum of its parts!



*Increases access to fresh & nutritious food in Anganwadis & schools*



*Serves as educational tool*



*Improves mental health and well-being*



*Fosters community cohesion*



*Empowers women by offering green-livelihoods*



*Encourages pro-environmental behaviour*



*Creates greener and cooler roofs*

# Measuring Heat Adaptation Potential of Edible Rooftop Gardens

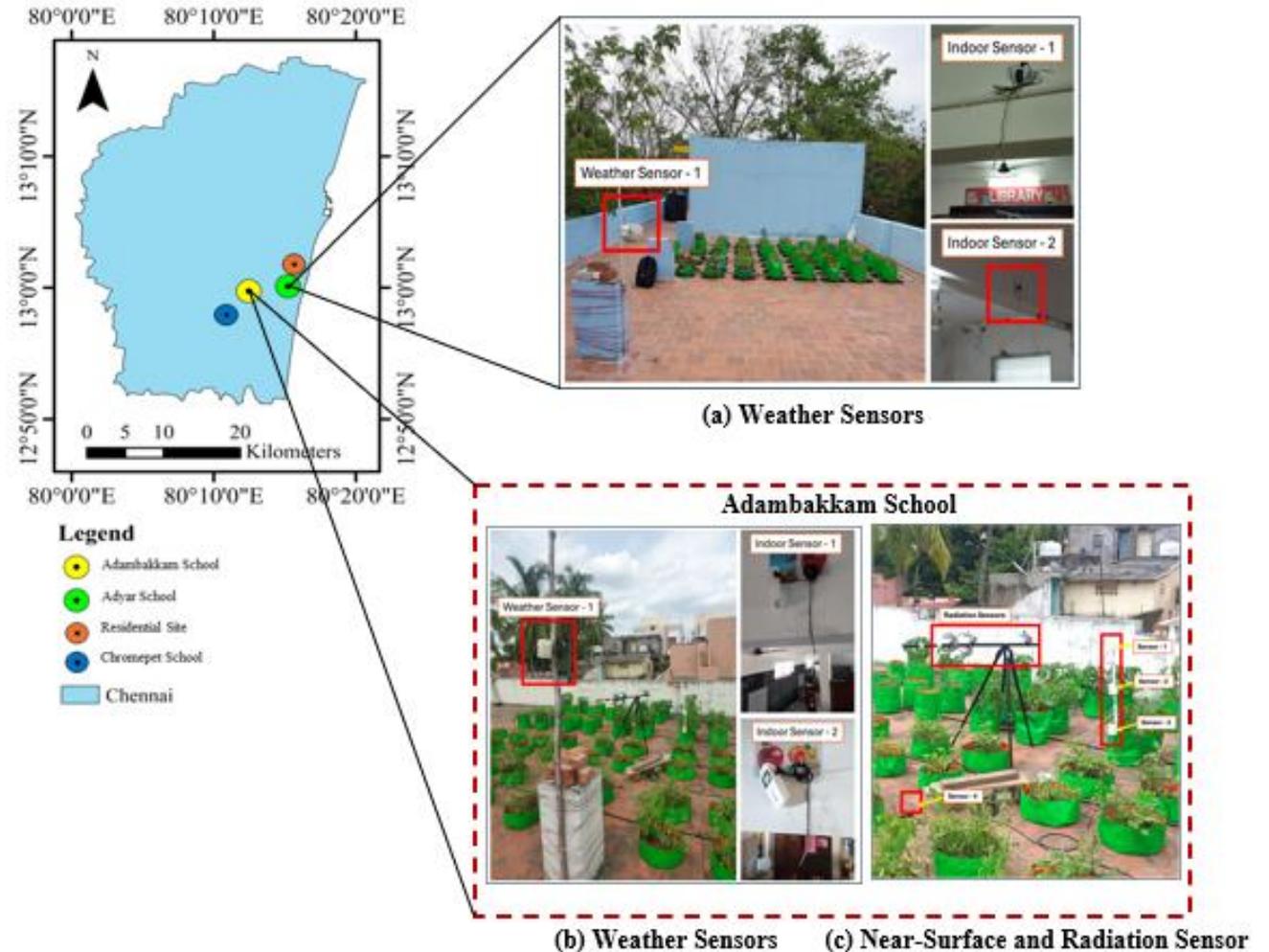
