

A STEP TOWARDS DECENTRALISED MUNICIPAL SOLID WASTE MANAGEMENT: A CASE STUDY OF COIMBATORE, TAMIL NADU

City Profile

Coimbatore (Kovai) is the second largest city in Tamil Nadu after Chennai, located at the foothills of Western Ghats along the banks of river Noyyal, a tributary of river Cauvery. Coimbatore is also popularly known as “The Manchester of South India” due to the presence of more than 30,000 small, medium and large scale industries and textile mills. The city also houses the country’s largest number of hosiery and poultry industries.

- Area: 257.04 sq. kms
- Total Number of Wards: 100
- Number of Zones: 5
- Population (Census 2011): Approximately 10 lakhs
- Floating Population: 15%
- Number of Households: 155201
- Number of Slums: 173
- Temperature: 18°C-35°C
- Average Rainfall: 200 mm-300 mm

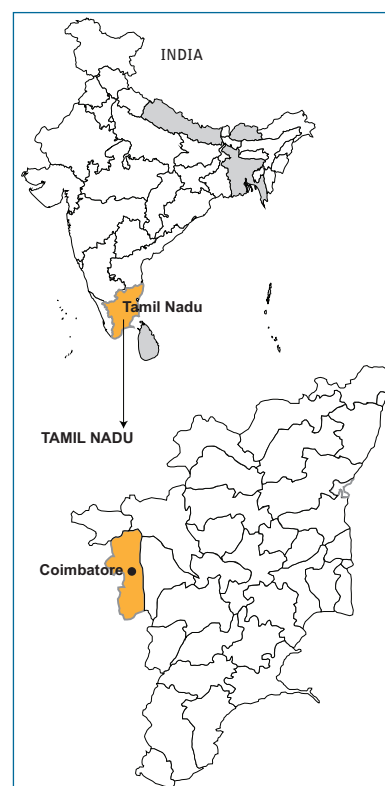
Coimbatore is also the headquarters of the Coimbatore district. Coimbatore City Municipal Corporation (CCMC) is the civic body responsible for provision of all the basic services including solid waste management to its citizens.

Rationale for Selection of this Pilot Project

With rapid urbanization and increasing population, there has been a marked shift in the quantity and quality of waste generated across the city, increasing the demand supply gap in provision of Municipal Solid Waste Management (MSWM) services of CCMC.

Presently, the city generates about 750 tonnes of Municipal Solid Waste (MSW) per day of which about 85% is biodegradable, and the rest is non degradable.

As per the CCMC, as much as 95% of the total waste generated by the city is collected. Usually mixed waste is collected and taken to the centralized composting plant located at Vellalore for processing. On days when the processing plant is shut for operation & maintenance or administrative issues, waste piles up threatening the environment and public health. Moreover, because of mixing of waste, a lot of valuable recyclables are lost.



Location of Coimbatore in
Tamil Nadu

Realizing the challenges faced by CCMC, the pilot project under “SUNYA- Towards Zero-Waste in South Asia” aimed to introduce the concept of decentralized waste management by promoting source-segregation, reuse, recycling and waste processing at ward level in Coimbatore. Ward No. 23 was selected as a pilot area to ensure that the programme is adopted by the community. This community predominantly consists of the educated class which belongs to the middle and higher strata of the society. It was envisaged that once the community adapts to the strategy, they can act as

‘torch-bearers’ and help replicate the process in other wards. The strategy adopted includes door-to-door collection of segregated waste, setting up of decentralized composting facility and small-scale sorting facilities for dry recyclables which are then sold to.

Objective

The objective of the pilot project was to successfully demonstrate a decentralized solid waste management system at the ward level. The main aims of the project included:

- To instill the importance of source segregation in the community and sanitary workers
- To provide 100% door to door collection of segregated waste at ward level
- To process organic waste at ward level through localized composting facility
- To promote generation of cleaner recyclables so as to provide an incentive to waste pickers to segregate and sell recyclables in order to supplement their income
- To avoid waste transportation costs and save landfill space by reducing waste going to landfills

Approach

The CCMC adopted a multi pronged approach to decentralise waste management at the ward level. The CCMC formulated a stakeholder group who guided the entire process of implementation of the pilot and actively supported the implementation of the pilot initiative. A strong IEC campaign helped to generate awareness among the citizens and encouraged them to segregate their waste at source. Segregated household level collection of MSW, separate collection of domestic hazardous waste, transportation to the local waste processing site, localised processing of biodegradable waste by the CCMC and sale of recyclables to identified recyclers ensured in completing the cycle of solid waste management within this ward.

