आवासन और शहरी कार्य मंत्रालय
भारत सरकार
MINISTRY OF HOUSING AND
URBAN AFFAIRS
GOVERNMENT OF INDIA
सत्यमेव जयते

स्वच्छ भारत
एक कदम स्वच्छता की ओर

Tales From 75 Cities

JOURNEY OF SWACHHATA

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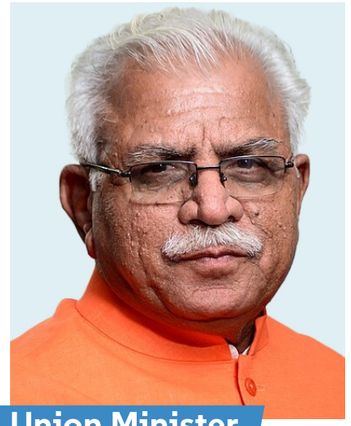
जनांदोलन की यह भावना स्वच्छ भारत मिशन की सफलता का आधार है। पहले शहरों में कचरा सड़कों पर होता था, गलियों में होता था, लेकिन अब घरों से न केवल वेस्ट कलेक्शन पर बल दिया जा रहा है बल्कि वेस्ट सेग्रीगेशन पर भी जोर है।

- श्री नरेंद्र मोदी
प्रधान मंत्री, भारत

Contents



Union Minister

The Swachh Bharat Mission (Urban) is a testament to India's commitment to creating cleaner, healthier, and more sustainable cities. It reflects the power of collective action, with cities of all sizes emerging as centres of innovation in sanitation and waste management. This compilation, 'Tales from 75 Cities: Journey of Swachhata', captures this spirit, showcasing how the Mission is driven by the people and for the people. While cities like Indore and Surat have become synonymous with cleanliness, the essence of the Swachh Bharat Mission lies in the efforts of countless others. From zero-waste models in slums to community-driven segregation systems and cutting-edge waste-to-energy plants, cities across India are innovating to address local challenges. This compendium highlights the diversity of these efforts, showing that the mission's impact reaches far beyond a few flagship cities. The leadership and community engagement featured in these stories are critical to achieving the goals of Swachhata. I commend all stakeholders for their contributions and encourage more cities to adopt and scale these solutions, reaffirming that every city, big or small, has a vital role in this transformative movement. Together, through the combined efforts of urban local bodies, citizens, and private partners, we are shaping remarkable transformations in urban sanitation.

Sh. Manohar Lal
Ministry of Housing
and Urban Affairs

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MINISTRY OF HOUSING AND
URBAN AFFAIRS
GOVERNMENT OF INDIA
सत्यमेव जयते

स्वच्छ भारत
एक कदम स्वच्छता की ओर

Minister of State

The Swachh Bharat Mission (Urban) is not only one of India's most ambitious efforts, but also a transformative initiative toward sustainable urbanization. It has evolved into a Jan Andolan, uniting cities, communities, and individuals in a shared goal of creating cleaner, healthier urban environments. The stories in this compendium, Tales from 75 Cities: Journey of Swachhata, reflect the innovation and collaboration that drive the mission's success. The wide range of interventions across both large and small cities demonstrates how we are advancing environmentally sustainable and socially inclusive models of Swachhata. I congratulate the States and Cities whose work has been featured in this collection. I am confident that these success stories will inspire other cities and towns to adopt these practices and further innovate in their own waste management and sanitation efforts. With continued collaboration, community participation, and shared responsibility, I am certain that we are well prepared to realise the collective goal of a Swachh Bharat.

Sh. Tokhan Sahu
Ministry of Housing
and Urban Affairs

Secretary

As our cities continue to grow, urban sanitation and solid waste management remain key priorities. The Swachh Bharat Mission has been instrumental in mobilising urban local bodies, citizens, and institutions to create cleaner, more sustainable cities. The stories in this compendium, Tales from 75 Cities: Journey of Swachhata, highlight how cities are adopting innovative solutions to address the challenges of waste management. These models not only showcase technical innovation but also underscore the importance of community engagement in creating sustainable urban solutions.

Partnerships between governments, citizens, and the private sector have been essential in driving these successes. I hope this compilation serves as both a guide and an inspiration for urban stakeholders striving to make a lasting impact under the Swachh Bharat Mission. I congratulate all those involved in these efforts and encourage more cities to follow these best practices as we continue on our journey towards a cleaner, healthier India.

Sh. Katikithala Srinivas

Ministry of Housing
and Urban Affairs

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MINISTRY OF HOUSING AND
URBAN AFFAIRS
GOVERNMENT OF INDIA
सत्यमेव जयते

स्वच्छ भारत
एक कदम स्वच्छता की ओर

Joint Secretary & National Mission Director

The Swachh Bharat Mission is a symbol of collective action, where urban local bodies, citizens, and private partners work together to achieve a cleaner, healthier India. The stories presented in this compendium, Tales from 75 Cities: Journey of Swachhata, celebrate the diversity of innovative waste management solutions being implemented across the country. They serve as a reminder that every city, regardless of size or resources, has the potential to drive meaningful change.

It is inspiring to see how cities have turned challenges into opportunities. These examples not only highlight the importance of community-driven solutions but also emphasise the role of public-private partnerships in delivering sustainable outcomes. These stories offer practical blueprints for replication, and it is my hope that cities across India will draw from these experiences, adapt them to their contexts, and continue contributing to the national mission of achieving sustainable urban sanitation.

Roopa Mishra

Swachh Bharat Mission,
Ministry of Housing and Urban Affairs

Foreword

This compendium presents an inspiring collection of 75 stories that highlight the transformation of cities through innovative approaches to solid waste management, used water management, and sanitation. From bustling metropolitan areas to smaller towns, it is remarkable to witness how cities are developing comprehensive and inventive solutions to address sanitation and waste management challenges, while driving significant changes in attitudes and practices towards cleanliness .

Together, these narratives show how collective efforts are fostering clean, and resilient cities, moving towards the realisation of a Swachh Bharat.

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URBAN AFFAIRS
GOVERNMENT OF INDIA
सत्यमेव जयते

स्वच्छ भारत
एक कदम स्वच्छता की ओर

Acknowledgement

The Tales from 75 Cities: Journey of Swachhata compendium marks a decade of progress under the Swachh Bharat Mission (SBM), a reflection of the collective efforts of individuals and organisations. We extend our heartfelt gratitude to the Ministry of Housing and Urban Affairs, Government of India, for its visionary leadership and continued support in steering the Swachh Bharat Mission. The unwavering commitment of State and Union Territory governments, municipal corporations, and urban local bodies has been crucial in driving sustainable sanitation and waste management practices across India.

