

# The Future of Food Security and Livelihoods for the Urban Poor



CHENNAI  
RESILIENCE  
CENTRE



Adrienne **Arsht-**  
**Rockefeller** Foundation  
Resilience Center



**CARE EARTH TRUST**  
Biodiversity People Conservation



# Who we are

- **Chennai Resilience Centre (CRC)** is a unit of **Care Earth Trust** fostered by the **Adrienne Arsht – Rockefeller Foundation Resilience Centre (AARFRC)** and the **Resilient Cities Network (RCN)**.
- **Aim:** to promote resilience in individuals, communities and institutions to address the challenges posed by rapid urbanization and climate change in Chennai.
- CRC launched the city's first **resilience strategy in 2019** in collaboration with **Greater Chennai Corporation**.



[www.resilientchennai.com/strategy](http://www.resilientchennai.com/strategy)

# Developing the Resilience Strategy

The Chennai Resilience Strategy was the result of a rigorous **stakeholder driven** process to define Chennai's **strengths and challenges** and identify **relevant interventions** to help build the city's Resilience.

It was developed for:

- **City leaders** to **collaborate** and **guide** their organisations to **respond** to key shocks, stresses and challenges over a 5-year horizon.
- **Citizens** to get **inspired** and take more **active ownership** of the city.



Workshops (clockwise from top): Metro Governance, Healthy & Planned Urbanisation, Civic Engagement, Water Systems, Informal Settlements

# RESILIENT CHENNAI

## ONE VISION

To make Chennai

*Enlightened. Just. Integrated.*



# Ongoing Projects



**Chennai Urban Farming Initiative**



**Water as Leverage**



**Understanding Disaster Vulnerability of Homeless**



**Lake Restoration Handbook**

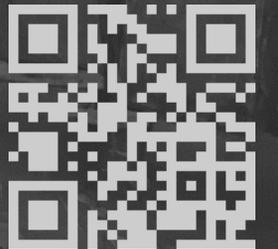


**Urban Ocean – addressing plastic leakage**

# Chennai's Urban Farming Initiative (CUFI)

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[www.urbanhottam.com](http://www.urbanhottam.com)



# Chennai Urban Farming Initiative: Through a Resilience Lens



# CUFI | Linkages to Food Security & Livelihood

## *Food Security*

- The NFHS – Round 5, 2019-20 highlights **increased rate of malnutrition** in India & suggests, **kitchen gardens are a reliable source of nutrient-rich vegetables and greens** by improving diet diversity.

## *Green Livelihoods - potential for a reliable source of income for the urban poor*

- **An existing labour pool:** Among **102** respondents to a survey conducted in Perumbakkam Resettlement Colony, **82%** stated that they are interested in gardening/ marketing / food processing skills development programmes. Women are looking for job opportunities at home or near home to allow them flexibility to take care of their families; several of them have prior farming experience.
- **Demand for urban gardeners:** A survey (**n=150**) of gardening enthusiasts in Chennai revealed: **60%** of respondents already engaged in growing edible/medicinal plants at home and many would appreciate skilled support.



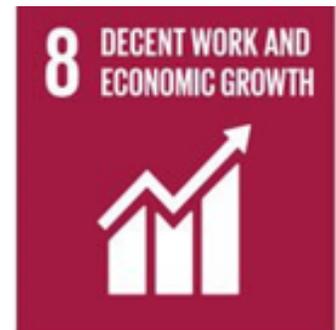
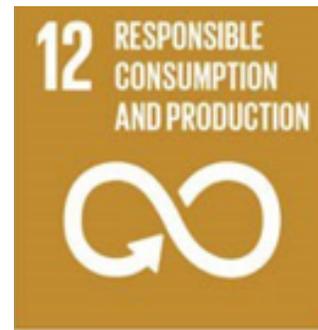
**Chennai Urban Farming Initiative:**  
*Linkages with National/State Programmes & Policies*



*The Chennai Urban Farming Initiative resonates strongly with the United Nations' Sustainable Development Goals.*



**THE GLOBAL GOALS**  
For Sustainable Development



# Chennai Urban Farming Initiative: A Flagship Project

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

## MISSIONS

### **Greener Schools**

School Kitchen Gardens will provide access to safe and nutritious food and build environmental awareness among children from vulnerable communities.

### **Greener & Cooler Cities**

*Patchaimadi Thottams* will take urban farming to city rooftops with the aim of cooling the city, managing rain/storm water better and increasing local food production.

### **Gift a Garden**

Fund raising and provision of mobile vegetable garden kits to vulnerable families in need.

### **Green Livelihoods**

*Makkal Thottams* aim at job creation for women and youth from low-income communities through community urban farms.