Current Situation of Ward No. 23

- Number of Households: 2500
- Number of Commercial establishments: 750
- Number of Market: 1 vegetable market
- Number of Sanitary Workers: 83

Methodology

The CCMC approach to decentralise the waste management in ward number 23 included a strong IEC or soft component coupled with hard measures of procurement of vehicles to collect segregated waste, procurement of separate bins for collection of domestic hazardous waste and setting up of local composting

facilities and linking to established recycling facilities. The main activities include:

a. Stakeholder Group Formation

The CCMC set up a stakeholder group which helped guide the process of implementation of the pilot project. The group consisted of

Officials from Solid Waste Management Department, Coimbatore City Municipal Corporation (CCMC)	Residents Awareness Association of Coimbatore, (RAAC)
ITC, Coimbatore	Hotels Association, Coimbatore
Hand in Hand, Coimbatore	Siruthuli (NGO), Coimbatore
Shree Swastika Trust, Coimbatore	

b. IEC Campaign

CCMC involved NGOs like RAAC, Siruthuli and Shree Swastika Trust for conducting the IEC campaign to generate awareness among citizens towards source segregation, reuse and recycling through handbills, pamphlets, local discussions etc. The campaign adopted a very unique and active model of starting IEC activities early in the morning at 7.00 am when the waste is being collected from households and in presence of the ward councilor, zonal sanitary officer and other municipal staff to create a significant positive impact in a relatively short time. After considerable promotion of household segregation, CCMC subsequently also imposed fines on the households who failed to segregate waste; this served as a strong incentive for household segregation for those households who did not initially participate willingly.

c. Collection and Processing

- A 10 litre bin for biodegradable waste and a bag for recyclable waste have been distributed to each household in the ward.
- Compost bins have been distributed to 10 households to promote household composting
- Red coloured community bins have been placed for collection of domestic hazardous waste.
- 15 New push carts have been issued to sanitary workers with 4 bins for proper segregation
- A decentralized compost plant, organic waste converter (OWC) has been set up in the ward office for composting the wet waste collected from the ward. Pit composting is also practised in conjunction,
- Personal Protection Equipment (PPEs) have been distributed to conservancy workers

- ITC tied up with CCMC for collecting recyclables from Ward No. 23. The company has provided a separate bag to households for collection of recyclables. ITC collects recyclables from the ward office daily. ITC also pays the sanitary workers directly depending upon the amount of recyclables collected, thereby creating an alternative income for them. The Municipal Corporation is not involved in this transaction between sanitary workers and ITC, thereby ensuring transparency and avoiding other potential administrative road blocks.



Door to door collection of waste

Results/Outcomes

Infrastructural and Institutional

- Door-to-door collection of segregated waste from more than 2000 households and 750 commercial establishments has been initiated.
- 89 street bins have been removed from streets of this ward, without any negative impact on the cleanliness of the area.
- Till now 4.36 tonnes of biodegradable waste has been converted into compost in the composting facility. The compost has been tested and found suitable for use in gardens. Institutionalized collection of garden waste has been set up once a week on Wednesday
- CCMC has conducted training and distributed home composting pots to 10 households to promote household level composting.
- Strict penal provision against littering.



*Decentralized pit composting at Ward
Recyclables collected by ITC 23*

Economic

- Since October 2013, ITC has collected more than 167 tonnes of dry recyclables till date since the project began.
- A total of more than INR 5 lakhs have been raised by selling the collected recyclables. Each sanitary worker received his share according to the waste collected by them.
- Decentralized waste treatment has reduced consumption of diesel for transportation of waste saving about 3150 litres of diesel and INR 1.55 lakhs per month
- Fines amounting to INR 60,000 have been collected for littering.



Recyclables collected by ITC

Social

- The adoption of source segregation, reuse and recycling practices have been instilled in citizens who now take pride in living in a bin free ward
- Supplementary income is generated for waste pickers from sale of recyclables

Success Factors

Some of the key factors that ensured success of the project include:

- Extensive awareness generation and sensitization among citizens regarding source segregation and the 3R concept helped to make them more responsive. Stakeholder engagement was key to the success of the project.
- The Municipal Commissioner and local ward councilor acted as “local champions” who launched the initiative in Ward 23 and kept track of daily activities by visiting the pilot ward everyday
- Presence of local leaders encouraged the local community and CCMC officials.
- Capacity building and training went hand in hand with building trust and ownership within the community helped in making the initiative a success.

Lessons Learnt

The success of the project in Coimbatore highlighted the importance of active participation of each stakeholder. Sensitizing the community to adopt basic practices of segregating wet and dry waste at source requires a change in age old behaviour patterns and cultural practices. Changing behaviour requires time. At the same time, it is also important to build capacity and awareness among the conservancy workers. Continuous training and capacity building activities are required to keep the momentum going and achieving desired results.

Sustainability and Replication

The successful implementation of the decentralized municipal solid waste facility at the ward level has encouraged the CCMC to replicate the approach in all other wards in the West Zone. In fact, ITC has already started collecting recyclables from the entire West Zone. Positive impacts of the project were shared informally by waste workers and citizens who were impressed with the initiative, thereby generating public interest even without considerable effort from CCMC. Resident associations from other wards are already approaching the CCMC to be part of this initiative and become zero waste wards. The project has shown that success of the decentralized waste management depends significantly on community participation than on finances.

Project Partners



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About SUNYA

SUNYA - Towards Zero Waste in South Asia is a project supported by the European Commission conducted in the South Asian countries of India, Nepal, Bhutan, Bangladesh and Sri Lanka. The seven cities of Shimla, Coimbatore, Hetauda, Tansen, Phuentsholing, North Dhaka and Matala partnered in the project, which was led by Municipal Association of Nepal and technically supported by ICLEI South Asia, VVSG (Association of Flemish Cities and Municipalities, Belgium) and ARGE (Association of Waste Prevention, Austria). The project focused on introduction of principles of 3R for municipal solid waste management, promoting reduction, reuse and recycling of waste through community mobilization and involvement, and scalable pilot demonstrations of reduction of waste generation and sustainable management. For more information, please visit: <http://www.sunyaproject.org/>

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