We also acknowledge the invaluable contributions of our partners—USAID, GIZ India, NIUA, WASH Institute, ASCI, and CURE—whose expertise and dedication have been instrumental in documenting and showcasing the success stories featured in this compendium. Special thanks are also due to the researchers, writers, and designers who have worked tirelessly to bring these narratives together, transforming them into a meaningful and accessible collection.

Most importantly, we express our deepest appreciation to the Swachhagrahis, community leaders, and citizens whose tireless efforts have been pivotal in making our cities cleaner and healthier. Their stories of innovation, best practices, and unwavering commitment form the essence of this compendium. As we celebrate the achievements of the past decade, we look forward to continued progress and momentum towards a cleaner, greener India.

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एक कदम स्वच्छता की ओर

Solid Waste Manag ement

Panaji's 16-Way Waste Segregation Enhances Urban Sustainability

In 2020, the Corporation of the City of Panaji in Goa, in collaboration with Feedback Foundation and Ayya Waste Management, launched a 16-way waste segregation system. This bold initiative has transformed how the city manages its waste, reducing landfill pressure and fostering a circular economy. The journey began in 2002 with basic two-way segregation, later evolving to five-way segregation in 2008. However, the game-changing 16-way system, introduced in 2020, categorises dry waste into 16 streams, including paper, cardboard, plastics, metals, and e-waste. This advanced sorting ensures that minimal waste reaches landfills, turning waste into a resource instead of a burden.

The initiative thrives on active community involvement. Housing societies collect pre-segregated waste from households, which is further sorted into its 16 categories. High-value recyclables are sold to authorised agencies, generating additional income for the housing societies to support their operations. Wet waste is either composted on-site or collected daily by Corporation for centralised processing. Though the initial phase saw challenges in convincing communities to adopt the system, 33 housing societies have embraced it, with expansion plans for 130 societies.

Panaji's meticulous segregation has significantly reduced waste management costs and the load on the central Material Recovery Facility (MRF). It showcases how cities can improve waste management through a community-driven, resource-efficient model, setting a precedent for urban sustainability.

Guntur's Electric Autos Drive Waste Collection Sustainability

In Andhra Pradesh, Guntur Municipal Corporation has adopted an eco-friendly approach to waste management by deploying 220 electric autos for garbage collection. Supported by UNIDO and the Global Environment Facility (GEF) under the Sustainable Cities Integrated Pilot Approach (SCIAP) initiative, these electric vehicles are a green alternative to conventional diesel-powered garbage trucks, offering multiple environmental and social benefits.

Each electric auto is equipped with GPS tracking to enable real-time monitoring, ensuring efficient waste collection across Guntur's 159.46 square kilometres. This innovation reduces greenhouse gas emissions by replacing fuel-intensive vehicles with electric ones, which save over 711,000 litres of fuel annually. Over a 10-year period, this initiative will help cut approximately 21,000 tonnes of carbon emissions, addressing climate change while improving urban air quality.

Beyond environmental benefits, Guntur's initiative promotes inclusivity, empowering women drivers to join the workforce. The autos' smooth acceleration and automatic transmission make them more accessible for a diverse group of drivers. Furthermore, electric autos require lower maintenance and have a longer lifespan compared to traditional garbage trucks, making them cost-effective in the long run.

Guntur's electric autos are not only transforming waste collection practices but also creating economic and social benefits. The initiative represents a major step toward cleaner urban development and sets a benchmark for other cities aiming for sustainable waste management.

Rejuvenating Bhubaneswar's Old Town Through Waste Management

Bhubaneswar, the capital of Odisha, is celebrated as the "Temple City of India" for its rich cultural heritage and distinctive architecture. With over 700 ancient temples, including the Lingaraj, Brahmeswara, and Mukteswara Temples, Bhubaneswar's Old Town, or Ekamra Kshetra, is a testament to the city's historical and architectural significance.

However, rapid urbanisation and deteriorating infrastructure threatened this area's sanctity, with pollution, poor waste management, and modern encroachments diminishing its historic charm. The sacred water bodies like Bindu Sagar Lake were heavily polluted, while sanitation systems lagged behind the city's growing demands.

To preserve and enhance this heritage, in 2021, the Government of Odisha initiated a comprehensive revitalisation project focused on the sustainable development of Ekamra Kshetra. The initiative focused on restoring ancient temples and upgrading infrastructure to maintain cultural integrity along with promoting Heritage Walks to raise awareness, improving public amenities, and conserving sacred water bodies. Engaging local communities has been key, fostering a deeper connection to the area's history and conservation efforts. Infrastructure upgrades, like improved stormwater drainage, tackled frequent monsoon flooding. Community-driven beautification, including mural painting, added to the area's aesthetic value.

Additionally, Bhubaneswar Municipal Corporation introduced a decentralised waste management system involving Women Self-Help Groups (WSHGs), empowering local women to manage waste segregation and composting. This model turned previously neglected areas into green spaces, reduced open dumping, and improved overall sanitation.

Today, Bhubaneswar's Old Town serves as a model of how cultural preservation and modern urban planning can coexist. The project's holistic approach not only preserved the area's heritage but also empowered women, improved environmental conditions, and enhanced the quality of life for residents.

Kirtinagar's Benchmark in Hilly Region Waste Management

Nestled along the scenic banks of the Alaknanda River, Kirtinagar, Uttarakhand, is making remarkable strides in waste management. Faced with the unique environmental challenges of steep terrain, wildlife presence, and the logistical difficulties of transporting materials, the town's Waste Processing and Disposal Facility, operational since January 2023, offers innovative solutions to address environmental challenges unique to hilly regions.

This facility's journey began with a deep understanding of the region's distinct challenges, such as the stepwise cutting of steep terrain, material transportation hurdles, and the presence of wildlife. The project's aerobic system, pit-based composting technology, and Material Recovery Facility (MRF) are groundbreaking for hilly areas in Uttarakhand. The construction process was far from easy. Precise engineering and immense labour were required for stepwise cutting, and transporting materials—especially liner materials—through the rugged landscape was a significant logistical feat. The project team had to contend with recurring landslides, which necessitated constant monitoring and quick response measures. Additionally, sourcing water for construction and ensuring the safety of workers from wild animals added to the challenges. The scarcity of local labour forced the project to bring in workers from other regions. Despite these obstacles, the facility was completed in just seven months and became operational on January 11, 2023.