## Methodology

### Sensors deployed

- **Weather Sensors** on the roof space with garden, roofspace without garden, room below the garden and room below exposed surface.
- **Near surface & radiation sensors** – an experiment in one site, Adambakkam: Sensors installed on roof surfaces with and without the garden and ceiling of rooms below the garden and exposed surface.

### Parameters Measured

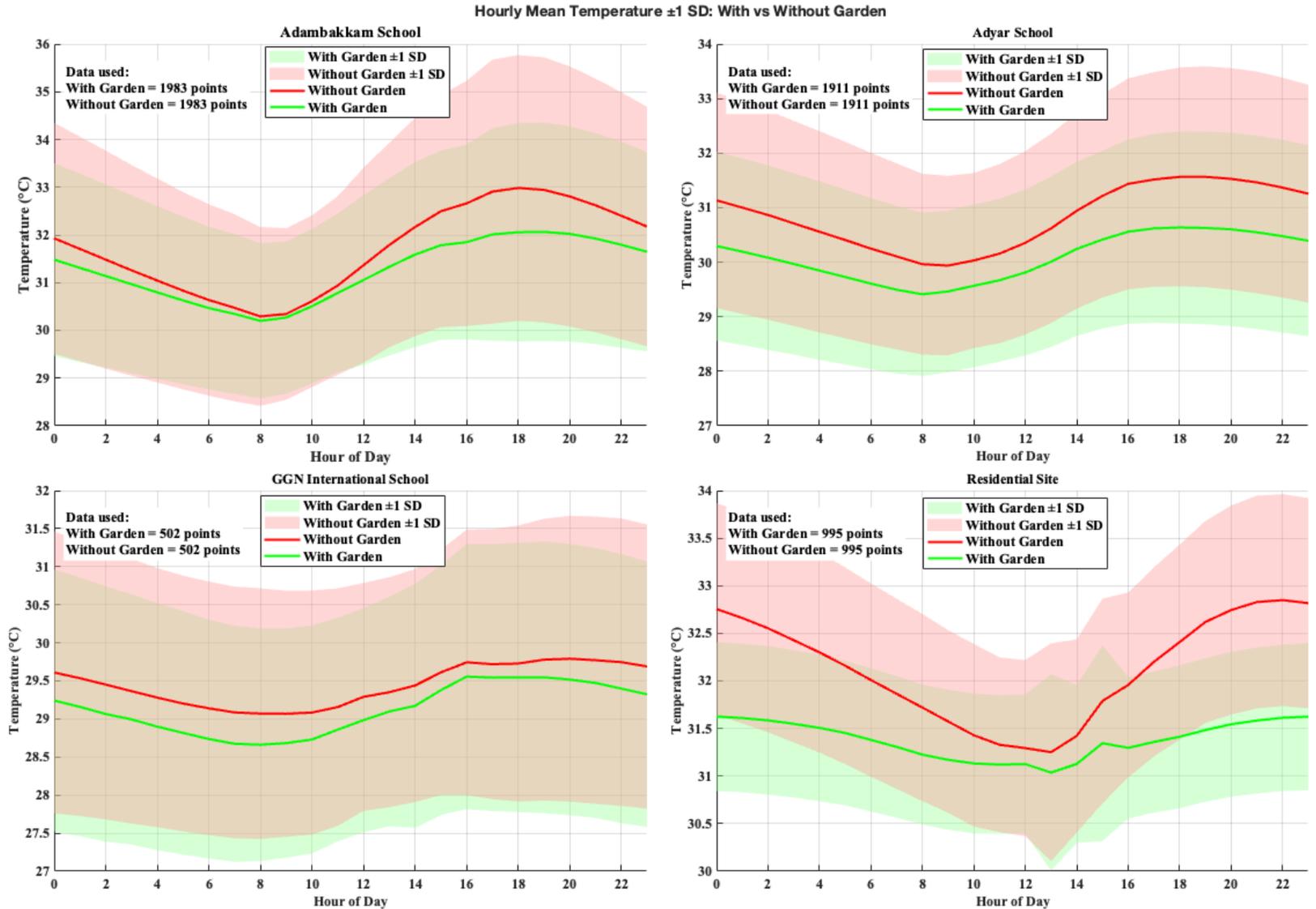
- Ambient Air Temperature
- Relative Humidity
- Surface Temperatures



