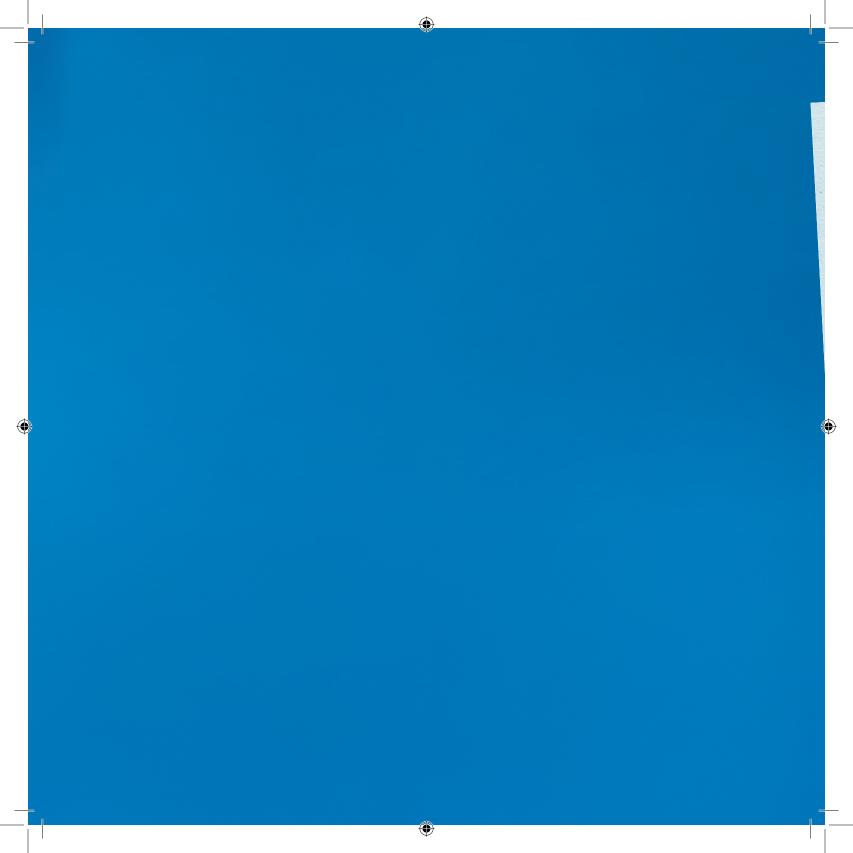


# CHANGE IS POSSIBLE

Urban solid waste management: Stories of transformation from India

THE CHANGEMAKERS' CONCLAVE DECEMBER 19, 2024, NEW DELHI





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Urban solid waste management: Stories of transformation from India



Writers: Aniket Chandra, Atin Biswas, Kaifee Jawed, Kuldeep Choudhary,

Minakshi Solanki, Mou Sengupta, Shrotik Bose, Siddharth G Singh and Tribhuwan Singh Bisht

Editor: Souparno Banerjee

Cover and design: Ajit Bajaj

**Graphics:** Tarun Sehgal, Vineet Tripathi

Layout: Kirpal Singh

**Production:** Rakesh Shrivastava and Gundhar Das

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41, Tughlakabad Institutional Area, New Delhi 110 062 Phone: 91-11-40616000, Fax: 91-11-29955879 E-mail: cse@cseindia.org, Website: www.cseindia.org



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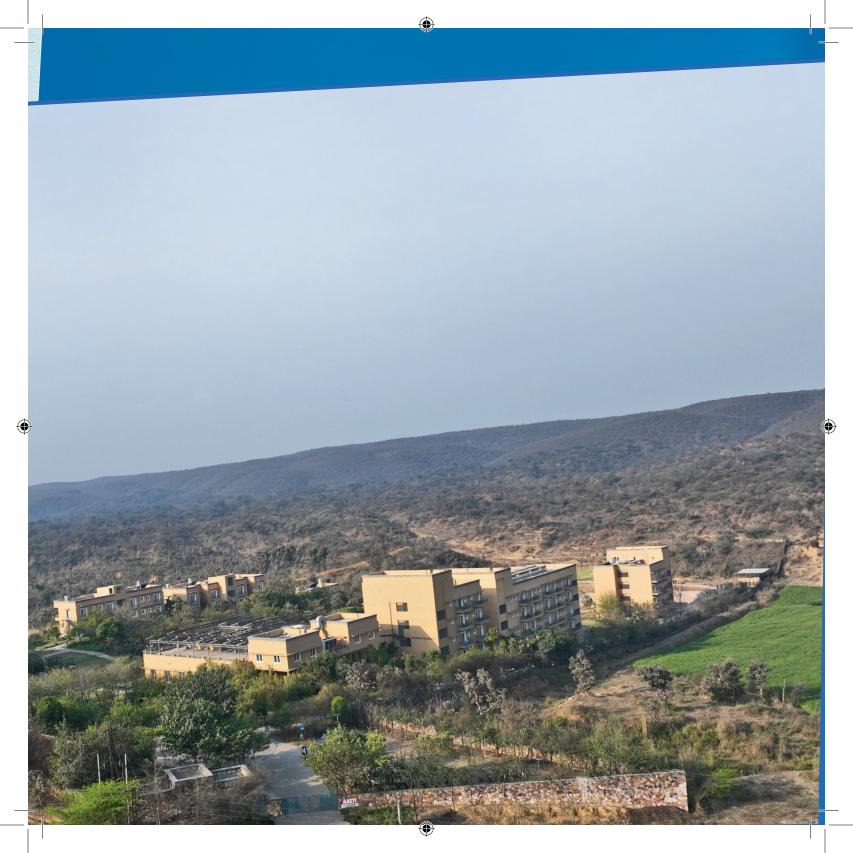
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#### ANIL AGARWAL ENVIRONMENT TRAINING INSTITUTE (AAETI)

Nestled in the foothills of ancient Aravallis near the town of Tijara in Rajasthan, the Anil Agarwal Environment Training Institute (AAETI) is unique in many ways. A Centre for Science and Environment initiative dedicated to the memory of CSE's founder-director, the late Anil Agarwal, AAETI is a conservatory of knowledge, as well as an incubation ground to test if that knowledge works. Offering short-term entry-level and advanced training programmes in a wide assortment of subjects and topics on environment and development, AAETI's sprawling and lush campus demonstrates 'sustainability in practice' at its best.

To know more about CSE, AAETI and our training courses, please visit www.cseindia.org.







The Swachh Bharat Mission (SBM) 2.0 is a visionary initiative with an ambitious goal of making India "garbage-free" by 2026. By placing a heavy emphasis on solid waste management, the Mission targets critical components like remediation of legacy waste, increasing treatment and processing capacities, and diverting 80 per cent of municipal solid waste from reaching landfills. With a financial commitment of over Rs 1.4 lakh crore and the introduction of performance-linked disbursals as an innovative financing mechanism, SBM 2.0 has opened significant opportunities for transforming waste management practices across India.

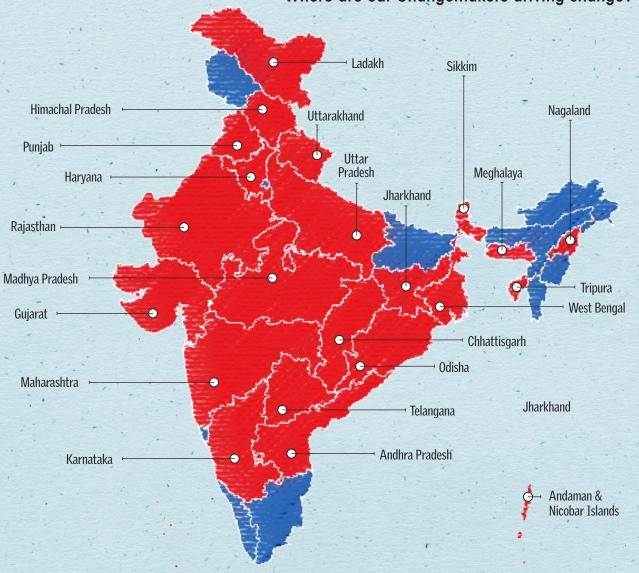
At the heart of this transformation lies the pivotal role of local governments, which are tasked with achieving defined milestones to access additional Central assistance. The success of this ambitious programme depends on strategic assessment, efficient planning and the implementation of systems that prioritise the diversion of recyclable and treatable waste from landfills. The scale of SBM 2.0 also creates avenues for partnerships and collaboration among private companies, research institutions, academia, civil society organisations, consultancy firms, start-ups, and other stakeholders. Together, these entities can foster an ecosystem that turns waste management into sustainable business models while addressing economic and environmental imperatives.

Recognising the challenges and opportunities within this Mission, the Solid Waste Management and Circular Economy



#### **Transformation Atlas**

Where are our Changemakers driving change?



team at Centre for Science and Environment (CSE) has developed a comprehensive residential training programme. This programme is specifically designed for government and non-government stakeholders involved in the solid waste management value chain. The training provides an end-to-end solution for designing and implementing robust systems that are aligned with the principles of circular economy. It focuses on real-world solutions, actionable strategies and practical knowledge, equipping participants with the ability to address the complexities of solid waste management effectively.

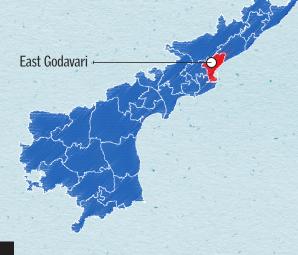
Through these training sessions, we in CSE have engaged with more than 500 urban local bodies (ULBs), policymakers, sanitation workers and community organisations. The discussions have offered deep insights into the challenges faced on the ground, including waste segregation, treatment, processing infrastructure, financial sustainability, and behavioral change among citizens. Our findings highlight that solutions must be tailored to local contexts, ensuring that innovative technologies, citizen engagement and resource optimisation can work in harmony to create cleaner, healthier urban spaces.

This book is a culmination of the knowledge, strategies, and practices developed by the local governments and their partners. It provides practical guidance to stakeholders looking to navigate the challenges of solid waste management while aligning with circular economy principles. It is a step toward building that vision and supporting the collective efforts required to make India truly garbage-free.

The CSE Team

# SECTION I THE CITIES





# The capacity building support from CSE has helped the city gain deeper understanding of the areas that could be improved, and provided guidance on overhauling its systems for managing the waste generated by bulk waste generators.

#### ANDHRA PRADESH

# Rajamahendravaram Municipal Corporation EAST GODAVARI DISTRICT

The city of Rajamahendravaram, popularly known as Rajahmundry, is located on the banks of the Godavari and is home to about 400,000 people. Under the flagship SBM 2.0, the city has improved on different aspects of solid waste management, such as setting up an RRR centre under Mission LiFE; augmenting the processing of organic waste through windrow composting, with stringent monitoring of the quality; introducing healthcare initiatives for sanitary workers etc.

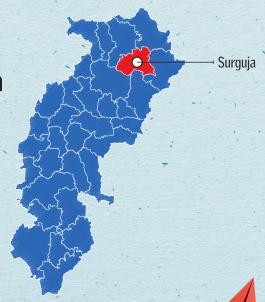
Following the training by CSE, the municipal corporation carried out an extensive mapping of bulk waste generators (BWGs) in the city; these were then divided into four categories based on the quantity of waste generated. The municipality has enforced the legal provisions for compliance in accordance with its bye-laws and the Solid Waste Management Rules, 2016. The identified BWGs are managing their wet waste in-situ through composting and biomethanation; they are also paying tariffs for collection of their dry waste. The city continues to offer technical and handholding support to the BWGs.



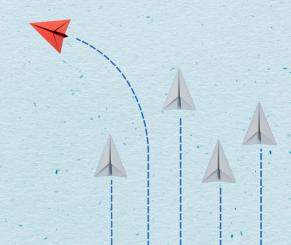
# Ambikapur Municipal Corporation surguja district

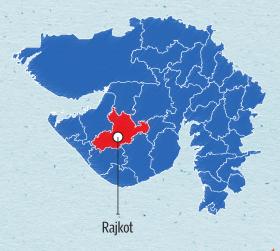
Ambikapur, one of the oldest cities in the state, is the headquarters of Surguja district. The city has put in a stellar performance under SBM 2.0. The SHG model followed here has been very effective in encouraging inclusion of women in the waste management value chain. The women of Ambikapur, actively involved in waste collection, processing and sales, have now got a sustainable livelihood opportunity.

Following the CSE training, Ambikapur has been able to strengthen its waste management infrastructure by boosting its door-to-door collection and segregation of waste. Ambikapur Municipal Corporation has been actively pursuing effective modes of Information, Education and Communication (IEC). Innovative initiatives like 'Garbage Clinics' have provided a voice to informal workers and have integrated them in the waste management value chain. With a proactive and decentralised approach, Ambikapur continues on its way towards being a zero-landfill city.



The SHG model of Ambikapur has been very effective in involving women in the waste management value chain, thereby giving them a sustainable livelihood opportunity.





Under SBM 2.0, the Rajkot Municipal Corporation has transformed its waste management practices through effective utilisation of user charges. For greater transparency and equitable door-to-door waste collection, it has implemented user charges on a daily basis.

#### **GUJARAT**

# Rajkot Municipal Corporation RAJKOT DISTRICT

Rajkot is the fourth largest city in Gujarat. After attending CSE's capacity-building programme, the Rajkot Municipal Corporation (RMC) has strengthened its waste infrastructure by establishing scenario- and need-based MRF (material recovery facilities) in different parts of the city. Transfer stations have been set up to facilitate secondary transportation for scientific disposal of non-recyclable materials — in addition to primary infrastructure, RMC is taking active steps to manage the non-recyclable waste categories.