The facility uses aerobic composting pits and an MRF to process five tonnes of solid waste daily, overcoming landslides and steep gradients during construction. Adhering to the Municipal Solid Waste Rules 2016, it became the first such facility in Uttarakhand's hilly regions. Its success earned Kirtinagar a Silver Award at the 2024 Skoch Awards, addressing the town's waste management needs effectively.

Joshimath's Community-Driven Waste Management Success

Joshimath, Uttarakhand is a gateway to numerous Himalayan treks and sacred pilgrim sites like Badrinath and Hemkund Sahib. With a population of around 16,709 that swells to nearly half a million during the pilgrimage season, the town faced significant environmental challenges, particularly in managing plastic waste. Recognising the urgency, Nagar Palika Parishad Joshimath, with the support of the local community, in 2010, implemented an innovative Material Recovery Facility (MRF), transforming the town's waste into a resource.

The MRF collects, segregates, and compacts solid waste, a task made even more challenging by the town's rugged terrain. With a dedicated team of sanitation workers, the project has empowered the local community by offering stable employment and generating income from the sale of recyclable materials. Initially starting with seven sanitation workers earning Rs 250 per day, the team has since expanded, with each worker now earning Rs 550 per day, reflecting the success of the initiative.

Regular plastic waste collection and processing have fostered environmental consciousness among residents, drastically reducing litter. The revenue generated from selling recyclable materials has not only provided livelihoods for marginalised workers but also bolstered the municipality's funds.

Since December 2022, over 1.3 million kilograms of inorganic waste have been compacted and sold, generating more than 1 crore in income. The compactor machine, gifted by the Tourism Department, has played a vital role, processing up to 150 kilograms per bundle of plastic waste, helping maintain Joshimath's pristine environment and reducing litter. This initiative has earned the town prestigious awards, including the Chief Minister Nirmal Nagar Excellent Puraskar during 2010-2011 and 2016-2017. Today, Joshimath has become a model for waste-free towns.

Ayodhya's Holistic Approach to Waste Management

Ayodhya, a city steeped in religious significance, faced severe waste management challenges, from polluted water bodies like the Saryu River to a legacy waste site near the proposed Sita Lake. In response, the Ayodhya Nagar Nigam, in partnership with local organisations, initiated a multifaceted waste management programme focusing on sustainable practices and community involvement.

A key component of this initiative was the establishment of a Material Recovery Facility (MRF) to process plastic, metal, and wet waste. The MRF introduced innovative processes, including converting plastic into condensed slabs for furniture production and implementing wet waste composting. The Saryu Nandini Waste to Wealth Entrepreneurship programme further empowered local women to transform waste fabric into handicrafts and jewellery, creating sustainable livelihoods.

Restoration efforts extended to wetlands such as Lal Dighi and Samda Lake, which were revitalised through waste removal and bioremediation. Afforestation campaigns and collaborations with the Greater Mumbai Municipal Corporation and Indian Railways enhanced the city's overall environmental management.

As a result of these efforts, over 1,638 tonnes of waste were removed from the Saryu River, and 9,000 tonnes were recycled at the MRF. Ayodhya's holistic waste management strategy, which integrates modern technology with traditional practices, has not only improved the city's environmental health but also fostered community empowerment through innovative, sustainable solutions.

Dharamshala's Innovative Urban Waste Management Solutions

Nestled in the scenic hills of Himachal Pradesh, Dharamshala faced increasing waste challenges due to urban growth and tourism. By 2021, the Dharamshala Municipal Corporation launched an innovative approach to waste management, introducing several transformative interventions to address the city's pressing needs.

A key part of this transformation was the Clean Business Programme, which incentivised local businesses to adopt sustainable waste practices. Weekly training sessions and certifications encouraged businesses to segregate waste and reduce littering. Additionally, the Model Ward Programme (MWP) engaged local communities in managing waste more effectively.

The city also established a Material Recovery Facility (MRF) to sort and recycle waste and introduced the "Waste Under Arrest" programme at Lala Lajpat Rai District Correctional Home, engaging inmates in waste management activities while providing them with valuable skills.

These efforts have led to a 25 percent increase in waste segregation rates and a 30 percent reduction in road littering. The MRF recovered and recycled 100 metric tonnes of plastic, glass, paper, and metal, while the prison programme reduced waste sent to landfills by 40 percent.

Dharamshala's success demonstrates the power of community engagement, collaboration with stakeholders, and a multipronged approach to urban waste management. The city's innovative solutions have not only improved waste handling but also created economic incentives, setting a strong example for other urban areas to follow.

Varanasi's Circular Solutions Transforming Both Waste and Lives

In Varanasi, a groundbreaking transformation is underway in waste management, driven by the Varanasi Municipal Corporation in collaboration with partners like GIZ India and NTPC. At the heart of these efforts is the "Waste Solutions for Circular Economy" initiative, which brings decentralised and sustainable waste management practices to the forefront.

One key component is the establishment of Micro Composting Centres (MCCs) in local communities, which reduce waste at the source. In 2023, VMC inaugurated an MCC in Sigra Municipal Ward, processing 50 kilogram of organic waste daily into nutrient-rich compost. This community-driven initiative engages residents, fosters waste segregation, and closes the loop by using the compost for local gardening. Comprehensive training was provided to gardeners and waste collectors to ensure the system's smooth operation, making it a model for circular waste management.

At the same time, Varanasi's bold step in converting Municipal Solid Waste into torrefied fuel marks a leap toward sustainability. The "MSW to Torrefied Charcoal" plant, operating on a Build-Own-Operate model, processes 600 tonnes of fresh waste and 2000 tonnes of legacy waste daily, turning it into high-calorific-value fuel. This innovation reduces landfill reliance and lowers greenhouse gas emissions, contributing to India's clean energy goals.

A major focus of the Municipal Corporation's initiatives is the formalisation of informal waste workers, often marginalised in society. Through the Fatman Material Recovery Facility, waste workers are being registered, trained, and connected to government schemes, giving them access to safer work conditions and financial security. By providing regular salaries, safety gear, and formal recognition, the city is uplifting the lives of its 12,000 informal waste workers. These initiatives highlight Varanasi's commitment to a cleaner, greener future.

Women Power in Ambikapur

Ambikapur, a small town nestled in the hills of Chhattisgarh, was once grappling with a severe waste crisis. With 51 metric tonnes of daily waste polluting the air and contaminating groundwater, the health of residents was at risk, and the municipal corporation struggled to find a solution. In 2015, the launch of the Swachh Ambikapur Mission, under the leadership of the District Collector of Surguja, marked a turning point, bringing both cleanliness and empowerment to the community.