Two study sites zoomed in: GCC school in Adyar (top); Little Flower Nursery and Primary School, Adambakkam (bottom)

# Key Findings

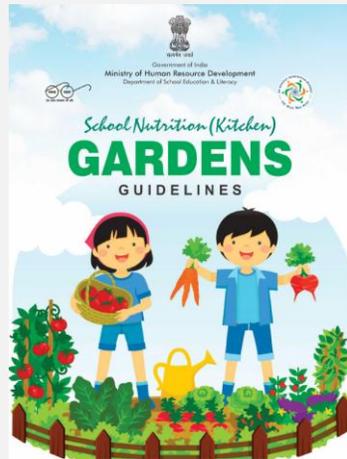
- Rooms below the garden are on an average 1 - 2° cooler than rooms below a bare-exposed surface in all four sites.
- Cooling strongest from late afternoon to evening (16 to 20 h) and is least in the mornings (8h to 12 h).
- Variations in extent of cooling observed based on roof materials & area of roof left exposed.
- Surface and sub-surface temperatures of roof spaces with garden are consistently lower compared to corresponding bare roof surfaces.



# Mainstreaming CUFI: Relevant Policies/ Programs

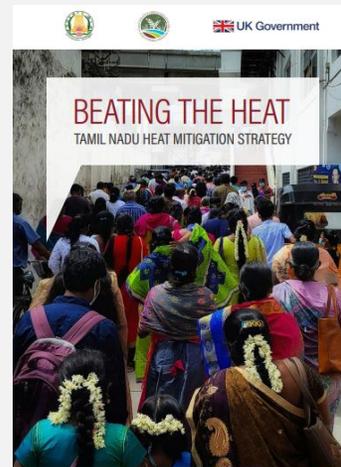
## Food/ Nutrition in Education Spaces

- Poshan Vatika
- National School Nutrition Gardens, 2019



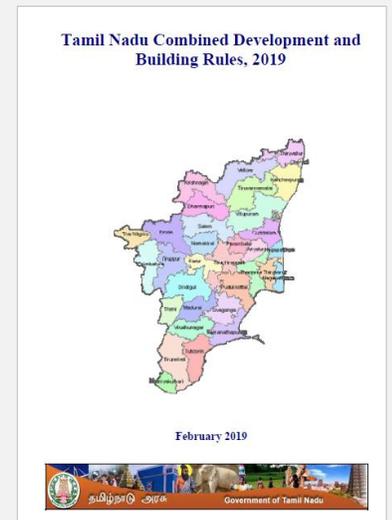
## Climate

- TN Heat Mitigation Strategy, 2023
- TN Green Schools Program, 2023
- Chennai Climate Action Plan, 2023



## Sustainable Buildings

- Green Building Codes – GRIHA, LEED, IGBC
- TN Combined Development Building Rules, 2019



# We Segregate

Goal: Improve waste segregation practices among residents of Kasturba Nagar

## Context

13% (~1.9 million tons of CO<sub>2</sub>e)

of GHG emissions in Chennai city comes from solid waste

> 93% of total GHG emissions

Comes from mixed total waste disposed at Perungudi and Kodungaiyur dumpsites

(GCC Climate Action Plan 2023)