#### **HARYANA**

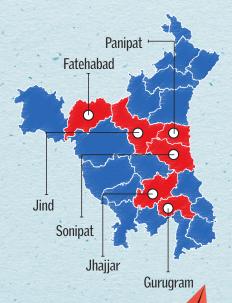
### Municipal Corporation of Gurugram GURUGRAM DISTRICT

The millennium city of Gurugram, with a population of over 2.4 million, generates more than 1,200 tonne of waste every day. The Municipal Corporation of Gurugram (MCG) has emerged as a trailblazer in transforming waste management practices among bulk waste generators (BWGs) — a result of the city's aware and proactive citizenry and willing and enthusiastic administrators.

Following a comprehensive assessment by CSE and capacity-building sessions conducted by it, the MCG has revamped its approach by identifying and notifying over 1,600 BWGs, issuing compliance notices, and empowering these generators to choose customised services through an improved empanelment system. The city also addressed critical challenges such as space constraints for in-situ composting by introducing shared organic waste management facilities for clusters of BWGs.

In a significant step forward, Gurugram became the first city in India to launch a dedicated MIS portal for BWGs, enabling systematic registration and monitoring of waste management practices. This platform ensures transparency and fosters informed decision-making by city officials while encouraging accountability among BWGs.

Another pioneering task was revitalising Gurugram's Citizens' Supervisory Committee, which has since facilitated critical advancements, including the adoption of revised municipal byelaws. These efforts collectively showcase how capacity-building programmes and collaborative governance can create scalable, sustainable solutions in urban waste management, positioning Gurugram as a model city for others to emulate.



The MCG, guided by CSE's recommendations. has undertaken several initiatives to overhaul its waste management system and monitoring mechanism for BWGs. Officials from MCG benefited from CSE's capacity-building programme on sustainable solid waste management, which helped them gain critical insights and skills to overhaul the BWG system in the city.





#### Bahadurgarh Municipal Council JHAJJAR DISTRICT

Bahadurgarh, known as the 'Gateway to Haryana', has a population of 170,426, and is divided into 31 wards. Under SBM 2.0, Bahadurgarh has embarked on an ambitious mission to bio-remediate a staggering 430,000 tonne of legacy waste at its municipal council dumping site on Naya Gaon Badli road. Showing remarkable progress, Bahadurgarh has already successfully remediated over 170,000 tonne of legacy waste. This commitment to tackling its legacy waste, coupled with its focus on segregation, collection and processing, highlights the city's dedication to responsible municipal solid waste management. By reclaiming and restoring this land, Bahadurgarh is setting a powerful example for other cities grappling with legacy waste challenges.

The city has prioritised source segregation through awareness campaigns and the provision of separate bins for wet and dry wastes, encouraging community engagement. CSE's training programmes have undoubtedly played a crucial role in equipping the city officials with technical expertise.

Bahadurgarh is trying to bio-remediate 430,000 tonne of legacy waste lying in its municipal council dumping site. The city has had a measure of success in this – it has managed to successfully remediate over 170.000 tonne.



#### Fatehabad Municipal Corporation

Fatehabad, a growing city in Haryana with a population of approximately 942,011, generates about 10 tonne of solid waste daily across its 25 wards. Under SBM 2.0, Fatehabad has made notable strides in improving its waste management systems, focusing on sustainable and community-driven approaches.

The city has implemented comprehensive door-to-door waste collection and segregation systems, ensuring regular waste disposal across all wards. The city has established material recovery facilities (MRFs) to process dry waste, while wet waste is composted to minimise landfill dependency. Special focus has been placed on eliminating garbage vulnerable points (GVPs) through systematic waste collection and management practices.

Following capacity-building support from CSE, Fatehabad has enhanced its Information, Education, and Communication (IEC) campaigns to raise public awareness about waste segregation and responsible disposal. Fatehabad has streamlined user charge collection to create a sustainable revenue model for waste management. This financial strategy, coupled with active citizen engagement, has enabled the city to strengthen its waste management infrastructure and services.



Under SBM 2.0,
Narwana has placed
significant emphasis
on bio-remediation,
source segregation and
door-to-door collection,
resulting in considerable
improvements in
its municipal waste
management practices.

### Narwana Municipal Council

For managing its municipal waste, Narwana is rigorously focusing on awareness campaigns and community participation. Taking its commitment a step further, Narwana has proposed an ambitious plan to tackle its legacy waste -- this includes bio-remediating its existing dumpsite, which holds 87,561 tonne of waste, and setting up a waste-to-energy plant. CSE's capacity building programmes have been instrumental in supporting Narwana's efforts. The training has provided valuable knowledge and guidance for bio-remediation and optimising waste collection systems. Through these multifaceted efforts, Narwana is not just making the city aesthetically appealing, but transforming its waste into a valuable resource, generating economic opportunities, and fostering a sense of community ownership.

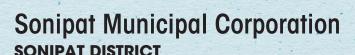
### Panipat Municipal Corporation PANIPAT DISTRICT

Panipat is a historic city in Haryana, and is well-known as a 'Textile City' or a 'City of Weavers'. It is a major industrial hub, and is located strategically between Delhi and Chandigarh.

The city has taken a proactive approach to municipal solid waste management. In 2018, the city took a decisive step by notifying byelaws in compliance with the Solid Waste Management Rules of 2016. This move has ensured a more stringent framework for incentivising good practices and penalising non-compliance across the entire municipal solid waste value chain. Through this, Panipat is fostering a culture of responsible waste management and encouraging community participation. CSE's training programmes have played a key role in equipping the city officials with the requisite knowledge and tools, enabling them to optimise their waste management strategies.

Panipat has taken significant strides under SBM 2.0, particularly given the challenges posed by the large volume of textile waste generated by its textile manufacturing and recycling industry.





Sonipat, a strategically located industrial hub in Haryana within the National Capital Region, lies just 44 km from New Delhi. Often referred to as the 'City of Gold' due to its historical association with goldsmiths, the city boasts a population of over 300,000. Under SBM 2.0, Sonipat has undertaken significant initiatives to improve its solid waste management systems.

The city has implemented an efficient door-to-door waste collection system, ensuring timely and regular pick-up of segregated waste from households and establishments. To bolster waste processing, Sonipat has invested in modern infrastructure, including a materials recovery facility (MRF) and a composting plant, streamlining the recycling and treatment of waste.

Guided by the capacity-building training provided by CSE, Sonipat's municipal officials have adopted more sustainable waste management practices. These efforts reflect the city's commitment to creating a cleaner and healthier environment Source segregation is a priority, with awareness campaigns and community engagement driving behavior change among residents to separate wet and dry waste effectively.







CSE's training
has helped the
Narkanda nagar panchayat
to effectively plan tangible
changes to its waste
management systems and
processes.

#### **HIMACHAL PRADESH**

### Narkanda Nagar Panchayat SHIMLA DISTRICT

Narkanda is a picturesque town in Kumarsain subdivision of Shimla district in Himachal Pradesh. The town itself has a population of less than 5,000, but receives a lot of tourists—like many other hill stations, it has struggled to manage its waste. Under SBM 2.0, the town has considerably improved its source segregation levels.

# Palampur Municipal Corporation KANGRA DISTRICT

Palampur is a hill station in the Kangra valley of Himachal Pradesh, known for its lush tea gardens, scenic landscapes, and pleasant climate. With a population of 50,000, the town also receives a significant tourist footfall due to its proximity to other major urban centres.

Under SBM 2.0, Palampur has taken some robust steps to improve its waste management infrastructure. Officials from Palampur attended CSE's training on sustainable solid waste management — it helped them gain insights on plastic waste management. The city has also taken various initiatives to improve segregation awareness of its residents.

Palampur Municipal Corporation has developed a comprehensive redressal mechanism named 'Garbage Complaints' to ensure active participation by citizens in maintaining cleanliness.





# Parwanoo Municipal Council SOLAN DISTRICT

The city has worked on improving its user fee collection system to make its SWM operations more sustainable.

Parwanoo is a town situated in the lap of the Kasauli range in the outer Himalaya. Established in 1972, the town has developed into an industrial and commercial centre. The town is also known for its fruit orchards. Under SBM 2.0, Parwanoo has taken steps to preserve its natural beauty. Serious efforts have been put in to ensure waste is collected from all households and establishments. The municipal council has also undertaken steps to improve the percentage of source segregation. Officials from Parwanoo attended CSE's training, which helped them plan out their SWM operations.

# Hamirpur Municipal Council HAMIRPUR DISTRICT

Hamirpur nestles in the Shivalik ranges of the Himalaya, and is home to 17,604 residents; the town generates approximately 6.2 tonne of waste every day. By adopting behavioral change strategies, the municipal council engaged stakeholders such as councilors, NGOs, self-help group (SHG) members, and safai mitras to drive awareness campaigns on source segregation and sustainable waste management.

Sensitisation efforts included innovative initiatives like nukkad nataks and plays during local fairs, making the concept of source segregation relatable to the public and encouraging community participation. The training provided by CSE offered a comprehensive understanding of solid waste management challenges and solutions, enabling officials and sanitation workers to implement more effective and inclusive strategies.

Under SBM 2.0, Hamirpur faced initial challenges in waste collection, segregation and processing. However, after participating in CSE's capacity-building programme, the town transformed its waste management practices



effective management of

both dry and wet waste.

Nestled in the picturesque valleys of Himachal Pradesh, Chamba is renowned for its cultural heritage, ancient temples and breathtaking landscapes. The Chamba Municipal Council oversees this historic town, which spans 10 sq km, serves a population of over 20,000, and generates approximately 6.2 metric tonne of solid waste daily across its 11 wards.

Under SBM 2.0, the council has undertaken numerous initiatives to improve waste management. Door-to-door waste collection has been implemented, supported by regular awareness campaigns to encourage source segregation among residents. Following hands-on training by CSE, Chamba has adopted several transformative measures. The Council has intensified efforts to raise public awareness on segregation, expanded segregated waste collection services, and promoted home composting practices. Onsite waste treatment facilities have been strengthened, and bio-remediation efforts at the dumpsite have commenced, turning it into a more sustainable resource.

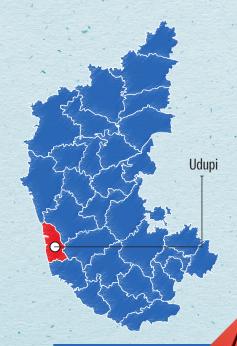


#### **KARNATAKA**

#### Udupi Municipal Corporation

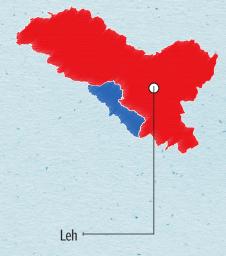
The coastal town of Udupi is known for its pristine beaches, rich heritage and delectable cuisine. The town has a population of 200,000 and generates over 70 TPD of municipal solid waste. Under SBM 2.0, the town has put in a considerable effort to bring in reformative changes. These include intensive door-to-door awareness to ensure segregation of waste at source and adopting the bin-and-bag set-up for waste collection. HDPE woven bags have been provided to store segregated dry waste for longer. This change ensured that more materials could be recovered in the operational material recovery facilities (MRFs). Separate bins for wet waste have ensured effective collection and better quality of city compost. The hazardous waste, collected separately, is landfilled.

Udupi has also taken steps to sort, store and bale segregated combustible fractions (SCFs) and multilayered plastics (MLPs). Non-recyclables are sent to various cement manufacturing units in the state for co-processing.



Capacity building support from CSE has helped the municipality gain deeper understanding of the operational aspects of dry waste processing and on managing problematic fractions of plastics.





#### **LADAKH**

### Leh Municipal Committee

The town of Leh has a population 43,000 and generates around 10 tonne per day of waste. Nestled in the harsh high-altitude Himalayan region, the town has unique waste management challenges. But the Leh Municipal Committee (LMC) has put in place reforms to build a sustainable waste management system. With capacity-building support from CSE, LMC has initiated decentralised waste management in one of its wards — the aim is to scale it up across all wards in future. To strengthen resource recovery efforts, the LMC has established a dedicated Reduce, Reuse, Recycle (RRR) center. Bye-laws have been formulated to institutionalise sustainable practices and ensure compliance. Segregation of waste at source has improved significantly, enabling efficient recycling and reducing landfill dependency.

The LMC has also entered into MoUs with local entrepreneurs to enhance recycling initiatives, giving waste materials a second life. In a pioneering collaboration with the Border Roads Organisation, plastic waste is being used in road construction, providing an innovative solution to waste disposal and infrastructure development. These initiatives showcase Leh's commitment to transitioning towards a circular economy and setting a sustainable model for high-altitude urban areas.

Citizen engagement and behavior change are at the heart of LMC's approach, with efforts focused on creating awareness and promoting responsible waste management practices.



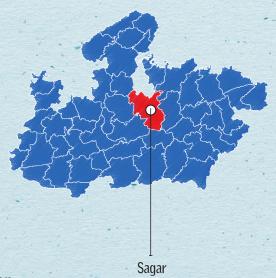


### Sagar Municipal Corporation SAGAR DISTRICT

Sagar division is situated on the Vindhyan ranges and encompasses six administrative districts. The Sagar Municipal Corporation (SMC) is the headquarters of the division and has a population of about 3,15,000 (as per the ULB).