At the heart of this transformation was the Solid Liquid Resource Management Model, a community-driven approach led by women Self-Help Groups, affectionately known as Swachhata Didis. These women took charge of the town's waste management system, leading door-to-door waste collection and segregation efforts while engaging with the community to promote behavioural change. Across 48 wards, waste was meticulously sorted into 169 categories, with organic waste composted and recyclables sold—turning what was once a burden into a valuable resource.

This initiative not only solved the waste crisis but also provided financial independence for marginalised women. Through the sale of compost and recyclables, the Swachhata Didis earned incomes, demonstrating that waste management can serve as a pathway to social and economic empowerment. These women emerged as leaders in their community, transforming Ambikapur into a model town for cleanliness and grassroots leadership.

Building on this success, Ambikapur launched the Garbage Cafe in 2019, where residents could exchange plastic waste for food coupons. This innovative initiative reduced plastic waste on the streets while providing support to marginalised communities, including waste pickers. The project generated Rs 12 lakhs per month from processed plastic granules, showing how environmental protection can go hand-in-hand with social upliftment.

Beyond Ambikapur, the state launched the Chhota Bheem Captain Clean Campaign, rebranding the popular cartoon character to inspire better sanitation practices.

Navi Mumbai's Zero Waste Model Transforming Slums

Navi Mumbai, a rapidly urbanising city, faced significant waste management challenges, particularly in informal settlements. To address these issues, the Navi Mumbai Municipal Corporation introduced the "Zero Waste Model," focusing on comprehensive waste collection, segregation, and processing within slum areas. This model was rolled out in collaboration with local NGOs and women's Self-Help Groups (SHGs), creating economic opportunities while improving sanitation.

Women's teams began waste collection from 250 households daily, segregating wet and dry waste. Wet waste was composted at decentralized sites, while dry waste, particularly metals, was sold to scrap dealers. This initiative benefits around 10,000 households, generating approximately 270 metric tonnes of waste monthly. The composting of wet waste and the sale of recyclables have provided a sustainable income for the women involved.

By April 2019, the initiative had led to the establishment of decentralised composting units, further reducing waste sent to landfills. Households were provided with twin bins to ensure effective waste segregation. SHGs played a crucial role in engaging the community, offering training sessions and creating new livelihood opportunities.

Navi Mumbai's Zero Waste Model has significantly improved sanitation, reduced landfill pressure, and empowered women through economic inclusion. The model stands as an example of how slums can be transformed through community-driven waste management, providing a replicable template for other cities facing similar challenges.

Bokakhat's Comprehensive Approach to Sustainable Waste Management

Bokakhat, located near the ecologically sensitive Kaziranga National Park in Assam, faced a growing solid waste management challenge. To address this, the Municipal Board of Bokakhat launched an ambitious waste management strategy, supported by SEEDS (Sustainable Environment and Ecological Development Society) and several key stakeholders.

A Waste Recovery Facility was established to enhance the segregation, recycling, and safe disposal of waste, focusing on the 3R principles—Reduce, Reuse, Recycle. The facility employed advanced technologies to process waste efficiently, turning Bokakhat into a cleaner, greener city. Collaborators such as IIT Guwahati provided technical expertise, while the District Commissioner's Office Golaghat and local community-based organizations (CBOs) played a vital role in mobilising community support.

With the adoption of innovative waste management technologies, nearly 60 tonnes of legacy waste were cleared through the Material Recovery Facility (MRF), significantly reducing environmental pollution. Aerobic bins and strategic site selection improved waste management efficiency. Training and education programs further increased awareness among local stakeholders about waste handling and safety protocols.

Bokakhat's holistic waste management approach—driven by collaboration and community engagement—has resulted in improved hygiene and well-being for its residents. The project has become a valuable case study in how a small town can successfully implement sustainable waste management solutions by leveraging community participation and advanced technology.

Khurai's Temple Waste Turned into Prosperity

Khurai, a town in Madhya Pradesh's Sagar district, faced a unique challenge: managing the large quantities of flower waste generated by its temples. Religious sentiments prevented the mixing of sacred waste with regular municipal waste, and residents often discarded temple waste in water bodies, causing environmental harm. Understanding the need for a culturally sensitive solution, the Khurai Municipal Council launched an initiative to transform temple waste into incense sticks.

A dedicated waste collection system for temples was introduced, where trained staff collected flower waste separately. The council partnered with local women's Self-Help Groups (SHGs), providing them with training and equipment to convert the flower waste into incense sticks. This initiative not only respected religious sentiments but also created new livelihood opportunities for women in Khurai.

The project transformed approximately 150 kilograms of flower waste into 10 kilograms of incense sticks daily. Each SHG member earned between Rs 5,000 and Rs 8,000 per month, achieving financial independence. Environmentally, the initiative reduced waste sent to landfills and protected local water bodies from pollution.

Khurai's innovative project showcases how cultural sensitivity can drive sustainable waste management while providing economic opportunities. The town's approach has set an example for other municipalities to address similar challenges by turning religious waste into valuable products, fostering community involvement and environmental stewardship.

Bhopal's Dumpsite Transformation into Green Fairways

Bhopal achieved a remarkable environmental victory by transforming a 37-acre dumpsite, known as Bhanpur Khanti, into a lush green space. Once a symbol of environmental degradation, the dumpsite accumulated over 750,000 tonnes of waste over 30 years. In 2018, Bhopal Municipal Corporation partnered with Saurashtra Enviro Projects Pvt. Ltd. to rehabilitate the site through bio-mining and bio-capping.

The process involved extracting and treating 180,000 tonnes of waste, stabilising the remaining waste with a high-density polyethylene liner, and implementing a gas treatment system to prevent pollution. After three years of hard work, Bhanpur Khanti was transformed from a toxic waste site into a green recreational space.

The reclamation project culminated in plans to develop Bhopal's first golf course, spanning 12 acres of the reclaimed land, along with a public green space for community use. This initiative not only addressed environmental concerns but also created a new leisure destination for residents.

Bhopal's success in waste management demonstrates how innovative solutions and public-private partnerships can turn environmental challenges into opportunities for urban renewal. The project sets a benchmark for cities facing similar dumpsite rehabilitation challenges, showcasing how waste can be transformed into green, functional spaces for the community.

Kochi's Bio-Mining Initiative at Brahmapuram Yard

Kochi, Kerala's largest city, faced the daunting challenge of managing legacy waste at the Brahmapuram Yard, a 108-acre dumpsite with over 15 years of accumulated waste. In 2023, Kochi Municipal Corporation, under the leadership of Mayor and supported by Bhumi Green Energy, launched an ambitious bio-mining project to process 10.52 lakhs cubic meters of legacy waste.