## Components

- ▶ Composting wet waste through lane composters & selling harvest to residents
- ▶ Segregating soft plastics through punch-the-plastic hooks and sending it for recycling with support from Bisleri's Bottles for Change CSR initiative
- ▶ Creating awareness through sustained campaign including door-to-door interactions to increase segregation rates
- ▶ Implementing We Segregate Stewardship Program to take the Kasturba Nagar model to other communities



CHENNAI  
RESILIENCE  
CENTRE

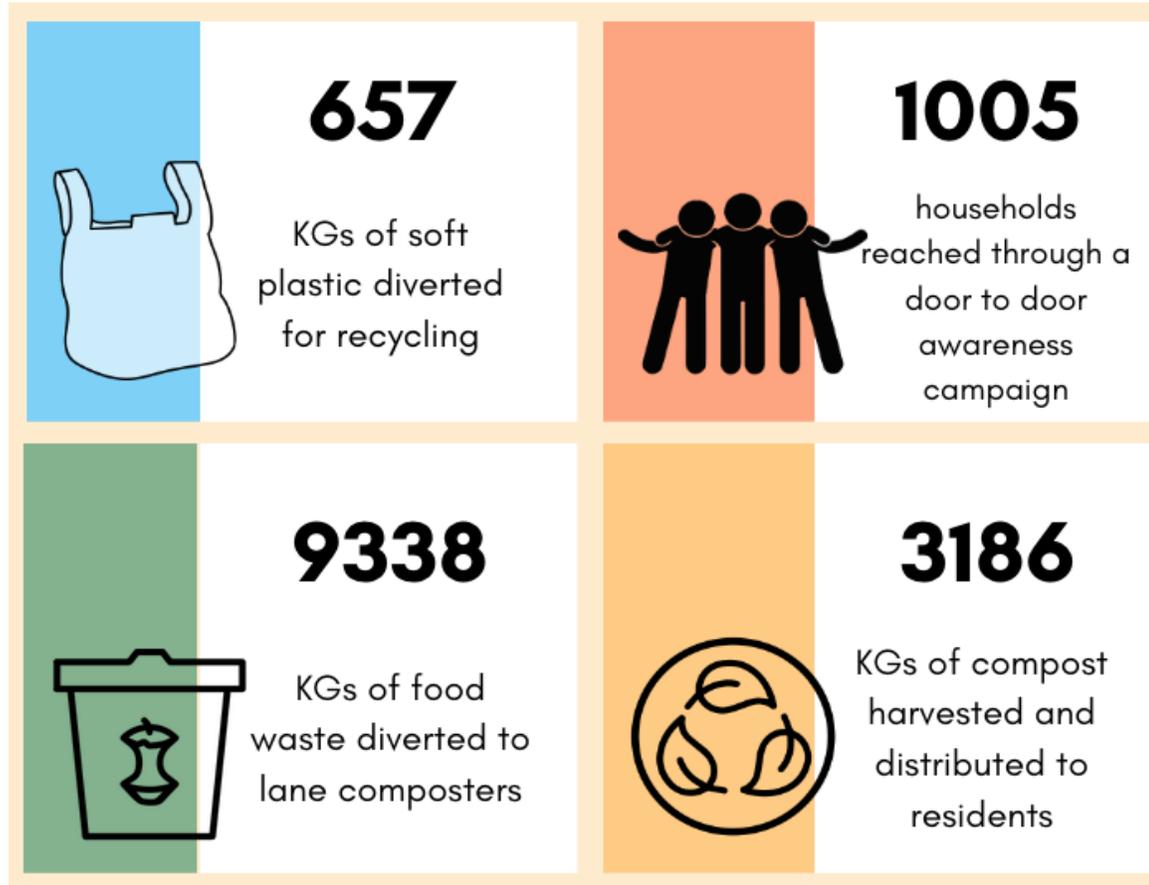


# We Segregate

## IMPACT

OCT '23 – NOV '25

Segregation in  
Kasturba Nagar has  
increased from  
35% → 65%



*We Segregate selected as one of top 75  
LiFE Global Call for Ideas and Papers!*



# Thank you!

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