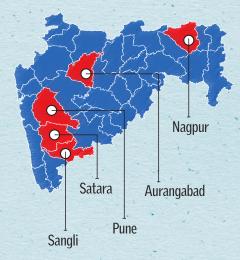
Under SBM 2.0, the city has taken many positive steps towards solid waste management, including the rejuvenation of the Lakha Banjara lake. Once neglected, the lake now sparkles with life, offering a serene escape for residents and supporting local biodiversity — all thanks to monitored management of waste collection and segregation. Sagar Municipal Corporation officials, after attending the capacity-building programmes with CSE, have understood the different facets of solid waste management and have taken holistic steps for specific waste categories like C&D waste, plastic waste etc, and have pursued different methodologies of IEC activities.

To address the menace of C&D waste, SMC has implemented a sustainable management system, turning waste into resources. This initiative has set a benchmark for effective urban waste management while keeping Sagar's streets debris-free. In a bid to combat plastic pollution, SMC has enforced a strict ban on single-use plastics under the "Swachhata ki Gagar, Apnon Sagar" and "Sagar Ka Sukoon"



Promoting zero-waste events, SMC has shown how celebrations can coexist with sustainability. From religious gatherings to public festivals, the city now follows a 360° cleaning approach, and tries to leave no trace of waste behind.





# With capacity building support from CSE, Shambhaji Nagar (Aurangabad) has prioritised MRF development to efficiently process dry waste, recover valuable materials and reduce landfill dependency.

#### **MAHARASHTRA**

#### Shambhaji Nagar Municipal Corporation SHAMBHAJI NAGAR DISTRICT

Aurangabad — now renamed as Shambhaji Nagar — is a historic city in Maharashtra known as the gateway to the Ajanta and Ellora caves. The city has a population of over 1.5 million, and generates nearly 600 TPD of municipal solid waste.

Under SBM 2.0, the municipal corporation has implemented reforms focusing on segregation and the management of dry and plastic waste, with special emphasis on developing material recovery facilities (MRFs). Drawing inspiration from the best practices shared by CSE during training in cities like Indore, the municipality has introduced innovative systems for plastic waste collection and recycling. The city has also launched awareness campaigns to promote waste segregation at source, engaging citizens through workshops, events and digital outreach. These efforts have significantly improved the city's solid waste ecosystem. The city's focus on segregation, public participation and MRF development underscores its commitment to sustainability, turning waste into a resource and paving the way for a cleaner, greener future.

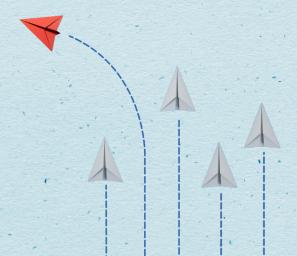
### Nagpur Municipal Corporation NAGPUR DISTRICT

Nagpur, famous as the 'Orange City' of India, generates approximately 1,200 TPD of municipal solid waste. Under SBM 2.0, the Nagpur Municipal Corporation (NMC) has undertaken significant reforms to enhance its waste management system.

With capacity-building support from CSE, NMC is advancing its bio-CNG initiative, including the development of a 600-TPD bio-CNG plant; a 10-TPD pilot project is already operational. These projects aim to transform organic waste into renewable energy, thus reducing greenhouse gas emissions and landfill dependency.

Informal waste pickers have been mapped and organised into cooperatives, integrating them into the formal system and securing their livelihoods. The NMC has also established RRR (Reduce, Reuse, Recycle) centers to promote resource recovery and reduce waste generation. These initiatives, combined with CSE's guidance on decentralised waste management and renewable energy, position Nagpur as a leader in sustainable urban waste management, driving a circular economy towards a cleaner, greener future.

Nagpur has improved its waste segregation at source through citizen engagement and awareness campaigns. It launched the 'Zero Waste Ganpati Utsav', promoting sustainable festive practices by segregating floral waste and processing it in a compost facility.





# Karad Municipal Corporation SHAMBHAJI NAGAR (FORMERLY AURANGABAD) DISTRICT

Karad is a vibrant city known for its rich history and strategic geographical location at the confluence of the Krishna and Koyna rivers. With an estimated population of about 90,000, Karad spans an area of around 10.51 square kilometer. The city is an important administrative and cultural hub in southern Maharashtra, situated along national highway 48, connecting Mumbai and Bengaluru.

The city has adopted a centralised approach that focuses on community engagement and sustainable practices. Karad generates approximately 15 metric tonne of solid waste daily, primarily consisting of organic and domestic waste. To address this, the municipal corporation emphasises source segregation; it has implemented doorto-door waste collection, covering almost 100 per cent of its wards.

Karad has invested in composting facilities to manage organic waste effectively, promoting home composting. It also runs campaigns to encourage source segregation and reduce plastic usage among residents. Dry waste is transported to a material recovery facility (MRF), where recyclable materials are segregated and sold to authorised recyclers, while the remainder is sent to scientifically managed landfills.

To enhance efficiency, the Karad Municipal Corporation leverages modern waste collection vehicles equipped with GPS tracking, ensuring timely and effective service. The administration actively involves informal waste pickers in SWM operations, empowering them through training and financial support.

Karad has also established a biomedical waste treatment facility under a public-private partnership (PPP) model in association with the Karad Hospitals Association: this collaboration facilitates the treatment of biomedical waste from hospitals and sanitary waste from households. The total quantum of sanitary waste treated is 0.35 tonne a day. This innovative approach has allowed the municipality to effectively manage these specialised waste streams without incurring any processing costs.

Karad's waste management practices reflect its commitment to sustainability and community involvement. However. challenges remain, such as addressing waste generated by informal settlements and enhancing public awareness. The city continues to evolve its waste management systems, setting an example for similar urban centers in Maharashtra.





# Shirur Municipal Corporation PUNE DISTRICT

Shirur, on the banks of the Ghod river, houses MIDC (Maharashtra Industrial Development Corporation), one of the largest industrial complexes in Asia. Effective segregation of waste, including plastics, has helped Shirur municipality sell plastic waste through the 'plastics scrapwala' app. Shirur municipality officials have attended the capacity building training of CSE. which helped them understand the importance of the incentivisation and penalisation provisions in municipal bye-laws. The municipality has started using the 'm-water' app as an effective IEC tool and has enhanced citizen's engagement. Shirur has also introduced a semi-mechanised material recovery facility (MRF) for streamlining its dry waste management practices.

Under SBM 2.0, Shirur has been involved in waste characterisation and quantification with citizen-centric participation.



Palus is known for its thriving agricultural economy, particularly its grapes. With a population of approximately 40,000, Palus generates around 15 tonne of solid waste daily. Under SBM 2.0, the city has been diligently working to improve its solid waste management practices.

Key initiatives include promoting source segregation through targeted public awareness campaigns and community participation. Residents are encouraged to separate wet and dry waste at the household level, a practice that has significantly reduced the volume of waste sent to dumpsites and increased the recovery of recyclable materials. In addition, the city has focused on implementing decentralised waste processing systems to manage organic waste more efficiently.

With capacity-building support from CSE, Palus has refined its waste management strategies, integrating best practices and operational efficiencies. By prioritising segregation, efficient collection, and decentralised processing, Palus is making remarkable strides toward a cleaner, more sustainable urban environment, setting a benchmark for other small cities in the region.

The training provided by CSE has empowered municipal staff and stakeholders to adopt innovative solutions, ensuring sustainable waste management.

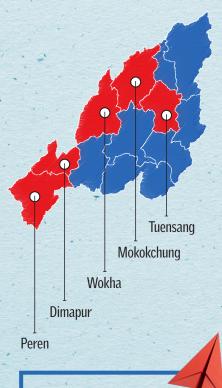


#### **NAGALAND**

#### Wokha Town Council WOKHA DISTRICT

Wokha is a vibrant headquarter town of over 35,000 residents, predominantly inhabited by the Lotha Nagas. Located about 75 km north of Kohima, the capital, Wokha is the third largest town in the state, and holds cultural significance.

Recognising the importance of responsible solid waste management, Wokha has actively engaged in initiatives focused on behaviour change communications and capacity building. The Nagaland Department of Urban Development and Wokha Town Council (WTC), in collaboration with NGOs, organise awareness programmes and trainings on solid waste management. These programmes emphasise on the importance of source segregation and proper treatment and disposal of dry and wet waste, highlighting the benefits of composting and recycling. Participants from various wards, colonies and organisations, including educational institutions, local unions and SHGs, actively engage in these programmes. CSE's training programmes have complemented these efforts, providing valuable expertise and resources to support Wokha's journey towards sustainable solid waste management.



By promoting awareness, providing training and encouraging community participation, Wokha is taking significant steps to create a cleaner and healthier environment for its residents.

# Dimapur Municipal Corporation DIMAPUR DISTRICT

Measures to combat plastic waste include enforcing plastic bans, promoting sustainable alternatives, and establishing recycling hubs for plastic and electronic waste.

Dimapur City, with an estimated population of about 1,64,000, generates approximately 60 tonne per day of municipal solid waste. Under SBM 2.0, the city has implemented several initiatives to improve waste management. A segregated waste collection system has been introduced, encouraging residents to separate biodegradable, recyclable and hazardous wastes at source. Public awareness campaigns have been crucial in educating citizens about segregation, while door-to-door waste collection services have streamlined disposal and reduced illegal dumping.

Following the training by CSE, the municipality, in collaboration with NGOs, has conducted capacity-building workshops to enhance sustainable practices such as composting and decentralised waste processing. Community composting units have been set up to transform organic waste into compost for urban farming, and monitoring and enforcement mechanisms have been strengthened to ensure compliance with waste disposal norms.

# East Dimapur Town Council DIMAPUR DISTRICT

East Dimapur town is home to approximately 172,000 residents and generates around 2.8 tonne of solid waste daily. Spread across 11 wards, the town has emerged as a leader in sustainable waste management under SBM 2.0, implementing innovative strategies to tackle urban waste challenges effectively.

With the guidance and training provided by CSE, East Dimapur has made significant strides in improving its waste management systems. A major focus has been on enhancing Information, Education and Communication (IEC) activities to create awareness about the importance of proper waste segregation and disposal. These efforts have fostered a sense of responsibility among residents, leading to increased community participation in sustainable practices.

The ULB has taken proactive measures to monetise its waste management systems by establishing dry waste processing units. This initiative not only generates revenues, but also mitigates environmental hazards associated with improper waste disposal.

# Tuensang Town Council TUENSANG DISTRICT

Tuensang, the headquarters of Tuensang district in the north-eastern corner of Nagaland, is a town of approximately 36,800 residents. Under SBM 2.0, Tuensang has implemented a comprehensive system encompassing source segregation, collection and disposal. The town has established ward sanitation committees to manage waste at the local level, ensuring community participation and ownership. Waste collection is facilitated through a combination of strategically placed concrete and open dustbins in public areas and a door-to-door collection system in select wards using dedicated mobile pickup trucks.

To further strengthen its waste management practices, Tuensang has launched several initiatives, including a Solid Waste Management Awareness Programme to educate the public on waste management rules and a 'Waste to Wealth' programme with an RRR center for reusing and recycling materials. The Town Council also actively promotes responsible waste management through plastic waste collection campaigns, incentivising citizens to participate.

CSE's training programmes have played a vital role in supporting Tuensang's efforts by providing valuable knowledge and technical support to the town officials for waste segregation, collection and disposal. By embracing the principles of reduce, reuse, and recycle, Tuensang is taking significant strides towards managing waste.

While still on its journey

perfect role model, Tuli

is making commendable

solid waste management

segregation and door-to-

door collection to create

a cleaner and healthier

environment.

efforts to improve its

system, focusing on

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towards becoming a

#### **Tuli Town Council MOKOKCHUNG DISTRICT**

Tuli is a vibrant town located on the banks of the Milak river. It is home to approximately 7,800 residents. The town is known for its rich Ao Naga culture and scenic beauty. Under SBM 2.0, Tuli is taking proactive steps to ensure its waste management practices are as progressive as its community is. Tuli has implemented comprehensive awareness campaigns to educate residents about the importance of separating waste at source. To complement these efforts, Tuli has strengthened its door-to-door waste collection system, ensuring regular and efficient collection of segregated waste from households and other establishments. This comprehensive approach is not only promoting responsible waste disposal, but also fostering a sense of community ownership in maintaining the town. CSE's training programmes have been instrumental in guiding Tuli's efforts towards effective awareness strategies, source segregation, and optimising door-to-door collection systems.



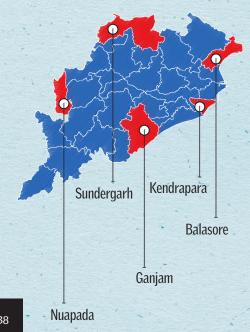


#### Tening Town Council PEREN DISTRICT

Tening is a town in the rolling hills of Nagaland's Peren district, and is home to a close-knit community of around 25,000 residents. Known for its vibrant culture and breathtaking landscapes, Tening is taking concrete steps towards sustainable solid waste management to preserve its natural beauty. Under the SBM 2.0 framework, Tening has launched rigorous awareness campaigns to educate residents about the importance of waste segregation and proper disposal methods. These campaigns utilise various platforms, including community meetings, workshops and public announcements, to reach a wide audience and encourage active community participation.