The bio-mining process involves excavating old waste, introducing bio-remediation techniques to accelerate organic material breakdown, and screening the waste to recover valuable materials such as plastics, metals, and organic fines. These materials are recycled or co-processed, significantly reducing the waste burden. The project is being carried out on 80 acres of the dumpsite, with half of the waste already processed.

KMC has also partnered with agencies like FABBCO and Zigma to operate Black Soldier Fly (BSF) plants that process 25 tonnes of bio-waste daily, further enhancing the city's waste management capabilities. Additionally, a 100 KLD Faecal Sludge Treatment Plant (FSTP) and a sanitary waste processing plant have been set up to handle more specialised waste streams.

The project has led to significant behavioural changes among residents, with 95 percent of households now participating in waste collection. Kochi's bio-mining initiative at Brahmapuram Yard has turned a dumpsite into a model of sustainable waste management, demonstrating the power of innovative, science-based solutions for urban waste challenges.

Rudrapur's Dumpsite Transformed into Green Oasis

In Rudrapur, Uttarakhand, a legacy dumpsite that had stood as a symbol of environmental degradation near the National Highway was transformed into a green oasis through a groundbreaking waste remediation project. Faced with this daunting challenge, the Nagar Nigam Rudrapur took decisive action, launching an ambitious 'Dumpsite Remediation' project under the Swachh Bharat Mission 2.0. This initiative was not merely about cleaning up; it was about reclaiming and transforming the land into a green, usable space that would breathe new life into the community.

The Nagar Nigam Rudrapur, faced with 211,000 metric tonnes of waste accumulated over decades, took action by employing biomining and bioremediation techniques to rehabilitate the site. The project involved separating and processing waste to recover recyclables, while contaminated soil was treated, and residual waste was contained in an engineered landfill with advanced liners. This ensured long-term environmental protection while enabling the land to be redeveloped safely.

Despite initial scepticism from the local community, consistent engagement and transparent communication helped build trust. Over three phases, between December 2020 and May 2024, the dumpsite was completely remediated, turning it into a vibrant green space for residents to enjoy. The transformation not only reduced soil and water contamination but also alleviated traffic congestion by creating additional public spaces near the highway.

Rudrapur's dumpsite remediation project stands as a powerful example of how public-private partnerships, innovation, and community involvement can turn environmental hazards into valuable public spaces, improving the quality of life for residents.

Pithampur's Manure Granules from Organic Waste

Pithampur, a town in Madhya Pradesh's Dhar district, faced a growing problem of managing organic waste, which accounted for a significant portion of the city's refuse. Open dumping of organic waste caused foul odours and environmental degradation. To address this, the Pithampur Municipal Council launched an innovative project to turn organic waste into marketable manure granules.

The council set up a systematic waste collection system, transporting organic waste to a central processing facility. Here, the waste was segregated and composted before being granulated into manure. Using specialised trommels and granulators, the facility efficiently processed the organic material, producing nutrient-rich granules that were sold to local farmers and nurseries.

This initiative not only reduced the waste sent to landfills but also provided economic opportunities for women and marginalised groups. The revenue generated from manure granule sales helped offset waste management costs, while farmers benefited from high-quality organic fertiliser, improving agricultural yields.

Pithampur's approach has successfully turned waste into a resource, creating both environmental and economic benefits. The project serves as a replicable model for other cities looking to manage organic waste sustainably while supporting local agriculture and fostering community involvement.

Seoni Malwa's Organic Waste Revolution with Vermicompost

The town of Seoni Malwa in Madhya Pradesh faced mounting challenges with the improper disposal of organic waste. With waste piling up on streets and vacant plots, the town needed a solution that addressed both waste management and agricultural productivity. In response, Seoni Malwa's Municipal Council launched an innovative vermicomposting initiative to convert organic waste into high-quality compost.

The council implemented a waste collection system that ensured proper segregation of organic and inorganic waste. Organic waste was transported to a specially built composting facility where earthworms played a key role in transforming waste into nutrient-rich vermicompost. The shortage of earthworms, essential for the process, was addressed by training staff to breed earthworms in dedicated pits.

Within 45 to 90 days, the earthworms transformed the organic waste—plant leaves, fruit peels, and cow dung—into high-quality vermicompost, which was distributed to local farmers. The town now manages 100 percent of its organic waste, significantly reducing its landfill burden. Farmers in the area have benefited from improved soil health, reduced reliance on chemical fertilisers, and higher crop yields.

Seoni Malwa's success in converting waste into an agricultural resource demonstrates the potential of small towns to lead in sustainability. The project has not only improved urban cleanliness but also revitalised local agriculture, creating a model for other regions to adopt.

Phagwara's Flower Composting Transforms Temple Waste

The Thakur Dwara Prachin Shiv Temple in Phagwara, Punjab, faced a growing challenge in managing the large quantities of flower waste generated by daily offerings. Disposing of these offerings in landfills or water bodies raised environmental concerns, prompting the Municipal Corporation of Phagwara to initiate a flower composting project in 2024.

The project, launched in collaboration with the temple committee, involved constructing five compost pits on the temple's second floor. Each day, 15 to 20 kilograms of flower waste are collected and composted, producing organic manure that supports local gardening efforts. The Municipal Corporation also facilitated training and awareness programs for temple staff and visitors, emphasising the environmental benefits of composting.

This initiative not only reduces the temple's environmental footprint but also sets an example for other religious institutions. The project has inspired similar composting efforts in other temples, gurdwaras, and mosques across Phagwara, promoting sustainable waste management practices citywide.

Phagwara's flower composting project demonstrates how religious institutions can play a role in environmental stewardship. By converting temple waste into valuable compost, the city has created a sustainable model for managing sacred waste, fostering both environmental and community benefits.

Ujjain's Floral Waste Conversion Boosts Circular Economy

The Mahakaleshwar Temple in Ujjain, a major pilgrimage site in India, generates around 5 to 6 tonnes of floral waste daily. Recognising the environmental hazards posed by such waste, the Ujjain administration, with support from the Ujjain Municipal Corporation and local startup Pushpanjali Econirmit, implemented a sustainable solution to transform floral waste into valuable products.

