

## INDIA, THIRUVANANTHAPURAM



POPULATION  
**1 million**  
(2024 estimates)

### Sustainable Decentralised Approach to Solid Waste Management

In 2011, Thiruvananthapuram, with a population of approximately 950,000, was generating around 250 tonnes of waste per day, with a significant 80% of it being organic material. At the time, the city's waste management system was struggling—only 20% of the waste was segregated and recovered, while the remaining 80% was dumped at the uncontrolled Vilappilsala disposal site. This unregulated dumping resulted in severe environmental degradation and health hazards for local communities. Mounting public protests over pollution and poor living conditions led to the closure of the site, forcing the city to rethink its waste management system and policies.

In response, Thiruvananthapuram introduced a more sustainable and socially inclusive solid waste management system under the banner "My Waste My Responsibility." The strategy marked a shift toward decentralization, with a focus on source-level waste segregation, formalized composting, and decentralized resource recovery. The proximity principle became key in waste management, reducing the need for long-distance transportation and encouraging community involvement.

The Thiruvananthapuram Municipal Corporation (TMC) collaborated with private agencies and self-help groups through a public-private partnership (PPP) model to implement door-to-door waste collection and treatment. These partnerships shared the financial burden of waste management with the TMC, ensuring greater efficiency and community participation. In addition, TMC offered a 50% subsidy to residential complexes and gated communities to install in-situ organic waste management systems, promoting localized composting and waste treatment. For non-recyclable materials like low-value plastics, the city established collection centers where residents could drop off their waste. To promote proper waste handling and segregation, extensive information, education, and communication (IEC) campaigns were rolled out. These initiatives played a crucial role in reshaping public attitudes toward waste management. As part of its broader waste reduction strategy, Thiruvananthapuram also introduced the Green Protocol, a set of guidelines aimed at preventing waste generation and encouraging sustainable practices across the city.



Source: Urban Update India



## IMPACTS TO ACHIEVE SDG 11.6.1

- Current MSW generation: 325 tonnes/day.
- Percentage of households covered by door-to-door collection: 10%; other households deposit their waste in nearby material collection facilities.
- Number of community bins: 65.
- Percentage of households segregating waste: 100%.
- Percentage of waste processed: 54%.
- Number of sanitation workers: 1,195.
- MSWM vehicle fleet: 39.
- 50% of households manage biodegradable waste at source using pipe, kitchen-bin and pot / bio composting or community-level facilities, while the other households engage with private operators for their waste management.
- 100 bulk generators and 4,000 households have set up biogas plants for in situ treatment of organic waste.
- Anti-Littering Enforcement Team (ALERT) operating 24/7 ensures that citizens do not litter public places or water bodies.
- The city has established an app which supports users in identifying the nearest waste management facility, stay up-to-date about clean-ups or receive collection reminders.



Source: National Institution for Transforming India



Source: Times of India

## FINANCIAL SUSTAINABILITY

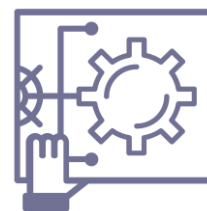
TMC has implemented a financially sustainable waste management model that balances long-term economic growth with minimal social and environmental impacts. The shared responsibility between the community and administration ensures efficient waste management, with initiatives like home and community composting for wet waste, which produces manure with market value. The involvement of private companies through public-private partnerships (PPP) has been key to maintaining this financial sustainability. Most waste management operations are handled by private agencies and the Kudumbashree self-help group, reducing direct costs for TMC. Additionally, only 10% of households rely on door-to-door collection, while the rest use nearby material collection centers, significantly cutting expenses for waste transportation and treatment. To further promote sustainable practices, TMC provides subsidies for on-site composting and biomethane facilities, keeping the system economically viable for the city and its residents.



## PLANNING & MONITORING

The Health and Sanitation Committee has performed timely monitoring activities, improving the systematic and professional functioning of waste collection and processing at ward levels. As the TMC has also introduced the Green protocol, in order to enforce compliance, authorities have imposed fines and penalties on violators of the regulations. Additionally, TMC launched a user-friendly app that provides information about nearest waste management facilities, city clean-ups, and collection schedules, making waste management more accessible and efficient for all.