CSE's training programmes have been invaluable in guiding Tening's efforts. The training has provided valuable knowledge to the officials about planning effective awareness campaigns, and demonstrated best practices for operating and maintenance of the MRF. By combining community engagement with efficient infrastructure, Tening is setting an inspiring example for other towns in the region.

To facilitate proper waste disposal, Tening has established strategically located collection points throughout the town, making it convenient for residents to dispose of their segregated waste. The town has invested in a materials recovery facility (MRF) to ensure efficient sorting, processing and recycling of collected waste.



#### **ODISHA**

#### Rourkela Municipal Corporation SUNDERGARH DISTRICT

Bounded by two rivers, the Koel and the Sankha, Rourkela is a well-known urban centre in the state of Odisha. It is also known as the 'Ispat (Steel) City' due to the presence of a steel processing plant of the Steel Authority of India. Under SBM 2.0, Rourkela has managed to perform well in putting in place a decentralised waste management system. The Rourkela Municipal Corporation has effectively managed to achieve a higher segregation rate and thus is able to create decentralised centres for preparing compost. The compost prepared out of household wet wastes are used in government gardens and distributed to others who need it. Rourkela has adopted various programmes through IEC activities and continues to push for local level management of city waste along with inclusion of female workers in the waste management value chain.

CSE's capacity building training taught Rourkela about the importance of bye-laws in managing a city's waste challenges.

#### Chikiti Nagar Panchayat GANJAM DISTRICT

Chikiti, a clean and green city located in the southern part of Odisha, has a population of 16,300. The city generates around five tonne of solid waste daily, from approximately 3,000 households across 12 wards. Chikiti's Micro Composting Center (MCC) and Material Recovery Facility (MRF) manage the entire solid waste, producing organic manure that generates revenue for the Nagar Panchayat. With support from CSE, Chikiti has successfully implemented plastic segregation and recycling. Awareness campaigns on single-use plastics, 3R (Reduce, Reuse, Recycle) centers, the production of organic manure (mo-khata) from wet waste, and C&D waste recycling are the key initiatives. The involvement of Self-Help Groups (SHGs), senior citizens, students, youth volunteers and political representatives has been crucial in the success of the Swachh Survekshan efforts in Chikiti.





## Soro Municipal Council BALASORE DISTRICT

The success of Soro's initiative lies in its ability to integrate social inclusion with environmental sustainability. By empowering women and leveraging their skills, Soro has transformed MSW management into a source of livelihood and community development. This model also serves as an inspiration for other cities looking to replicate sustainable and inclusive waste management practices.

Under the SBM 2.0 framework, Soro has pioneered a unique model where women from self-help groups (SHGs) are integrated into every stage of the municipal solid waste management value chain. These women are now key players in every step of the process, from collecting waste door-to-door and educating residents about source segregation, to processing dry waste at material recovery facilities (MRFs). This involvement of SHGs has not only strengthened the city's municipal solid waste management practices, but also brought about significant social and economic benefits. By diverting large amounts of waste from dumping sites, Soro is able to reduce its environmental footprint while simultaneously creating employment opportunities and empowering women.

CSE's capacity building programme played a crucial role in enhancing Soro's waste management model. The knowledge transfer enabled Soro to further optimise its MSW management system, leading to cost savings and increased community participation.



#### Paradeep Municipal Corporation JAGATSINGHPUR DISTRICT

Paradeep houses one of India's largest and most important seaports on the Bay of Bengal. It is also a popular tourist destination with golden beaches, clear blue waters, and large granite rock formations. The city, with an estimated population of about 85,000, is spread across an area of 32.4 sq km and is divided into 19 wards.

Under SBM 2.0 and in line with the state's 'Waste to Wealth' slogan, Paradeep has adopted a decentralised and community-driven model with micro-composting centres and material recovery facilities. With active involvement of women's groups, third-gender groups and ragpickers' associations appointed for operations and maintenance of the micro-composting centres and MRFs, the city has upheld a new waste management model that is inclusive as well as economically sustainable. Paradeep also boasts of an eco-friendly waste transportation system by virtue of its investment in battery-operated vehicles. CSE's capacity building training has further strengthened these initiatives.

By processing 100 per cent of its waste and generating revenues from user fees, fines and the sale of recyclables and compost, the city has created a truly sustainable, inclusive and economically viable model for other cities to follow.





#### Nuapada Municipal Corporation

Nuapada is a town in western Odisha known for its tribal communities and rich biodiversity. Nuapada has an estimated population of 6,10,382 people, and has primarily an agrarian and forest-based economy.

Under SBM 2.0, the city is focusing on strengthening waste segregation, collection and awareness campaigns. However, it has faced challenges such as resistance from citizens who are yet to fully adopt these new practices. Despite these hurdles, Nuapada is determined to make progress. It is actively promoting source segregation through door-to-door campaigns and community meetings, emphasising the importance of separating wet and dry wastes. The city is also working to improve its waste collection system by ensuring consistent door-to-door collection, maximising collection coverage, and strategically placing public bins.

CSE's capacity building training programmes have been instrumental in guiding Nuapada's efforts. The training has provided valuable insights to the city officials into overcoming challenges in community mobilisation and promoting behavioural change. With continued perseverance and community engagement, Nuapada aims to overcome these obstacles and create a cleaner, healthier environment for all its residents.

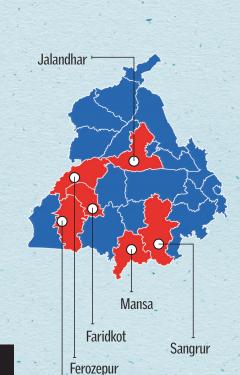
In an initiative to mitigate the adverse impacts of plastic waste on the environment, some communities in Nuapada have introduced the 'Bartan Bank' – a repository of utensils available for community use.

#### Asika Municipal Corporation GANJAM DISTRICT

Asika or Aska is a historic town and a notified area council in Ganjam district of Odisha; it has an estimated population of about 30,000. Asika is fondly referred to as the 'Sugar city', and boasts the distinction of having one of the oldest sugar factories in India and the first of its kind in Asia to produce white sugar.

The city is taking significant strides towards effective municipal solid waste management. Recognising the importance of proper waste disposal, Asika has prioritised three key areas under SBM 2.0: source segregation, waste processing and treatment, and dumpsite remediation. The city has implemented a comprehensive waste segregation programme, encouraging residents to separate wet and dry waste at the source, promoting resource recovery. To encourage community participation, Asika has implemented a user fee system, ensuring residents are invested in responsible waste disposal. The city is actively cleaning the garbage vulnerable points and transforming them into recreational spaces for the community.

CSE's capacity building programmes have been crucial in supporting Asika's efforts. The training has provided valuable technical knowledge and guidance to the city officials, particularly on waste processing and disposal practices.



#### **PUNJAB**

#### Malout Municipal Council MUKTSAR DISTRICT

Malout is a cotton producing centre. Under SBM 2.0, scientific remediation of the city's dumpsite has been in progress. The Malout Municipal Council has effectively deployed mechanical vehicles for the segregated collection of waste, leading to a decrease in open dumping of mixed wastes. The informal sector has been integrated, and this integration has propelled regular monitoring of waste generation and collection in the area -- people's participation in waste segregation has led to proper collection of plastic waste.

[ Muktsar

After attending the capacity-building programme of CSE, Malout was able to understand the importance of the informal sector in the waste value chain — the city has now taken active steps for their integration.

#### Jalandhar Municipal Corporation JALANDHAR DISTRICT

Jalandhar is a major industrial centre, and well-known as a hub for the sports industry. With a population of 1.2 million, the city produces more than 500 tonne per day (TPD) of municipal solid waste.

Under SBM 2.0, the city has undertaken a series of reforms to improve its solid waste ecosystem. With capacity building support from CSE, the Jalandhar Municipal Corporation (JMC) has done an extensive mapping of the city's informal waste pickers, and is exploring avenues in the value chain to integrate them. These waste pickers have been organised into cooperatives.

The JMC has leveraged support from SBM 2.0 to also improve its micro-composting centres-cum-material recovery facilities (MCC-MRF) and set up a maiden bio-gas plant. The JMC has undertaken measures to engage with citizens — the aim has been to initiate behaviour change and encourage segregation of waste at source.

Officials from Jalandhar are trying to learn from Pune, which already has a successful model of a partnership between the municipal government and cooperatives of waste pickers.



Faridkot's initiatives have led to a 30 per cent increase in waste segregation, a 25 per cent reduction in waste sent

to landfills, and improved

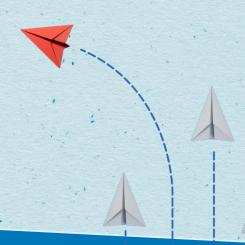
stakeholder collaboration.

#### Faridkot Municipal Corporation FARIDKOT DISTRICT

Faridkot, located in the Malwa plains of west-central Punjab, has a population of approximately 87,000. The city generates around 19 tonne of waste every day.

Under SBM 2.0, Faridkot has made notable strides in sustainable waste management and environmental conservation. A decentralised waste management system has been implemented, stressing on segregation, composting and recycling. Public awareness campaigns have educated citizens on proper waste disposal and environmental stewardship, leading to increased community participation.

Participation in CSE trainings have led to collaborations among residents, businesses and community groups. A green infrastructure plan has been developed, incorporating parks and gardens to reduce the urban heat island effect and enhance air quality. Additionally, a robust monitoring and evaluation system has been established to track progress and address challenges. These and other initiatives reflect Faridkot's commitment to building a sustainable and environmentally conscious community, demonstrating the impact of CSE's training on the city's solid waste management practices.



## Dhuri Municipality

Dhuri is a key tehsil town in Punjab. With a population of 55,225, Dhuri generates approximately 16 tonne of waste daily. CSE's capacity-building programme further strengthened Dhuri's waste management framework. The municipality upgraded its existing material recovery facility (MRF), established additional MRFs, and developed compost pits to handle organic waste effectively. Bio-remediation efforts were initiated at the city's dumpsite to mitigate environmental impacts. Public awareness campaigns played a pivotal role in increasing source segregation rates and ensuring higher efficiency in segregated waste collection.

Under SBM 2.0, Dhuri focused on streamlining waste collection systems, reducing secondary waste points, and improving the efficiency of source segregation. These measures laid the groundwork for better waste processing and treatment.







(MRFs) have been established in Budhlada

treatment.

to streamline dry waste

pits have been optimised

for efficient organic waste

#### **Budhlada Municipality MANSA DISTRICT**

Budhlada spans over 9.5 sq km and is home to a population of 39,000. Agriculture is the primary industry. The town generates approximately 8 tonne of waste daily. Under SBM 2.0, Budhlada has introduced a range of initiatives to enhance urban cleanliness and sustainability. Efforts include landfill remediation to address legacy waste, development of compost pits for organic waste processing, and creation of green spaces such as public parks to improve livability and aesthetics.

CSE's capacity-building programme has strengthened Budhlada's waste management system. Public awareness campaigns have successfully educated residents about source segregation, achieving a remarkably high segregated waste collection rate. These improvements have enhanced waste management practices, reduced environmental impacts, and fostered a cleaner, greener community in Budhlada.

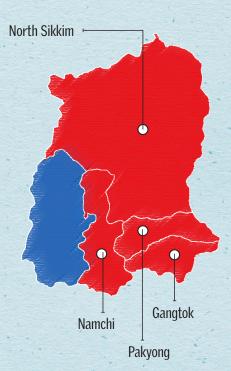
## Talwandi Bhai Municipality FEROZEPUR DISTRICT

Talwandi Bhai has a rich legacy as a major grain market and a manufacturing hub for agricultural and tractor equipments. With a population of 20,735, the town generates around four tonne of waste daily. Under SBM 2.0 and the Municipal Solid Waste Management Rules 2016, Talwandi Bhai has achieved 100 per cent sweeping, door-to-door waste collection, segregation and processing across all its wards.

After participating in CSE's capacity-building programme, Talwandi Bhai became the first municipal council in Ferozepur district to achieve a high waste processing efficiency. Daily, nearly all of the biodegradable waste is composted using pit composting, while all dry wastes are recycled, resold or reused. In October 2023, the town inaugurated Ferozepur's first 'Waste to Wonder' park, a unique attraction highlighting waste management efforts. Revenues from solid waste management have increased following the high processing rates.

With facilities like compost pits, material recovery facilities (MRFs), a sanitary landfill, and a C&D waste plant, Talwandi Bhai has set a regional benchmark for sustainable waste management.





The ULB has recently applied for three-star GFC with the aim of making Mangan the first zero landfill city in the country, setting a national benchmark for sustainable waste management practices.

#### SIKKIM

#### Mangan Nagar Panchayat NORTH SIKKIM DISTRICT

Mangan, a small town in northern Sikkim with a population of 6,000, has emerged as a leader in solid waste management with its motto "Committed for a Better Tomorrow". The Mangan Nagar Panchayat (MNP) employs a holistic and community-driven approach to waste management, making it a role model in the state. The community participation from all spheres of society empowers the ULB to work efficiently on SWM.

Trained by CSE, the MNP has adopted a different approach for citizen's engagement with its waste management infrastructure. The material recovery facility (MRF) in the ULB is a "model state-of-art MRF in the state and the northeast". Setting up the MRF has helped the ULB to efficiently sort out the dry waste into varied categories of glass, paper and other categories and channelise it for suitable waste treatment facilities (as per the hilly terrain). The wet waste management in the ULB runs in a model circular economy with the help of facilities like an organic waste converter machine, composting units and organic nursery.