In 2016, a 600 kilogram-capacity organic waste converter was installed on the temple grounds to process flower waste into nutrient-rich manure. This manure is used for gardening and sold at Rs 15 per kilogram to local farmers. The initiative also expanded into producing eco-friendly products such as incense sticks, dhoops, havan cups, and natural colours from the processed flowers. Women from the Shiv Arpan Self-Help Group have been trained to handle the production, earning livelihoods through the project.

By adopting the principles of Reduce, Reuse, and Recycle, the initiative has treated 2,200 tonnes of floral waste to date, producing over 30 million sticks of incense and other products. Ujjain's Green Temple initiative has not only reduced waste in the local environment but also empowered women and promoted the circular economy, turning temple waste into wealth while safeguarding the sacredness of the offerings.

Mangalore's Black Soldier Fly Initiative for Wet Waste Management

Mangalore City Corporation has pioneered a sustainable solution to manage wet waste through Black Soldier Fly (BSF) technology, revolutionising how the city processes organic waste. Launched in 2023, the initiative focuses on using BSF larvae to decompose organic waste quickly and efficiently while minimising environmental impacts.

The larvae feed on organic waste, particularly meat waste, and convert it into compost while also producing protein-rich larvae that can be used as an alternative source of animal feed. This technology not only accelerates waste breakdown but also significantly reduces odours, leachate, and greenhouse gas emissions compared to traditional composting methods.

With the capacity to process 200 tonnes of bio-waste daily, Mangalore has become a leader in sustainable waste management. The project has garnered widespread attention, positioning the city as a model for other municipalities interested in adopting eco-friendly waste processing technologies.

By leveraging BSF technology, Mangalore has created a faster, more efficient solution for managing wet waste, ensuring both environmental and economic sustainability for the future.

Itarsi's Plastic Waste Transformed into Public Infrastructure

The town of Itarsi in Madhya Pradesh faced a growing challenge of managing plastic waste. In response, the Itarsi Municipal Council launched an innovative initiative in 2022 to recycle plastic waste into public infrastructure components such as benches, paver blocks, and chairs. This initiative, implemented through the town's Material Recovery Facility (MRF), has proven to be both environmentally and financially sustainable.

Plastic waste collected across Itarsi is sorted, shredded, and melted before being moulded into durable benches and paver blocks. These recycled plastic products cost significantly less than their traditional concrete counterparts. For example, each plastic bench costs Rs 4,500 compared to Rs 8,000 for a concrete bench, providing substantial savings for the town while reducing landfill waste.

In just one year, the initiative recycled 150 tonnes of plastic waste, producing 38 benches and over 5,000 paver blocks, which have been installed in parks and public spaces across Itarsi. The initiative not only addresses plastic pollution but also contributes to the town's sustainable development goals, showcasing how waste can be turned into valuable public resources.

Itarsi's plastic recycling initiative stands as a model for other cities aiming to reduce plastic waste while promoting eco-friendly urban infrastructure.

Rewa's Waste-to-Energy Plant Stands Out as a Sustainable Power Source

Rewa, a city in Madhya Pradesh, took a significant step toward sustainable waste management by launching its first Waste-to-Energy (WtE) plant. Operational since 2021, this facility converts municipal solid waste (MSW) from 28 Urban Local Bodies into clean energy, addressing both the city's waste disposal challenges and its rising energy demands.

The WtE plant, with a capacity of six megawatts (MW), processes around 450 metric tonnes of Refuse-Derived Fuel (RDF) daily. The facility uses an RDF-based direct combustion method to generate electricity, which is fed into the grid to power local homes and businesses. This high-tech facility operates with minimal human intervention, ensuring efficient and automated waste processing.

A notable feature of the plant is its strong community engagement. Initially, residents were sceptical about the project. However, by employing 80 percent of its workforce from the surrounding community, the plant has fostered local support and provided new job opportunities.

Rewa's WtE plant not only reduces reliance on landfills but also generates sustainable energy for the region. This innovative solution has set a benchmark for cities seeking to balance waste management and clean energy production, contributing significantly to Rewa's sustainability goals.

Jaipur's Bio-Methanation Success: Converting Waste to Energy

The Municipal Corporation of Greater Jaipur has become a leader in sustainable waste management through its bio-methanation project at the Sewage Treatment Plant (STP) in Dehlawas. Launched in partnership with M/s Brajdham Power Pvt. Ltd. in 2013, this project converts biogas produced from sewage into bio-CNG, a clean and renewable energy source.

With a capacity to handle 210 million litres of sewage per day, the Dehlawas STP captures methane emissions from the sewage and processes it into bio-CNG. This fuel is used to power vehicles and supply local industries, reducing reliance on fossil fuels. The plant generates 1.5 crores annually from the sale of bio-CNG, demonstrating its financial sustainability.

The project has won multiple awards for its innovation and impact, including the HUDCO Award and the SKOCH Order of Merit. The plant aims to expand its operations by producing green hydrogen and setting up a Bio-CNG filling station.

Jaipur's bio-methanation project is a prime example of how cities can leverage renewable energy technologies to transform waste into valuable resources. The project contributes to both environmental and economic sustainability, making it a model for other urban centres.

Lamlai's Plastic Recycling Empowers Women and Reduces Waste

Lamlai Municipal Council in Manipur has gained recognition for its innovative plastic recycling initiative, which not only reduces plastic waste but also empowers local women through employment opportunities. The initiative, launched in 2021, involves transforming low-density polyethylene (LDPE) plastic, such as polybags and plastic bottles, into eco-friendly paving tiles and bricks.

Women's Self-Help Groups (SHGs) are at the forefront of this project. The process begins with collecting plastic waste, which is then heated, mixed with sand, and moulded into durable building materials. Each tile or brick uses between 100 to 130 polybags or 50 plastic bottles, making a significant dent in the town's plastic waste problem.

These recycled products are used for footpaths, playgrounds, and housing projects, providing a cheaper and more sustainable alternative to traditional construction materials. The initiative has also created new livelihoods for the women involved, promoting financial independence and community development.

Lamlai's plastic recycling project serves as a model for other small towns, demonstrating how local innovation and women's empowerment can drive sustainable waste management solutions. By turning plastic waste into valuable building materials, the town has set an example of environmental stewardship and economic empowerment.

Roing's Green Revolution Paves Way for Sustainable Waste Management in Arunachal Pradesh

Roing, a small town in Arunachal Pradesh's Lower Dibang Valley, faced significant challenges with improper waste disposal, which threatened both public health and the town's natural beauty. In 2022, Roing Municipal Council, in partnership with the local Self-Help Group (SHG) Green Roing, launched a transformative Public-Private Partnership (PPP) model for solid waste management.