Urban Thottam

SUPPORTED BY



Adrienne **Arsht-**  
**Rockefeller** Foundation  
**Resilience Center**

# The Mobile Vegetable Garden Kit (MVGK) Programme



- **Supplying modular, portable, vegetable & greens garden kits** to ICDS centres, homeless shelters, low-income families.
- **Space efficient and mobile.** Crops selected for speed, ease and suitability to local environmental conditions.
- **Scalable** across govt. / govt. aided schools, Shelters for the Homeless, and Integrated Child Development Centers. Also feeds directly into the GoTN's mid day meal programme which mandates provision of a nutritious meal to all students.

## KIT COMPONENTS:

S.No	Items	Quantity
1	Grow bags	5 (3 for greens and 2 for vegetables)
2	Pot mixture	40 kg
3	Vermicompost	10 kg
4	Neem oil + soap mix	50 gm
5a	Seeds – Greens	5 varieties – Spleen Amaranthus, <i>Amaranthus campestris</i> , Purslane, Spinach, <i>Amaranthus blitum</i>
5b	Seeds – Vegetables	6 varieties - Tomato, Okra, Cowpea, Cluster Beans, Broad beans and Radish

## MVGK: Where we are today

Homeless Shelters	55 Homeless Shelters	1787 residents + 192 Staff
Integrated Child Development Centres	226 ICDS Centres	5,344 children + 480 staff
Low-income Neighbourhoods / Informal Settlements	3 Neighbourhoods (Chitra Nagar, Adyar, Ramapuram)	130 families
Schools	Little Flower Convent + 4 Govt. Aided Schools	1550 children + 113 teachers
Resettlement Colonies	Perumbakkam & Semmancheri	750 families

# The MVGK Ecosystem

- Chennai Resilience Centre (CRC) – Care Earth Trust (CET), supported by Adrienne-Arsht Rockefeller Foundation Resilience Center
- Information and Resource Centre for the Deprived Urban Communities (IRCUDC)
- Pudiyaador Trust
- Sempulam Sustainable Solutions Pvt. Ltd
- Integrated Child Development Scheme (ICDS)
- Greater Chennai Corporation's Shelter for Urban Homeless (SUH) Staff
- Earthonomic Engineers





## MVGK: Capacity Building



**Focused training** on benefits of kitchen gardening, how to set up gardens, pest management and general maintenance by experts from Sempulam Sustainable Solutions including:

- **Virtual training sessions** for beneficiaries that received MVGK kits;
- **On-site / in-person training** on kitchen gardening for shelter coordinators and ICDS Chennai staff.



**Short informational videos** being developed to share on WhatsApp groups and via YouTube.



**Motivational sessions** are being conducted by CRC for some centres and shelters based on request.

# MVGK Monitoring & Evaluation



**Surveys and FGDs:** Online Tamil Surveys and FGDs conducted to gather information on kitchen garden practices, challenges faced and impact of kitchen gardening on physical and mental health.



**WhatsApp Engagement:** WhatsApp groups created with beneficiaries to track progress and monitor participation on daily basis. Participants regularly post images of gardens and harvests, ask questions and advice.



**Visits & Rating:** Team visiting 3-4 centers / shelters every week to understand on-the-ground intricacies; build rapport with beneficiaries; document innovative practices. Centres / shelters are being rated based on criteria including current state of the gardens, interest shown by staff and problem-solving ability.



OBSERVATIONS

**Improves access to fresh, organic produce.**



## OBSERVATIONS

**Improves mental health of residents, especially children and residents with psychosocial issues.**



OBSERVATIONS

**Instils competitive spirit among children.**



## OBSERVATIONS

**Serves as an environmental educational tool for children.**



## OBSERVATIONS

**Scale of garden  
determines livelihood  
potential – larger  
gardens providing  
higher yields**



# MVGK: Operations & Maintenance

- Maintenance Kits provided to those Shelters and Centres that showed clear interest in wanting to continue the programme.
- Site visits and process of rating helping to provide solutions to challenges and to motivate through consistent exchange of information on new techniques and practices.



Maintenance Kit		
S.No.	Particulars	Quantity
1	Potting mixture	16 kg
2	Vermicompost	10 kg
3	Neem seed powder	1 kg
4	Seeds of vegetables and greens	1 set of 11 types
5	Panchagavyam	1L



# MVGK: Key Challenges



• Water shortage
• Attack of rats
• Vandalism/ Theft
• Weeding
• Time management
• Attack of pests/insects
• Poor quality soil
• Non availability of good seeds
• Lack of space
• Lack of staff to tend the garden
• Not enough funds to manage the kitchen garden
• Lack of knowledge
• Insufficient harvest
• Flooding



# MVGK: Next Steps

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# Next Steps | Model Farms



**Model Farms:** 4 farms (~1000sqft) are being set up to act as living labs to showcase potential of growing organic / healthy vegetables and greens across rooftops and vacant spaces.