Namchi, a picturesque town in southern Sikkim, serves as the district headquarters and is home to a population of approximately 12,190, according to the 2011 Census. Known for its religious and cultural significance, Namchi attracts pilgrims to landmarks such as Char Dham, featuring the 12 Jyotirlingas atop Solophok hill, and the towering Guru Padma Sambhava statue at Samdruptse. The town-generates about four-five tonne of waste daily, which is currently disposed of at Sipchu in Soreng district.

Under SBM 2.0, Namchi Municipal Council has adopted a cluster-based approach to waste collection to improve efficiency and coverage. Twelve municipal personnel have undergone specialised capacity-building training conducted by CSE. The Council has now implemented innovative strategies for waste management, including source segregation supported by community participation and dedicated bins for hazardous waste and sanitary napkins. To enhance operational transparency, garbage collection points now display collection timings and contact details for drivers and sanitation inspectors.

Namchi is actively pursuing the establishment of material recovery facilities (MRFs) to improve the management and processing of dry waste, reinforcing its commitment to sustainable waste management and environmental conservation.





#### Rangpo Nagar Panchayat PAKYONG DISTRICT

The Rangpo Nagar Panchayat — 'Gateway to Sikkim — was established in 2011. The town of Rangpo lies on the belt of two rivers — the Teesta and the Rangpo. ULB officials had attended capacity building training from CSE — it helped them manage the challenges of solid waste management in their administrative area.

Rangpo ULB focused on segregated waste collection: a daily average of 4.20 tonne of waste is collected by the Panchayat. It has distributed two bins each to all trade license holders for segregation of dry and wet waste at source. In 2018, Rangpo was awarded the title of the 'Cleanest City in Solid Waste Management in the North East Zone' by the Ministry of Housing and Urban Affairs. More recently, it secured the second position as the 'Cleanest Urban Local Body' in Sikkim in both 2023 and 2024, a recognition that came from the Urban Development Department of the Government of Sikkim. Rangpo Nagar Panchayat remains committed to enhancing its solid waste management systems, setting an example for sustainable urban development in the region.

Rangpo has won awards for its exemplary waste management practices — it has been adjudged the 'cleanest city in the northeast' and the 'cleanest urban local body in Sikkim'.



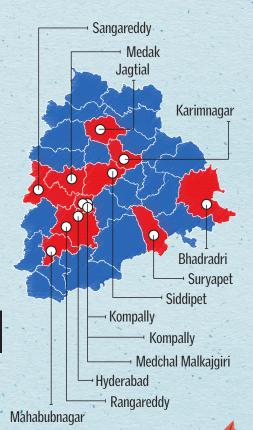


#### Gangtok Municipal Corporation GANGTOK DISTRICT

Established as a Buddhist pilgrimage site, Gangtok is the capital of Sikkim. Under SBM 2.0, Gangtok has taken fruitful initiatives that have streamlined the waste management practices for the region. Given the challenges that hill-towns face and the difficulty in accessing many areas, the Gangtok Municipal Corporation has adopted unconventional methods of waste collection by deploying vehicles which have optimum mobility in the region.

To manage plastic waste, Gangtok has banned all plastic bottle containers less than 2 litre in volume. Recognising the importance of regular monitoring of the waste value chain and timely door-to-door collection of waste, the Corporation has deployed a vehicle at night so that no household is left out and open dumping of waste is avoided.

Officials from the Corporation have attended the capacity building programme of CSE and have turned their learnings to action by identifying 'plastics waste hotspots' in the region: PET bottle shredding machines have been installed in those places.



After participating in a training programme by CSE, Korutla intensified its efforts towards citizen engagement, focusing on educating the public about waste segregation and home composting.

#### **TELANGANA**

## Korutla Municipality JAGTIAL DISTRICT

Korutla is a small municipality with a population of approximately 85,000 — it generates around 25 metric tonne of municipal solid waste daily. Under SBM 2.0, the city has enhanced the maintenance of public toilets, promoted source segregation of waste, and encouraged home composting to reduce the burden on waste management systems. A ban on single-use plastics has been effectively implemented in collaboration with trade unions, ensuring compliance and raising awareness.

The city has strengthened its dry waste management processes, ensuring better recycling and reducing landfill dependency. Technological advancements have been adopted to optimise waste collection, transportation and treatment. These initiatives have significantly improved Korutla's waste management system, making it a model for effective urban sanitation and environmental sustainability.





#### Kothapally Municipality KARIMNAGAR DISTRICT

Kothapally, a newly-formed small municipality in Telangana, has a population of only about 15,000. Under SBM 2.0, the city has made significant strides in improving its waste management operations, integrating waste pickers and self-help groups (SHGs), and introducing policy reforms such as by-laws incentivising segregation and home composting. After participating in a CSE training, Kothapally launched a focused campaign to ensure effective source segregation and home composting. Training provided to SHGs transformed waste management practices, with 70 per cent of wet waste now being composted at home — this has meant that only 30 per cent of the municipal wet waste now needs to be collected. Citizens have stopped littering, and the separation of dry and wet waste has not only minimised health issues but also generated revenues for the municipality from the sale of dry waste. Additionally, vehicle maintenance costs and fuel consumption have significantly reduced as only dry waste is collected.

Kothapally's initiatives earned it the 'Clean City Award (South Zone)' in 2022 for municipalities having less than 15,000 people. The transformation of this municipality highlights how capacity building and citizen engagement can lead to sustainable and efficient waste management.

Yellandu has a population of around 40,000. Under SBM 2.0, the city has initiated citizen engagement campaigns focusing on source segregation, home composting and reducing plastic usage. Efforts to tackle littering and burning of waste have also gained momentum. After receiving training from CSE, Yellandu strengthened its waste management systems by emphasising on decentralised waste processing and on implementing effective policies. These measures have enhanced the segregation and processing of solid waste, while also promoting alternatives to plastics. Revenue generation from waste processing, particularly from the segregation of dry and wet waste, has become a vital aspect of Yellandu's waste management strategy. Through community involvement and strengthened waste processing mechanisms, Yellandu has set an example for other urban local bodies striving for cleaner and greener cities.

The CSE training played a pivotal role in raising the standards of waste management operations in the city, making it more sustainable and efficient.

#### Manikonda Municipality HYDERABAD DISTRICT

Manikonda, a bustling urban locality near Hyderabad, has a growing population and generates a significant volume of waste daily. Under SBM 2.0, the city has undertaken several initiatives to improve waste management and environmental sustainability. Citizen engagement campaigns have been rolled out to promote source segregation, home composting, and discourage littering and waste burning. Efforts have also been made to enhance compliance through user charge collection and penalties for non-compliance.

After receiving training from CSE, Manikonda has strengthened its waste management strategies. The city has integrated waste pickers, urban poor, and self-help groups into its operations, creating livelihood opportunities while improving waste collection and segregation. Policy reforms such as amending byelaws to incentivise segregation, home composting, and compliance from bulk waste generators have been implemented. Institutional development efforts, such as preparing a City Sanitation and Waste Action Plan (CSWAP) and enhancing grievance redressal systems, have streamlined operations. These measures, combined with revenue generation from processing wet and dry waste, are transforming Manikonda into a model for sustainable urban waste management.

Manikonda has introduced innovative solutions such as processing floral waste into compost and incense sticks, and installing machinery to manage plastics and other non-recyclable waste.



#### Ameenpur Municipality SANGAREDDY DISTRICT

Ameenpur is a fast-developing municipality in Telangana. As part of its initiatives under SBM 2.0, the city has focused on citizens' engagement by conducting campaigns to promote source segregation and home composting, and discourage littering and wasteburning. Efforts have also been directed toward ensuring compliance from waste generators through the collection of user charges and penalties. After attending the training by CSE, Ameenpur has strengthened its waste management strategies. The city has integrated waste pickers, urban poor, and self-help groups into its waste collection and segregation processes, creating livelihood opportunities while enhancing waste management efficiency. Door-to-door monitoring systems have been implemented to ensure effective waste collection and segregation. Technological innovations for managing wet and dry waste have been introduced, enabling better resource recovery. These comprehensive measures have positioned Ameenpur as a proactive municipality in achieving sustainable urban waste management.

Institutional development efforts, including the preparation of a City Sanitation and Waste Action Plan (CSWAP) and improved grievance redressal mechanisms. have streamlined operations and increased citizen participation in Ameenpur.

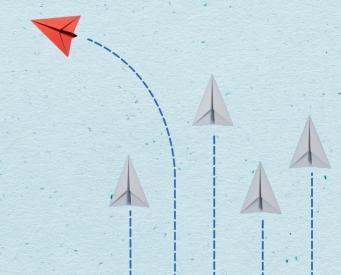


#### Turkayamjal Municipality RANGAREDDY DISTRICT

Turkayamjal, a growing municipality in Telangana, has actively worked under SBM 2.0 to engage citizens in campaigns promoting source segregation, home composting, and discouraging littering and burning of waste. Efforts to improve waste collection, transportation and treatment operations have been central to its progress. After attending the CSE training, Turkayamjal has observed a transformation in its waste management practices. Household waste collection mechanisms have been made more efficient. leading to the elimination of garbage vulnerable points (GVPs). Comprehensive training sessions for sanitation workers have enhanced their skills and operational efficiency. These initiatives culminated in Turkayamjal securing the third rank in Swachh Survekshan 2022.

Additionally, the city has introduced creative waste-to-art projects, repurposing scrap iron, old auto-rickshaws, oil tanks and water bottles. These initiatives have not only fostered community engagement, but have also demonstrated sustainable practices.

With insights gained from CSE's training, Turkayamjal has developed a more effective, eco-conscious, and innovative approach to waste management, setting an example for other municipalities.



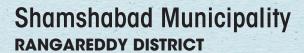


#### Husnabad Municipality SIDDIPET DISTRICT

Under SBM 2.0, Husnabad has launched citizen engagement campaigns to promote source segregation, home composting, and responsible waste disposal. It has also implemented policy reforms, encouraging compliance from waste generators through user charges and penalties. The integration of waste pickers and self-help groups has further strengthened its waste management ecosystem.

After attending a training programme conducted by CSE, Husnabad achieved significant improvements in its waste management practices. Wet waste is now transported to compost yards to create fertiliser, while dry waste is sent to a dry resource collection centre (DRCC) for recycling. The town has also embraced innovative practices such as repurposing plastic bottles to create a boat and establishing an RRR (Reduce, Reuse, Recycle) center to enhance sustainability. These efforts have not only reduced environmental pollution and the financial burden of the municipality, but have also brought visible changes in Husnabad's cleanliness and ecological health.

Rate of source segregation in Husnabad increased from 5 to 32 per cent, thanks to intensive educational campaigns involving public representatives who helped households understand the segregation process.



Shamshabad has initiated citizen engagement campaigns to promote source segregation, home composting, and compliance by waste generators through penalties and user charges. Livelihood opportunities have been created by integrating self-help groups and waste pickers into waste management operations. Following CSE's training programme, Shamshabad has implemented transformative initiatives. 'Nagara Deepikas' from self-help groups have been appointed in each of the 25 wards to monitor door-to-door waste collection. Swachh auto tippers have been deployed to ensure that the dry, wet, and hazardous wastes were separated and transported to designated processing facilities. The profiling management skills acquired during the training enhanced the municipality's efficiency, making a significant impact on operations. To tackle construction and demolition (C&D) waste, Shamshabad established a control room at the ULB level and formed clusters for dedicated collection. Collected waste is reused for construction and filling low-lying areas.

Shamshabad is exploring Extended Producer Responsibility (EPR) practices and aims to further strengthen its waste management systems through additional training. Narsingi has amended its bye-laws to incentivise segregation and home composting, ensuring compliance among bulk waste generators and improving waste management operations.

#### Narsingi Municipality RANGAREDDY DISTRICT

Narsingi, near Hyderabad, has been scaling up its waste management practices to cater to its growing population and resultantly, increasing waste generation. Under SBM 2.0, the city has focused on citizen engagement campaigns promoting source segregation, home composting, and anti-littering initiatives. After participating in CSE's training programme, Narsingi received valuable insights into separating wet and dry waste, maintaining records, and processing waste efficiently. The city has implemented these learnings by ensuring that all waste is segregated at the source and transported to processing plants. Bulk waste generators and self-help groups have been made aware of proper waste management practices, contributing to the initiative's success. Garbage auto drivers have been trained to register and track waste at the Solid Waste Management Center, enhancing accountability and efficiency. These initiatives have positioned Narsingi as a model municipality, demonstrating the impact of well-executed waste management policies and community-driven efforts.



Siddipet's initiatives towards waste management have yielded impressive results — the town has earned Swachh Survekshan awards in both 2022 and 2023, a testament to its commitment to sustainable waste management and its ability to translate learning into impactful action.

## Siddipet Municipal Corporation SIDDIPET DISTRICT

After attending a training conducted by CSE in December 2022, Siddipet has strengthened its institutional mechanisms for waste management. Under SBM 2.0, the city launched extensive citizen engagement campaigns promoting source segregation and home composting, and discouraging littering and anti-burning practices. By integrating waste pickers and self-help groups into its operations, Siddipet has also generated livelihoods while enforcing compliance through user charges and penalties. The city has amended its bye-laws to incentivise segregation and home composting, laying a solid foundation for policy reforms.

The CSE training has enhanced the municipality's understanding of handling hazardous waste, accident prevention and safety protocols, ensuring a systematic and safer approach to waste collection, transportation, treatment and disposal. Leveraging the knowledge gained, the city has optimised its solid waste management systems, integrating innovative technologies to process dry, wet, and hazardous waste streams effectively.