The Green Roing initiative started small, with 12 staff members collecting waste from urban households. They identified key dumping sites, especially areas polluted by plastics, and took action to barricade these spots, preventing further waste accumulation. Through community engagement efforts, such as street plays and educational campaigns, Green Roing spread awareness about waste segregation and recycling.

Over time, the initiative grew, with Green Roing establishing a private Material Recovery Facility (MRF) and expanding to handle three tonnes of waste per month. Waste was collected from roads, drains, and homes, sorted at the MRF, and recyclables were sold, creating an income stream for the SHG members. A powerful symbol of the initiative's success is the Waste to Wonder Butterfly Park at Eze Park, built from recycled materials, including 10,000 plastic bottles.

Roing's waste management revolution serves as an inspiration for other small towns in Arunachal Pradesh. The combination of community participation, innovation, and environmental stewardship has turned Roing into a model of sustainable waste management in the region.

Murthal's Waste-to-Energy Plant: A Model of Sustainability in Haryana

Murthal in Sonipat, Haryana, has emerged as a leader in waste management through the launch of its Waste-to-Energy (WtE) plant. Operational since 2021, this plant processes 700 tonnes of waste daily and generates 8 MW of electricity, contributing to India's renewable energy goals.

The plant, managed under a Public-Private Partnership (PPP) by JBM Environment Management Pvt. Ltd., is India's first Integrated Solid Waste Management (ISWM) project of its kind. By converting Refuse-Derived Fuel (RDF) into energy, the facility reduces the volume of waste sent to landfills, lowers environmental pollution, and provides sustainable power to local communities.

One of the plant's notable achievements is the integration of waste from the cities of Sonipat, Panipat, Ganaur, and Samalkha, streamlining operations and maximising energy recovery from waste. The project has processed over 180,000 metric tonnes of waste since its launch, contributing significantly to cleaner urban environments in the region.

Murthal's WtE plant is recognised for its innovation and sustainability, earning accolades such as the CII 3R Awards. The project sets an adaptable and scalable precedent for cities across India, demonstrating how waste can be transformed into energy while promoting environmental and economic benefits.

Shopian's Waste-to-Wonder Initiative Stands Out as a Model of Recycling

Shopian, a small town in Jammu and Kashmir, faced severe waste management challenges, with over 2,880 tonnes of municipal waste annually being dumped in open areas, causing health hazards and environmental degradation. In 2023, the Municipal Council of Shopian launched a state-of-the-art Solid Waste Management (SWM) plant to address these issues.

The plant, with an initial capacity of 4 tonnes per day (TPD), focuses on scientific waste treatment through segregated waste collection and recycling. Door-to-door waste collection was introduced, and 10 vehicles were deployed to gather waste from households. The SWM plant processes dry waste using conveyor belts, shredders, and balers, while wet waste undergoes pit composting, producing certified compost within 45 days.

The project also established market linkages with registered dealers to sell recyclable materials, creating an income stream for the town. Awareness campaigns were conducted to engage the public in waste segregation and responsible disposal practices.

Shopian's Waste-to-Wonder initiative has revolutionised waste management in the town, turning a once unmanageable problem into a source of economic and environmental opportunity. This project sets an example for other towns in Jammu and Kashmir, showcasing how modern waste treatment technologies and community involvement can lead to sustainable urban management.

Hyderabad's Bowenpally Market Turns Waste into Energy

Launched in 2020, the Bowenpally Market in Hyderabad is the first of its kind in India, processing about 10 tonnes of vegetable waste per day generated by market vendors. Praised by the Honorable Prime Minister and recognised as an essential innovative interjection in addressing of bulk waste, the Market has pioneered an innovative approach to waste management by converting food waste into electricity and biofuel.

The process is relatively simple. The market generates about 10 tonnes of organic waste daily which translates into around 6,290 kilogram of carbon dioxide emitted annually. To offset the market's estimated carbon footprint, this waste is duly collected and processed through a biogas plant which converts the same into 500 units of electricity and 30 kilograms of biofuel. This helps to address the issues of waste accumulation and management not only within Bowenpally, but often also within other local markets across the city from whom waste is amassed to make up the required input for the plant.

The waste is collected and fed into a biogas plant where it undergoes anaerobic digestion, producing biogas. This biogas is then used to generate electricity, which powers over 100 streetlights, market offices, and even cold storage units within the market. The biogas plant also produces biofuel for cooking in nearby canteens, providing a sustainable energy solution for local communities. This endeavour, therefore, establishes an almost circular waste-to-energy system which minimises environmental impact by maximising efficient waste consumption.

This waste-to-energy initiative has been done in collaboration with other stakeholders Ahuja Engineering Pvt Ltd, the Council of Scientific and Industrial Research-Indian Institute of Chemical Technology, the Department of Biotechnology, and the Department of Agriculture Marketing in Hyderabad, Telangana.

Indore's GOBARDhan Bio-CNG Plant Reflects Asia's Largest Waste-to-Wealth Initiative

Indore, known for its consistent ranking as India’s cleanest city, achieved another milestone with the launch of Asia’s largest GOBARDhan Bio-CNG plant in 2022. This state-of-the-art facility processes cattle dung and organic waste to produce compressed biogas (CBG), which is used as a clean fuel for vehicles and industries.

The plant, capable of processing 550 tonnes of organic waste daily, converts the waste into 18,000 kilograms of bio-CNG and 100 tonnes of organic compost. The bio-CNG is sold to fuel stations, while the organic compost is used by local farmers to improve soil health. The initiative aligns with the city’s zero-waste policy, reducing landfill waste and promoting renewable energy.

Indore’s bio-CNG plant is a part of the national Gobar-Dhan scheme, which aims to convert waste into wealth across rural and urban areas. This initiative has not only helped manage the city’s waste more efficiently but has also created economic opportunities, supporting farmers and local industries.

Indore’s success with its bio-CNG plant sets an example for other cities and regions aiming to transition to a circular economy by transforming waste into a sustainable energy source.