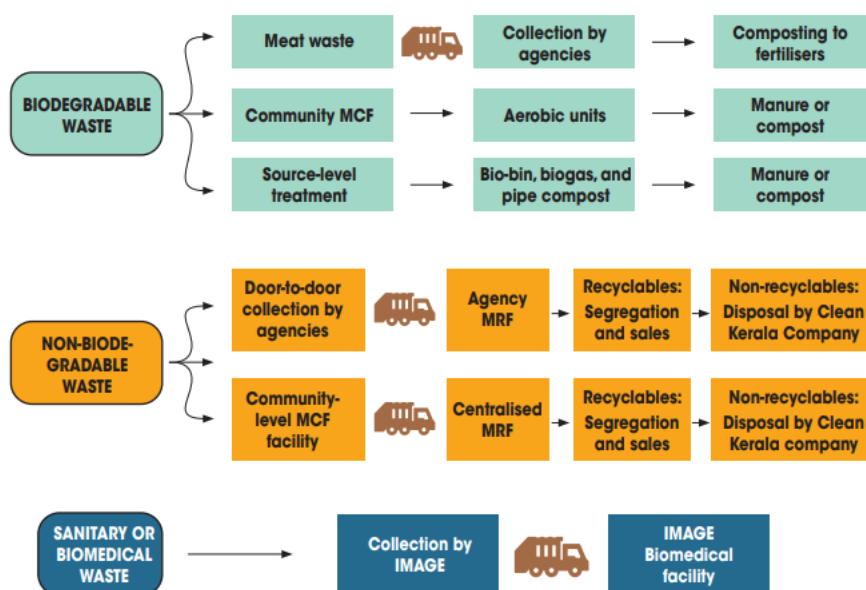
## APPROPRIATE TECHNOLOGY

- 25 zones and 100 wards, each ward having a Health Sanitation Committee.
- Ward – level waste collection, segregation and transportation is done by 22 private agencies, according to a fixed schedule, following a PPP model. Institutions and bulk-waste generators are responsible for their own waste management.
- Households either segregate their waste on their own and treat their organic waste on site (40%) or pay authorized service providers (private agencies) for handling and treating their waste.
- TMC has developed and implemented extensive information, education and communication (IEC) activities to actively engage the community members.
- The former disposal site has been rehabilitated into a park, to increase awareness about sustainable waste management.

Home composting done in containers



Source: National Institution for Transforming India



Waste Management Model and Collection Calendar

Month	Item collected
January	Footwear, bags and leather items
February	Glass bottles, mirrors, medicine strips, etc.
March	Rubber, tyres, etc.
April	Footwear, bag and leather items
May	Glass bottles, mirrors, etc.
June	E-waste
July	Footwear, bag and leather items
August	Glass bottles, mirrors, medicine strips, etc.
September	Clothes
October	Footwear, bag and leather items
November	Glass bottles, mirrors, etc.
December	E-waste

Source: National Institution for Transforming India

## STAKEHOLDER INVOLVEMENT



TMC has adopted an inclusive, community-driven approach to waste management by actively engaging a wide range of stakeholders. Private agencies and self-help groups are responsible for door-to-door waste collection and treatment, playing a crucial role in the city's waste management system. TMC also ensures that the broader community, including migrant workers and the general public, participates in sustainable waste practices. Through information, education, and communication (IEC) campaigns and capacity-building initiatives, TMC fosters community involvement, encouraging shared responsibility and empowering residents to contribute to effective waste management. This collaborative approach strengthens the city's efforts to maintain a clean and sustainable environment.



## SOURCES

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- Thiruvananthapuram – <https://trivandrum.nic.in/en/k-s-w-m-p/>
- Kerala Solid Waste Management project – <https://kswmp.org/>
- National Institution for Transforming India - <https://www.niti.gov.in/sites/default/files/2021-12/Waste-Wise-Cities.pdf>
- Centre for Development Studies – [https://cds.edu/wp-content/uploads/2021/02/Sanitation\\_Dileep-Kumar.pdf](https://cds.edu/wp-content/uploads/2021/02/Sanitation_Dileep-Kumar.pdf)
- India Census – <https://www.census2011.co.in/census/city/462-thiruvananthapuram.html>
- Down to Earth – <https://www.downtoearth.org.in/waste/ten-zero-waste-cities-how-thiruvananthapuram-cleaned-up-its-act-68539>
- Urban Update India – <http://urbanupdate.in/wb-officials-evaluate-swm-projects-in-kerala/>
- Times of India – <https://timesofindia.indiatimes.com/city/thiruvananthapuram/thiruvananthapuram-corporation-opens-segregated-dry-waste-collection-hub/articleshow/69727953.cms>



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