Officials from Nagaram municipality have attended CSE's training sessions which have helped them plan out the steps to improve composting of the local market's vegetable waste. This has led to revenue generation along with fulfillment of the SBM mandate.

#### Nagaram Municipality MEDCHAL MALKAJGIRI DISTRICT

Nagaram, formally known as Naagavaram, is a suburb of Hyderabad. The town is famous for its Sri Ramalingeshwara Swami Temple. Under SBM 2.0, the municipality had made a robust CSWAP plan. Citizens' engagement in SWM has improved through campaigns on source segregation, home composting, anti-littering and ban on burning of waste. The municipality has improved livelihood generation by integrating self-help groups. Systems for ensuring compliance for waste generators, collection of user charges and penalties have also been strengthened.

## Ghatkesar Municipality MEDCHAL MALKAJGIRI DISTRICT

Ghatkesar Municipality, formed in 2018 with three villages of Ghatkesar, NFC Nagar and Kondapur, has a population of over 35,000. The municipality generates approximately 18 tonne of municipal solid waste in a day, of which five-six tonne consists of dry waste. Under SBM 2.0, Ghatkesar has made significant progress in solid waste management through various initiatives, including awareness campaigns on waste segregation, composting and sustainable practices. The capacity building support from CSE has helped the municipality integrate self-help groups into the waste management process, empowering them to play an active role.

One of the notable outcomes of Ghakesar's efforts has been the 'Waste to Wonder' activity during Swachh Survekshan 2023, where an Eco-Sustainable Thar Plastic House was constructed in collaboration with SHG members





CSE's training has strengthened Suryapet's waste quantification methods and sanitation management and monitoring practices, using mobile apps. These efforts have helped Suryapet achieve ODF++ certification, improve its Garbage-Free City rating, and perform better in Swachh Survekshan rankings.

#### Survapet Municipality Survapet District

Suryapet, known as the 'Gateway to Telangana', has a population of 156,382. Established in 1952 as a Grade III municipality, it has since been upgraded to Grade I. The city is a commercial centre, and also boasts a rich historical legacy shaped by the Chalukyas, Kakatiyas and Nizams. Under SBM 2.0, a plastic waste management unit has been set up at the Jamuna Nagar Solid Waste Management Plant — this has positioned the city as a pioneer in recycling plastic waste into reusable products like bricks, tiles and acupressure mats.

With capacity-building support from CSE, the city has enhanced organic waste processing through vermicomposting and windrow composting, supported by door-to-door segregation and public participation. Waste collection has been modernised with GIS-based route mapping and GPS-tracked vehicles, ensuring efficient wet, dry, sanitary and hazardous waste management.



#### Adibatla Municipal Corporation RANGAREDDY DISTRICT

Adibatla, an industrial city and a prominent sports hub, has a population of approximately 22,589 and generates over 10 tonne of municipal solid waste daily. Under SBM 2.0, the city has undertaken several reforms to improve its solid waste management system, focusing on enhancing infrastructure for waste collection, processing and disposal, alongside capacity building for municipal staff and citizens.

Following the training conducted by CSE, the Adibatla Municipal Corporation (AMC) has made significant strides in integrating informal waste pickers into the formal waste management system. The municipality conducted an extensive mapping of waste pickers, recognising their potential, and has worked to organise them into cooperatives. This collaboration between the municipal government and the waste pickers' cooperatives has become a successful model. The city has also strengthened initiatives to engage citizens in waste segregation at the source, ensuring that the treatment and processing units operate more efficiently to generate wealth from waste.

The Adibatla Municipal
Corporation has leveraged
SBM 2.0 support to enhance its
micro-composting and material
recovery facilities and establish
its first biogas plant





#### Toopran Municipality MEDAK DISTRICT

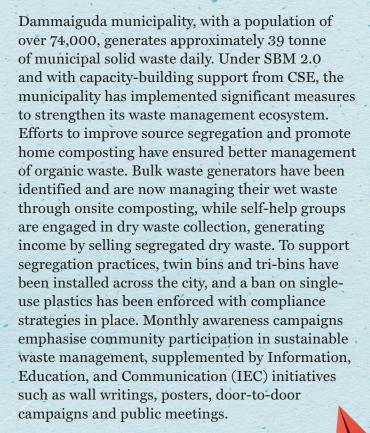
Toopran municipality, established in 2019, is a rapidly growing city in Telangana, primarily known for its agricultural significance. With a population of around 28,000, the city generates more than 10 tonne of municipal solid waste daily. Under SBM 2.0 and with capacity-building support from the Telangana government and CSE, the municipality has implemented a range of reforms to strengthen its solid waste management system. It operates 10 swachh autos and two commercial collection tractors, ensuring 100 per cent door-to-door waste collection in a segregated manner. Organic waste is processed through windrow composting, while bulk waste generators manage their waste through onsite composting. A dedicated tractor collects dry waste from commercial establishments.

The municipality has taken steps to integrate informal waste pickers into the formal waste management system by organising them into government-recognised cooperatives. To promote behavior change and encourage waste segregation at source, the municipality has launched several initiatives targeting both citizens and SHG members.

Toopran plans to collaborate with self-help groups (SHGs) to handle dry waste recycling, aiming to generate revenue for the municipality and create employment opportunities for SHG members.



# Dammaiguda Municipality MEDCHAL MALKAJGIRI DISTRICT



With training and role-playing exercises for informal workers and materials provided by CSE to train sanitation workers, including segregation guides, the city has fostered behavioral change. Sanitation and informal workers are also regularly felicitated for their contribution, creating a sense of pride and motivation.



#### Mahabubnagar Municipality MAHABUBNAGAR DISTRICT

Mahabubnagar Municipality, located in Telangana, covers an area of 98.64 square kilometers and has a population of approximately 217,143. Generating about 107 metric tonnes of waste daily, the city holds historical importance, being home to the famous Golconda mine, known for the Kohinoor diamond, and a range of ancient religious and heritage sites that reflect its rich cultural legacy.

Under SBM 2.0, Mahabubnagar has implemented effective waste management systems across its 49 wards. Door-to-door waste collection ensures timely removal of garbage, reducing accumulation in public spaces. Citizens are encouraged to segregate waste at the source, which is then processed or recycled to reduce landfill dependence. The municipality has also developed essential infrastructure, including garbage bins, transfer stations, and composting facilities, to support these efforts.

Following capacity-building training by CSE, Mahabubnagar has intensified its focus on public engagement and sustainable practices. Awareness campaigns educate residents on waste segregation and cleanliness, fostering a sense of responsibility among citizens. Regular inspections and penalties for improper waste disposal have improved compliance. Special cleaning drives during cultural and religious events ensure hygiene in high-footfall areas. Through these measures, the municipality is creating a cleaner, greener environment while setting an example in urban sanitation and sustainability.

The municipality has also developed essential infrastructure, including garbage bins, transfer stations, and composting facilities, to support the efforts under SBM 2.0.



Kompally Municipality, situated in Telangana, serves a population of approximately 35,000 and generates around 20 metric tonnes of waste daily. The town's commitment to effective waste management aligns with its geography and community needs, aiming to enhance urban cleanliness and sustainability.

Under the Swachh Bharat Mission 2.0, Kompally has implemented key initiatives such as constructing public toilets, ensuring efficient waste collection, promoting source segregation, and establishing a grievance redressal system to address citizen concerns swiftly. These measures have significantly improved sanitation standards and waste management efficiency.

With capacity-building support from CSE, Kompally Municipality has further refined its waste management practices. Enhanced focus on source segregation and public awareness has been complemented by the active involvement of Self-Help Groups (SHGs), fostering community participation. Sustainable practices like home composting have gained traction, improving waste processing and generating livelihood opportunities for local women.

A major milestone for Kompally is the successful remediation of its dumpsite, converting it into a functional transfer station. This transformation has minimized environmental hazards and streamlined waste transportation and processing. By integrating citizen engagement with innovative waste management practices, Kompally Municipality is setting a benchmark in urban sanitation and working toward a cleaner and more sustainable future.

In Kompally practices like home composting have gained traction, improving waste processing and generating livelihood opportunities for local women.





#### Peerzadiguda Municipality MEDCHAL MALKAJGIRI DISTRICT

Peerzadiguda Municipality, situated in Telangana, caters to a population of approximately 75,000 within an area of 10.5 square kilometers and generates around 100 metric tons of solid waste daily. As part of its initiatives under SBM 2.0, the municipality has introduced door-to-door waste collection and conducted extensive awareness campaigns to encourage source segregation among residents. Efforts have also focused on efficient processing and treatment of dry and wet waste, promoting-sustainable waste management practices.

After attending capacity-building training by CSE, Peerzadiguda significantly enhanced its waste management framework. The municipality launched targeted awareness drives on segregation, improved segregated waste collection, and promoted home composting. Onsite facilities for organic waste treatment were established, while bio-remediation efforts began to transform an existing dumpsite into a resource management model.

These initiatives have led to notable progress in Peerzadiguda's solid waste management, showcasing its dedication to fostering a cleaner and greener urban environment. The proactive measures taken by the municipality serve as a benchmark for other urban local bodies striving for sustainable waste management solutions.

In Peerzadiguda, facilities for organic waste treatment were established, while bioremediation efforts began to transform an existing dumpsite into a resource management model.

## Gundlapochampally Municipality MEDCHAL MALKAJGIRI DISTRICT

Gundlapochampally, with a population of 30,960, was established in 2018 by merging the gram panchayats of Kandlakoya, Baseregadhi, Gnanapur and Arkelaguda. Following CSE's training, the municipality has achieved greater efficiency in household waste collection, eliminated garbage-vulnerable points, and enhanced the skills of its sanitation workers. Community engagement has been boosted through innovative waste-to-art initiatives, promoting sustainability and fostering a sense of environmental responsibility among residents. These efforts have resulted in a cleaner and more eco-conscious waste management system.

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Looking ahead, Gundlapochampally is keen on receiving advanced training from CSE to further refine its waste management practices. Areas of focus include advanced waste segregation techniques, composting methods, sustainable recycling technologies, and capacity-building programmes for better community engagement. The municipality also aims to integrate digital tools to streamline its waste management operations.



#### **ANDAMAN & NICOBAR ISLANDS**

## Sri Vijaya Puram Municipal Council south Andaman district



The Sri Vijaya Puram Municipal Council (SVPMC), which governs the most densely populated urban area of the Andaman and Nicobar Islands with a population of 152,000, generates approximately 60-70 tonne of municipal solid waste daily. In response to these challenges, the SVPMC - under the flagship SBM 2.0 - has improved waste segregation and processing of its dry and wet waste. After participating in a training programme by CSE, SVPMC has further strengthened its approach to waste management. The council is revising its bye-laws to incorporate systemic and sustainable waste management practices that align with national and global best practices. Additionally, SVPMC is developing an advanced online portal to manage waste reporting, compliance and operations, specifically targeting bulk waste generators.

The Sri Vijaya Puram Municipal Council is prioritising Extended Producer Responsibility (EPR) to manage non-recyclable and low-value plastic waste in compliance with the Plastic Waste Management Rules.





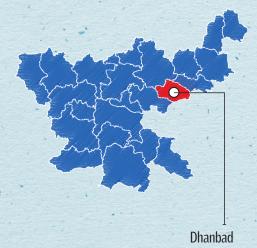
### **JHARKHAND**

# Dhanbad Municipal Corporation Phanbad District

Dhanbad, often referred to as the coal capital of India, boasts a population of approximately 1,415,000 and generates around 554 tonne of solid waste daily across its 51 wards. Despite its industrial prominence, the city has prioritised environmental sustainability by making notable strides under SBM 2.0.

The Dhanbad Municipal Corporation has focused on establishing a robust waste collection system, ensuring door-to-door waste pick-up in all the wards. Special emphasis has been placed on source segregation, supported by extensive public awareness campaigns. Additionally, the city has strengthened its waste processing infrastructure, with composting facilities for organic waste and material recovery facilities (MRFs) for recyclable waste, significantly reducing landfill dependency.

With guidance from CSE, Dhanbad has further improved its solid waste management practices. Enhanced Information, Education and Communication (IEC) activities have educated citizens on home composting and sustainable disposal methods, fostering widespread community participation. The integration of financial mechanisms, such as efficient user charge collection, has created a steady revenue stream to support waste management initiatives.



By focusing on decentralised waste solutions, financial stability and community engagement, Dhanbad is progressing toward becoming a cleaner, greener city and setting an example for urban sustainability in industrial hubs across India.



### **MEGHALAYA**

# Shillong Municipal Board EAST KHASI HILLS DISTRICT

Shillong, the capital and largest city of Meghalaya, is often referred to as the 'Scotland of the East'. Home to over 500,000 residents, the Greater Shillong area consists of 106 Rangbahshnongs or autonomous councils, collectively generating nearly 200 tonne per day (TPD) of municipal solid waste. The Shillong Municipal Board oversees waste management in the region and has demonstrated proactive leadership in implementing SBM 2.0 initiatives.

Officials from the Board have participated in CSE's training programmes, gaining valuable insights into sustainable waste management practices. Equipped with this knowledge, the city has established a comprehensive system to ensure the daily collection of household and commercial waste, promoting cleanliness and efficiency. Shillong has also emerged as a leader in waste remediation, particularly through systematic efforts at the Martem dumpsite, setting a benchmark in environmental conservation.