Example of yield from a model farm:

- **Size:** ~ 1000 sq ft.
- **No. of plants:** 184 including 9 vegetables and 6 Keerai
- **Potential yield:** 79.4 kg of greens and vegetables from February to April 2022 and is continuing to supply produce.

# Next Steps | Model Farm at Perumbakkam



*A farm of (~1020sqft) has been set up in the first week of June in Perumbakkam resettlement colony, on land provided by Tamil Nadu Urban Habitat Development Board with the objective of growing organic greens, vegetables and fruits for local consumption. The garden has been set up in collaboration with IRCDUC and will also serve as an environmental education tool for local children.*

## Press Coverage

- The Hindu: <https://www.thehindu.com/news/national/tamil-nadu/an-organic-garden-comes-up-in-perumbakkam-resettlement-site/article65515504.ece>
- The New Indian Express: <https://www.newindianexpress.com/cities/chennai/2022/jun/10/resettlements-site-in-perumbakkam-sprouts-first-garden-of-hope-2463823.amp>



## Next Steps | Heat Mitigation



## Urban Heat Impact Analysis

Collaboration with **Earthonomics** to study Urban Heat Mitigation Effect Via **Flora Based Roof Insulation**.

**Anbagam Karunai Illam**, Purasaiwakkam, Chennai – 1000sq.ft. terrace garden - temperature & humidity of the roof top and rooms below are being estimated by placing 4 sensors across the test facility.

Real time data, local climate data, and calibrated simulation model data will be used to estimate heat mitigation benefits of terrace garden and to estimate the impact of roof gardens for similar sites.

**Initial observations** show that depending on the time of day, there is a 2 – 7 degree Celsius difference in temperature in room below the terrace garden compared to room below the open terrace space.

## Next Steps | TNCDW and RWAs



### *MoU with TNCDW*

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CRC has signed an **MoU** with the Tamil Nadu Corporation for the Development of Women (TNCDW) for:

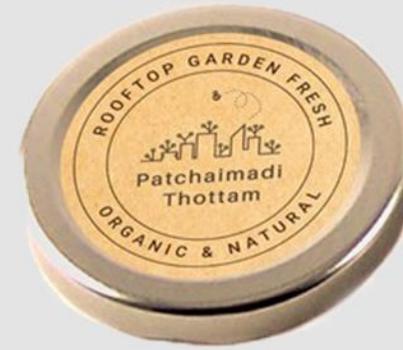
- Setting up **four Mobile Vegetable Rooftop Gardens** (using MVGKs) in two localities through RWAs
- Conducting **two capacity building sessions a month** for Women from Self Help Groups in the locality targeting **150 women** over 3 months.
- Linking women from SHGs registered with TNCDW to RWAs for maintenance support.
- Using [UrbanThottam.com](http://UrbanThottam.com) to link registered service providers to RWAs/ Women's Self-Help Groups.



## Plans & Aspirations

### CUFI | A Social Enterprise

- There is an opportunity to go beyond the community farms to leverage existing demand for locally grown, organic produce.
- By extending involvement of all stakeholders and the market, a brand can be built around the community farms focusing on developing a local, organic urban food system as a strategy for livelihood and income generation.
- Building a brand can help increase margins through value addition via processing, packaging and marketing through an organic retail network to form the backbone of a thriving social enterprise.



# Next Steps | Summary

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- **To develop model farms** of at least 1000 sq ft across the city to showcase the potential yield of such urban farms
- **To support only the ICDS centres and Govt Homeless Shelters** who have shown active interest in growing and nurturing their kitchen gardens.
- **To collaborate with the TN Horticulture department on the Tamil Nadu Corporation for Development of Women (TNCDW)** programme to encourage residents via their RWAs to set up rooftop vegetable gardens on their terraces and use this to generate livelihood opportunities for Women's SHGs in the locality.
- **To collaborate with the TN Horticulture department** to extend the Mobile Vegetable Garden Kit programme established within ICDS centres to all the other viable ICDS centres within Chennai City.
- **To extend the Mobile Vegetable Garden Kit programme** to 10 Govt aided schools within the city.
- **To bring about policy changes** to make Urban farming a viable proposition on under-utilised and un-utilised government land in the city - thereby offering the migrant labour from rural areas an opportunity to return to and earn livelihood through community gardens.



# Thank you.

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