Recognising the value of inclusive waste management, the ULB has integrated the informal waste sector into its operations, providing waste pickers access to resources during door-to-door collection and at disposal sites.

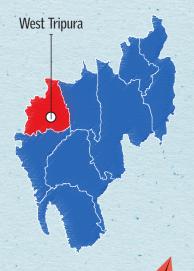
# Baghmara Town Board south GARO HILLS DISTRICT

Baghmara is the district headquarters of South Garo Hills district in Meghalaya. With a small population and minimal commercialisation, Baghmara's efforts under SBM 2.0 have been focused on improving waste management while preserving its pristine environment.

Proactive measures have been initiated by the Town Board. Representatives from the ULB attended CSE's training programme, gaining valuable insights into sustainable waste management practices. Following the training, Baghmara launched intensive awareness campaigns to educate residents about the importance of source segregation. These campaigns have significantly improved household-level segregation practices, laying the foundation for more effective waste processing and recycling initiatives. The commitment of Baghmara's administration reflects the town's determination to balance development with environmental conservation.

Following the training conducted by CSE, Baghmara launched intensive awareness campaigns to educate residents about the importance of source segregation.





The integration of self-help groups (SHGs) into waste collection and processing has been transformative, enabling the city to enhance door-to-door collection efficiency and ensure compliance with waste management policies.

### **TRIPURA**

# Agartala Municipal Corporation WEST TRIPURA DISTRICT

Agartala, the capital of Tripura, has a population of approximately 522,613 and generates an estimated 238 tonne of solid waste daily across its 51 wards. Known for its rich cultural heritage and picturesque landscapes, the city has leveraged SBM 2.0 to advance its solid waste management practices.

Under the Mission, Agartala has implemented systematic door-to-door waste collection across all wards, accompanied by initiatives to eliminate garbage vulnerable points (GVPs). The city has also established material recovery facilities (MRFs) and composting centers to process dry and wet waste, significantly reducing its reliance on landfills. The ULB has introduced strict guidelines to ensure segregation at source and has conducted regular cleanliness drives to maintain hygiene standards.

With capacity-building support from CSE, Agartala has intensified its Information, Education, and Communication (IEC) campaigns, fostering public awareness about the importance of waste segregation and sustainable disposal practices.



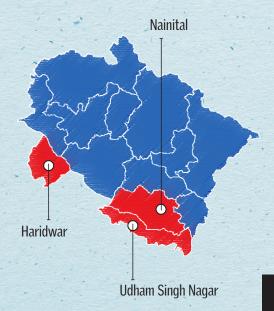
### UTTARAKHAND

# Haridwar Nagar Nigam

Haridwar, located on the banks of the river Ganga in the Garhwal region, is one of India's seven holiest cities. As per the 2011 Census, Haridwar had a population of 1,890,422. According to Haridwar Municipal Corporation, the city generates an average of 150-200 metric tonne (MT) of waste daily, which increases to nearly 300 MT during events like the Ardh Kumbh Mela due to a surge in the floating population.

Under SBM 2.0, Haridwar has made significant progress in solid waste management with initiatives such as awareness campaigns, source segregation, segregated waste collection, and the establishment of material recovery facilities (MRFs) and organic waste treatment plants.

After participating in CSE's onsite training, the Haridwar Nagar Nigam enhanced its door-to-door waste collection efficiency, implemented user charge collection, and imposed penalties on the use of single-use plastics (SUPs). The city's efforts reflect its commitment to sustainable waste management, particularly as a riverine city of cultural and spiritual significance.



Measures initiated by Haridwar have led to a reduction in waste generation, improved air quality with decreased particulate matter, enhanced soil fertility, and better land use practices.





# Landhaura Municipality HARIDWAR DISTRICT

Landhaura, a historic town in Uttarakhand's Haridwar district, is home to approximately 29,000 residents and holds cultural significance due to its proximity to the holy city of Haridwar. As a gateway for pilgrims and tourists, the town faces considerable challenges in managing waste, particularly during peak seasons when the footfall increases significantly.

Aligned with SBM 2.0 and state-level initiatives, Landhaura is part of the Roorkee Cluster, which houses a regional solid waste management facility. This facility includes composting units for organic waste, systems for recovering recyclables, and a sanitary landfill for managing inert and non-recyclable materials. The regional project aims to streamline waste processing while minimising environmental impacts.

With support from CSE, municipal authorities and stakeholders have been equipped with the knowledge and tools to strengthen their waste management framework. These initiatives have enabled Landhaura to make significant progress towards creating a cleaner, more sustainable urban environment.

Landhaura has taken additional measures to enhance its waste management system. Efforts are focused on encouraging residents to adopt source segregation practices, promoting composting for organic waste, and fostering a culture of reducing, reusing and recycling.



# Haldwani Municipality

Haldwani, located at the base of the Himalaya in Uttarakhand, serves a population of approximately 372,000 and generates 131 tonne of solid waste daily. As a key urban center in the region, Haldwani has made a lot progress in solid waste management under SBM 2.0, adopting innovative, inclusive and community-driven approaches.

With capacity-building support from CSE, Haldwani has introduced transformative initiatives to improve waste collection and financial sustainability. The ULB incorporated 56 self-help groups (SHGs), collectively known as 'Bani Sena', into its operations across 60 wards. Each SHG, consisting of eight-nine members, is tasked with improving door-to-door waste collection and increasing user fee recovery.

In a groundbreaking move, the ULB agreed to allocate a part of the user fees collected to the Bani Sena, providing financial incentives and empowering these groups to perform effectively. This initiative not only ensures better service delivery but also promotes financial sustainability while fostering a sense of ownership and responsibility within the community. Haldwani's innovative model demonstrates how inclusive waste management practices can drive both environmental and social transformation.

Haldwani's Bani Sena initiative, focused on improving door-to-door waste collection and increasing user fee recovery, has significantly enhanced waste management efficiency and community participation.



# Rudrapur Nagar Nigam udham singh nagar district

Rudrapur, located in the Terai region of Uttarakhand, has a population of approximately 198,000 and generates around 110 tonne of solid waste daily. Known for its progressive outlook, Rudrapur has been actively working to enhance its waste management practices under SBM 2.0.

With capacity-building support from CSE, the ULB has implemented significant improvements in its solid waste management system. Door-to-door waste collection has been streamlined across all wards, increasing community participation and ensuring better compliance from households and businesses. In addition, Rudrapur has focused on boosting its waste processing capabilities by adopting sustainable practices for managing organic and recyclable waste. These targeted interventions have not only improved the city's overall waste management system, but also set a benchmark for other urban local bodies in Uttarakhand.

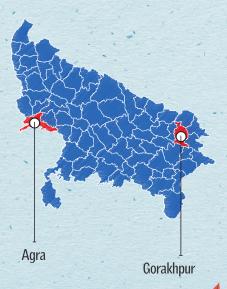
Rudrapur has upgraded its waste transportation infrastructure, enabling efficient movement of waste from collection points to processing facilities.



# Agra Municipal Corporation AGRA DISTRICT

Agra, a historic city on the banks of the Yamuna in Uttar Pradesh, is home to iconic landmarks including the Taj Mahal, a UNESCO World Heritage Site and one of the New Seven Wonders of the World. Spanning 120 sq km, the city has a municipal population of 1.58 million and a floating population of 0.3 million. Agra attracts about 1.15 million tourists annually. The city is also synonymous with the Indian sweetmeat called petha and a thriving leather footwear industry.

Under the Agra Smart City Limited project, the city has undertaken initiatives like source segregation, segregated waste collection, decentralised waste processing, setting up of material recovery facilities (MRFs), and dumpsite remediation. Awareness campaigns have targeted households, businesses and institutions.



Following CSE's training and its partnership as a 'Zero Waste City', Agra has implemented specialised waste management systems. The waste from the pethamaking industry is being diverted to gaushalas (cow shelters) as cattle feed, while footwear waste is being repurposed for useful applications and energy recovery.

# Gorakhpur Municipal Corporation GORAKHPUR DISTRICT

Gorakhpur lies along the banks of the Rapti river and houses a population of nearly one million. Under SBM 2.0, the Gorakhpur Municipal Corporation (GMC) has made major investments in waste management infrastructure, focusing on enhancing collection and transportation facilities.

GMC has identified eight distinct waste streams and is integrating them into workable business models to maximise efficiency and sustainability. After attending capacity-building training sessions organised by CSE, GMC has developed a deeper understanding of the value chain for different waste streams, enabling more effective management. Additionally, it is investing in creating a learning and experience center at the facility to promote the concept of a circular economy. These proactive measures are positioning Gorakhpur as a leader in integrated and sustainable urban waste management practices.

One of the key initiatives of GMC is the establishment of an integrated waste processing facility at Suthani village, which will serve Gorakhpur and eight nearby ULBs.

# SECTION II The Organisations

With the knowledge and guidance provided by CSE, Northern Railways continues to lead by example, fostering community participation and ensuring environmental responsibility within its extensive network.

### DELHI

#### **Northern Railways**

Indian Railways is a vital lifeline connecting the nation. Northern Railway, the largest zone in terms of route kilometers under Indian Railways, is taking proactive steps toward sustainable solid waste management and has implemented several impactful initiatives with capacity-building support from CSE.

A major milestone has been the development of a model zero-waste railway station and colony in Varanasi. Completed infrastructure includes a material recovery facility (MRF) and composting shed. A microcomposting plant in AEN Colony processes organic waste on-site, producing nutrient-rich compost, reducing landfill dependency, and promoting circularity.

A focused effort has been made to promote waste segregation at source, with all concerned authorities advised to prioritise its implementation across railway colonies. The S P Marg and San Martin Marg railway colonies in Delhi have been identified as models for achieving zero-waste practices. Initiatives include converting a dhalao at S P Marg into an MRF and composting unit, door-to-door awareness drives, and plans to establish composting modules, leaf composters and RRR centers. In the New Delhi Railway Station area, Northern Railway has piloted a waste-to-energy plant as well, converting municipal solid waste into energy in an environmentally friendly manner.

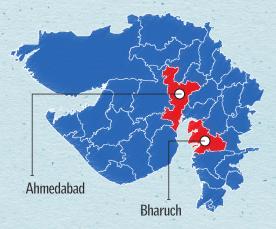
# GOA Goa Waste Management Corporation (GWMC)

The Goa Waste Management Corporation (GWMC) has been instrumental in addressing Goa's escalating waste disposal challenges by implementing sustainable and efficient solid waste management systems. Established by the state government, GWMC focuses on reducing environmental pollution, promoting recycling, and aligning its initiatives with SBM 2.0 mandate. The Corporation oversees the collection, segregation, processing and scientific disposal of solid waste, with an emphasis on minimising the ecological footprint of waste.

GWMC continues to innovate and improve its waste management strategies, focusing on enhancing source segregation, developing state-of-the-art waste processing infrastructure, and creating sustainable models for waste reduction. Through consistent efforts, the Corporation aims to transform Goa into a model state for responsible and circular waste management, contributing to a cleaner and greener future.

The CSE training has enabled GWMC to take proactive measures to formalise the integration of the informal scrap sector into institutionalised waste management systems – this has strengthened the waste value chain, ensuring better efficiency and inclusivity.





FSSF has been working in nine states on issues such as climate-resilient agriculture, soil health improvement, solid waste management etc. To support the implementation of SBM 2.0 and promote sustainable waste management practices, FSSF has taken several initiatives in collaboration with cities and the community.

### **GUJARAT**

# Farmbridge Social Support Foundation

Farmbridge Social Support Foundation (FSSF) is a non-profit, with a vision of building sustainable communities and livelihoods, and is focused on climate change adaptation and climate risk mitigation.

FSSF has organised a waste collection drive in Bharuch, in which six categories of waste were identified for collection; these wastes are typically not picked up by local waste pickers (pastiwalas). The Foundation has used the understanding gained through CSE's trainings to equip local schools with the knowledge of waste segregation and disposal. Teachers and students have been trained on best practices.

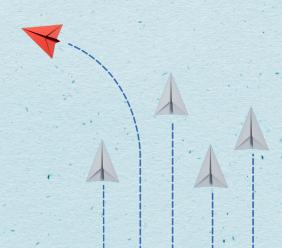
FSSF has also set up five designated collection points in different locations and promoted them on social media, inviting people to drop off waste collected during their household cleaning of homes on Diwali. The waste thus collected was segregated, aggregated and sent to certified recyclers for proper processing, thus ensuring nothing goes to the landfill.

# VIKAS – Centre for Development

Following the training offered by CSE, VIKAS – a civil society organisation — conducted capacity building sessions for its on-ground teams to enhance their skills in Information, Education, and Communication (IEC) and Behavior Change Communication (BCC). These initiatives have been instrumental in fostering community participation and creating awareness about sustainable waste practices. Building on these learnings, the team has successfully advocated for additional waste collection vehicles in under-served, migrant-populated areas, ensuring efficient waste collection in areas where marginalised communities live.

Urban local bodies (ULBs) across Gujarat have been guided to improve SWM services by integrating practical strategies gained during the programme. Citizen-driven waste management initiatives have been started in rural Gujarat, addressing the challenges in industrialised villages and enhancing SWM services for migrant populations in them. By empowering local residents through capacity-building programmes, VIKAS promotes waste segregation and systemic change for scientific waste disposal.

The CSE training has been pivotal in shaping these efforts, enabling us to create sustainable, community-driven waste management systems aligned with SBM 2.0's goals









# The CSE training has helped SAAHAS team members gaining valuable knowledge on decentralised waste management systems, municipal bye-laws, and innovative Information, Education, and Communication (IEC) strategies.

### HARYANA SAAHAS

SAAHAS, a pioneer in promoting circular economy principles, has been at the forefront of sustainable solid waste management for over 23 years. With a team of over 300 professionals, the organisation operates across 13 states, addressing waste challenges in urban, peri-urban, and rural communities. Driven by its mission to create landfill-free cities, SAAHAS focuses on the 3Rs—Reduce, Reuse, Recycle—and advocates for efficient source segregation of biodegradable, non-biodegradable, and domestic hazardous waste to enable circular material flows while generating green jobs.

Collaborating closely with local administrative bodies, government agencies and social enterprises and aligned with SBM 2.0, SAAHAS works by identifying key challenges, piloting solutions, and scaling up successful models. The organisation has implemented impactful interventions across cities like Jorhat, Panna, Udupi, Bengaluru and Gurugram, while also addressing complex waste streams such as construction and demolition (C&D) waste, e-waste, textiles, and household items like broken furniture and shoes.

SAAHAS's collaboration with CSE has enhanced its effectiveness. The insights have enabled SAAHAS to strengthen its projects and provide impactful and upscaled solutions

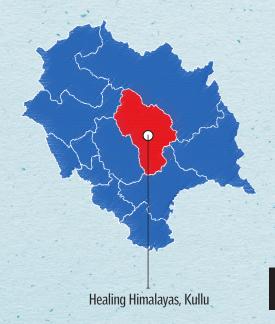


### **HIMACHAL PRADESH**

### **Healing Himalayas**

Healing Himalayas, founded in 2016, is dedicated to preserving the Himalayan region's fragile ecosystem and cultural heritage. The organisation emerged in response to the environmental degradation caused by increasing tourism and human activity in the mountains, and it focuses on waste management, community awareness and sustainable practices. It has worked to improve waste segregation at source by educating local communities, tourists and hotel operators on proper waste management practices. Collaborating with local communities, government authorities, local panchayats and hotel associations, it has strengthened efforts to make the region garbage-free.

Healing Himalayas conducts year-round cleanup drives and builds material recovery facilities (MRFs) to ensure proper processing of recyclable materials, while discouraging harmful practices like waste burning. Over the past more than eight years, with the help of more than 4,000 volunteers in 1,000-plus clean-up drives, Healing Himalayas has removed over 1,633 tonne of waste through decentralised MRFs across four districts.



With support from CSE, the employees of Healing Himalayas have gained enhanced knowledge of solid waste management, enabling the implementation of several key initiatives to improve waste management practices in the region.



Over the past decade, more than 400,000 individuals have been engaged through IEC initiatives, preventing over 8,000 metric tonne of waste from polluting eco-sensitive zones and creating livelihood opportunities for more than 1,200 people.

### **Waste Warriors Society (WWS)**

Waste Warriors Society (WWS) is a non-profit dedicated to driving systemic change in addressing the waste management crisis in the Himalayan region. Its work lies at the intersection of climate change, biodiversity conservation and informal livelihoods, emphasising behavioral change in communities. With a team of over 200 'Warriors' spread across Uttarakhand and Himachal Pradesh, efforts are focused on creating effective waste management solutions in urban, rural and eco-sensitive tourist areas.

WWS's work aligns closely with the objectives of SBM 2.0. Manish Sharma, assistant manager at WWS, says participation in the CSE training has substantially enhanced the organisation's understanding of municipal bye-laws, IEC, behavior change communications, and organic waste management, leading to implementation of impactful initiatives.

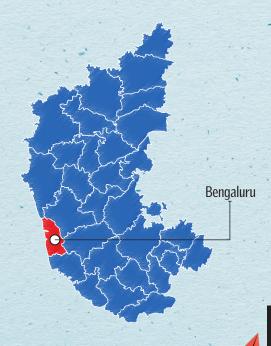


# Sri Sathya Sai Institute of Higher Medical Sciences

The Sri Sathya Sai Institute of Higher Medical Sciences is a 333-bed super-specialty hospital, offering high-end, tertiary medical care entirely free of cost. Recognising the environmental costs of healthcare operations, the Institute has proactively taken steps to ensure responsible solid waste management across its campus, which generates approximately 150 tonne of waste annually.

Following the training from CSE, the Institute has implemented a three-way waste segregation system at source, established in-house composting units, and developed a material recovery facility (MRF) for managing recyclable waste. Awareness sessions have become integral to its routine, encouraging staff and residents to adopt sustainable waste practices under the motto 'Our Waste is Our Responsibility'. Additionally, initiatives such as 'Bring Your Own Bag/Cutlery/Cup' have been introduced to promote the principles of Reduce, Reuse and Recycle while minimising waste generation.

The Institute has now taken the lead in advancing a 'Zero-Waste to Landfill' mission across all Sai Institutions, including a university with four campuses, five hospitals, two ashrams, and multiple residential communities.



"The training by CSE gave us a holistic understanding of SWM challenges and empowered us to take decisive action. It instilled confidence to advocate for waste management as a priority within the Institute," says B Satish Chandra, senior managercentral stores, Sri Sathya Sai Institute of Higher Medical Sciences.







Initiatives have focused on source segregation, home composting, anti-littering, and anti-burning measures, while enforcement mechanisms such as penalties and user charges have been encouraged to ensure compliance

### **MAHARASHTRA**

# Seva Sahayog Foundation

Working with the Thane Municipal Corporation, Seva Sahayog Foundation has studied the city's waste management infrastructure and made a comprehensive plan to enhance the waste management system. Other organisations working in the waste sector have been brought into the fold; public awareness has been raised.

Awareness sessions have been conducted in schools and residential societies to educate citizens on three-level waste segregation. A solution-finding workshop was also organised – the outcomes of which were documented and submitted as a white paper to the municipal corporation. The systematic approach, shaped by training received at CSE, ensured that Information, Education and Communication (IEC) strategies were implemented effectively, fostering multi-stakeholder collaboration for long-term improvement.

Jaipur



# Malaviya National Institute of Technology (MNIT)

The Malaviya National Institute of Technology (MNIT) is a premier educational institution in Jaipur. With capacity-building support from CSE, MNIT has successfully integrated waste management principles into both its academic curriculum and community-focused initiatives.

Extending its role beyond academics, MNIT actively collaborates with ULBs under the Swachh Survekshan initiative. The institution's undergraduate students have engaged in creative awareness campaigns by designing eye-catching graffiti in public spaces on waste segregation, anti-littering, and cleanliness. Through these efforts, MNIT Jaipur demonstrates how academic institutions can play a key role in advancing sustainable urban practices.

MNIT has incorporated financial planning for SWM into its infrastructure planning course curriculum. This equips future engineers and planners with the necessary skills to design and implement financially viable, efficient waste management systems.







# CEE's initiatives include organising plastic and e-waste collection drives, promoting community and individual composting, and initiating composting of temple flower waste. By empowering women and youth as community champions, CEE has fostered ownership and responsibility for waste management practices.

### **UTTAR PRADESH**

### Centre for Environment Education (CEE) GREATER NOIDA

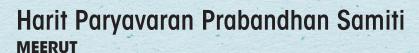
Centre for Environment Education (CEE), recognised as a Centre of Excellence under the Ministry of Environment, Forest and Climate Change, is a leading institution for environmental education and education for sustainable development (ESD). Headquartered in Ahmedabad, CEE is known for its innovative programmes, educational outreach, and field-based projects that demonstrate how education can drive sustainable environmental action.

Aligned with the objectives of SBM 2.0, CEE has been instrumental in advancing sustainable solid waste management practices in collaboration with local governments in cities like Delhi, Noida and Greater Noida. The organisation promotes source segregation, home composting and systemic reforms by engaging residential societies, schools, commercial establishments and local communities.

The training conducted by CSE has deepened the CEE team's understanding of behavior change communication, IEC strategies and municipal bye-laws, says Gurpreet Kaur, an SWM expert at CEE.

Key initiatives undertaken by CEE include targeted campaigns to curb littering and waste burning, integration of informal waste workers into formal systems, and empowerment of self-help groups for waste collection and processing. The organisation has also helped strengthen waste monitoring frameworks and grievance redressal mechanisms to ensure sustainable operations.





With capacity-building assistance from CSE and a comprehensive action plan, Harit Parayavaran Prabandhan Samiti has entered into an agreement with local bodies under SBM 2.0 to transform waste into a resource. The organisation has initiated an innovative exchange shop in Nagar Panchayat Daurala, which encourages citizens to turn in their waste in exchange for organic manure or steel utensils. This has brought about a positive behavioral shift, with people recognising the importance of managing their waste responsibly and preventing it from polluting the environment.

By managing waste through material recovery facilities (MRF), promoting plastic recycling, and producing organic manure, waste has been turned into a valuable source of income.





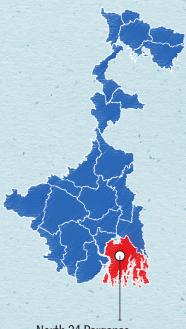


### **WEST BENGAL**

### Amra Susama Jalaprapat (ASJ)

Amra Susama Jalaprapat (ASJ), a non-profit organisation, has been actively working in the field of sustainable solid waste management, climate change and institutional strengthening of local self-governments since 2007. Operating across 13 districts of West Bengal, ASJ has been instrumental in supporting rural and urban local bodies, training institutes, and the State Urban Development Authority (SUDA) in achieving sustainable waste management goals. It has contributed towards preparing City Solid Waste Plans, conducting extensive capacity-building programmes, and establishing decentralised Integrated Solid Waste Management (ISWM) facilities. Its efforts focus on source segregation, waste reduction, social mobilisation, and building market linkages for processed waste products. It has helped introduce digital trackers and monitoring systems in waste collection vehicles to enhance efficiency and reporting mechanisms.

ASJ has been working to build capacity among coastal communities and rural administrations, helping them combat marine pollution and adopt climate-resilient waste management practices. ASJ is a member of CSE's coalition of coastal states, and the training provided by CSE has proved to be transformative for the organisation. According to co-founders Prasun Kanti Das and Maya Das, the training provided valuable insights into municipal bye-laws, organic waste management, and monitoring systems. These learnings have strengthened ASJ's ability to guide local entities toward circularity, sustainability and long-term environmental resilience.



North 24 Parganas

ASJ has been successfully managing solid waste at the 'Gangasagar Mela,' one of the largest holy fairs in West Bengal, for the past eight years, effectively handling millions of tonne of waste generated by pilgrims.

### BITAN Institute for Training, Awareness and Networking

BITAN Institute for Training, Awareness and Networking has established itself as a pivotal agency for advancing sustainable community living through innovative solid waste management solutions. Operating across 18 districts in West Bengal and eight in Tripura, BITAN collaborates with ULBs, gram panchayats and corporate and government partners to implement impactful initiatives aligned with SBM 2.0 mandates.

Collaborating with partners such as UNDP and the Skill Council for Green Jobs, BITAN has mobilised communities to adopt sustainable waste practices. Projects such as preparing Detailed Project Reports (DPRs) for 33 ULBs and City Sanitation Action Plans for 19 ULBs in Tripura and West Bengal have contributed to enhancing the SWM infrastructure and urban sanitation systems.

According to Sanatanu Bhowmick, programme director at BITAN, 10 employees have attended CSE's training on sustainable SWM, which provided key insights into municipal bye-laws, decentralised waste management systems, and IEC strategies, equipping BITAN's team to develop impactful and scalable solutions

Through its innovative and replicable interventions, BITAN has empowered governance structures to meet SBM 2.0 objectives effectively, creating cleaner and more resilient communities.





# Clean for Green Foundation NORTH 24 PARGANAS

Clean for Green Foundation is a community-based non-profit organisation dedicated to solid waste management, environmental sustainability and climate change resilience. With a team of over 100 members, it primarily works with rural populations, supporting gram panchayats and block panchayats in implementing the mandates of SBM Grameen.

In rural Bengal, challenges such as indiscriminate dumping, plastic pollution, and improper disposal of sanitary waste have posed significant health and environmental hazards. Despite grants from SBM Grameen, many waste management facilities have failed to sustain operations due to a lack of technical knowledge, skills and vision for creating a circular economy. Clean for Green Foundation has initiated an extensive Information, Education, and Communication (IEC) and Behavior Change Communication (BCC) campaign. Capacity-building programmes have been conducted for ground-level workers, especially focusing on training rural women and adolescent girls on waste segregation, plastic waste reduction, and proper disposal methods.

Through continuous engagement with block and district administrations, the Foundation has facilitated the establishment of fully functional integrated solid waste management units across 12 gram panchayats. These units prioritise source segregation, composting of organic waste, and sustainable management of solid waste. Additionally, the Panchayats have revised their bye-laws to introduce user fees for waste management services, ensuring financial sustainability. Plans are underway to implement a digital monitoring mechanism in waste collection vehicles to enhance operational efficiency.

According to founder director Firoz Ali Tarfadar, "the CSE training equipped the organisation with essential knowledge and skills, enabling the team to guide four block panchayats and 12 gram panchayats in establishing and operationalising integrated solid waste management facilities.

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# The Changemakers

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#### **Centre for Science and Environment**

41, Tughlakabad Institutional Area, New Delhi 110 062 Phone: 91-11-40616000 Fax: 91-11-29955879 E-mail: cse@cseindia.org Website: www.cseindia.org