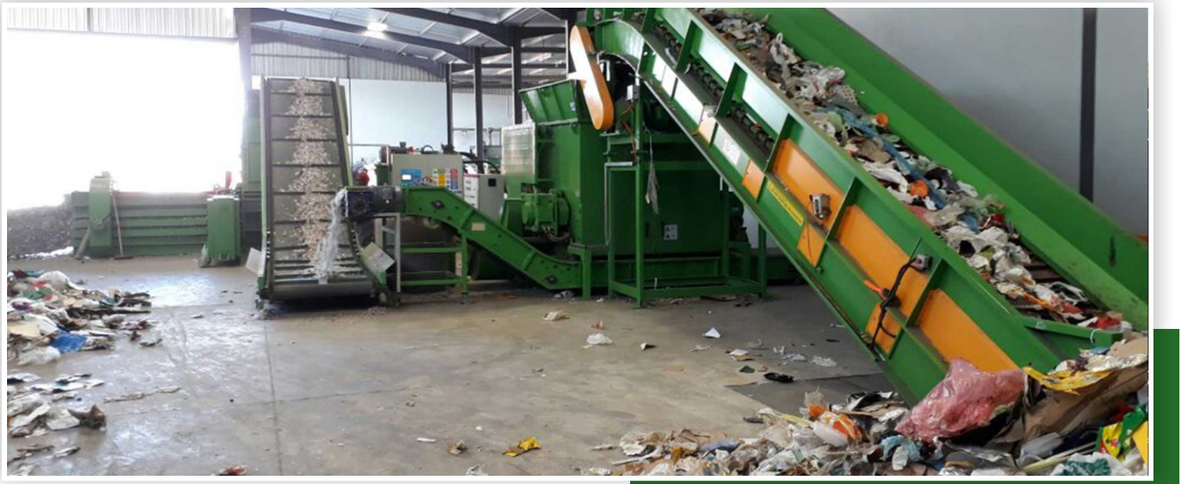
Gangotri’s Innovative Waste-to-Wealth Initiative

Gangotri, one of India’s most sacred pilgrimage sites, faced increasing waste challenges due to the influx of devotees. The fragile ecosystem of the Himalayas, combined with the lack of waste management infrastructure, made it difficult to handle the waste generated in the region. In response, the local administration launched an innovative waste-to-wealth initiative in 2022, focusing on turning organic waste into compost and recyclable materials into valuable products.

The project involved the installation of decentralised waste processing units along the Gangotri route, where waste was segregated at source. Organic waste, including food scraps and biodegradable offerings, was composted on-site, and used for reforestation projects in the area. Recyclable materials such as plastics and metals were collected and sent to processing centers, where they were transformed into useful products like eco-friendly souvenirs for tourists.

The initiative also included the active participation of pilgrims, who were encouraged to segregate their waste and dispose of it responsibly. This was supported by local awareness campaigns, which emphasised the importance of preserving the environment in such a sacred location.

Gangotri’s waste-to-wealth initiative has significantly reduced the environmental impact of pilgrimages, setting an example for other religious destinations in India. By turning waste into valuable resources, the project has contributed to the preservation of the region’s fragile ecosystem while promoting sustainable tourism.



Narayanpet's RDF Briquettes Transforms Waste into Fuel

Narayanpet, a district in Telangana, had long struggled with waste management challenges, ranging from improper waste disposal to a lack of infrastructure. With a population of over 566,000, the district faced multiple issues such as improper segregation of hazardous medical waste, waste accumulation during the rainy season, and a shortage of qualified waste management professionals. These compounded the challenges of motivating waste management staff and ensuring proper processes.

In 2022, Stratos Projects Pvt. Ltd., led by women entrepreneurs, collaborated with Narayanpet Municipality under the Integrated Solid Waste Management component of Swachh Bharat Mission 2.0. Their goal was to turn waste into valuable resources by producing Refuse-Derived Fuel (RDF) briquettes and pyrolysis oil from end-of-life plastics. Approximately 60 percent of municipal solid waste is converted into RDF briquettes, while five percent of MSW becomes pyrolysis oil used by industries.

The initiative also encouraged local farmers to sell agricultural waste such as cotton and corn stalks, which were incorporated into the RDF briquette production. The briquettes have a calorific value between 3500 and 3800 Kcal, making them an effective alternative fuel for industries, reducing their reliance on fossil fuels.

This project has transformed Narayanpet's waste management landscape by scientifically addressing 100 percent of the district's waste, preventing it from reaching landfills, and reducing environmental pollution. Over 14,400 metric tonnes of waste have been processed in the past two years, with industries benefiting from the reduced carbon footprint—cutting approximately 5,000 tonnes of emissions annually. The initiative has also helped foster community engagement, dispelling the stigma around waste management work and promoting proper segregation norms in local businesses, schools, and hospitals.

Pimpri Chinchwad's Leading Initiative in Waste-to-Energy

Pimpri Chinchwad Municipal Corporation has taken a giant leap in sustainable urban development through its innovative waste-to-energy (WtE) plant. Inaugurated in 2023 by Honourable Prime Minister Narendra Modi, this first-of-its-kind facility in Maharashtra, located in Moshi, is a hallmark of how urban waste can be transformed into renewable energy. Developed in partnership with Antony Lara Renewable Energy Private Limited, the plant processes around 700 metric tonnes of dry waste daily, generating 14 megawatts (MW) of electricity. This step is crucial, as the city produces around 1,150 metric tonnes of waste every day.

Of the electricity produced, 2 MW are used to run the plant itself, while the remaining 12 MW are utilised by the city for operating its water and sewage treatment plants. This efficient system saves the municipal corporation 35-40 percent on electricity costs, equating to substantial savings in the long run. Additionally, the city recycles its wet waste by converting 450 metric tonnes into compost, further contributing to environmental sustainability.

The project, which cost 300 crores, operates under a Public-Private Partnership (PPP) model with a 21-year operational period. It includes a Material Recovery Facility (MRF) with a 1000-ton capacity and a compost plant capable of handling 500 tonnes per day. Treated water is also reused in the facility, adding to its eco-friendly operations. Pimpri Chinchwad's WtE initiative serves as a shining example of how waste can be turned into a resource, showcasing the potential of sustainable urban infrastructure.

Ghaziabad's Garbage Factory Transforming Waste Management with a Decentralised Approach

Ghaziabad, one of Uttar Pradesh's largest cities, struggled with rapid urbanisation and inefficient waste disposal systems. The unscientific dumping of municipal waste in landfills led to environmental pollution, health hazards, and high costs for waste transportation and processing. Informal waste pickers, who played a key role in segregation, worked without recognition or support, leaving them vulnerable to unsafe conditions. Ghaziabad needed a sustainable solution to reduce landfill dependence, improve waste management, and uplift informal waste workers.

In May 2020, the Ghaziabad Nagar Nigam launched the "Garbage Factory" initiative in collaboration with Geron Engineering Pvt. Ltd. This decentralised waste management model processes daily waste and reduces landfill contributions by 90-95 percent. Organic waste is converted into compost, while non-recyclable materials are turned into Refuse-Derived Fuel (RDF) for cement and Waste-to-Energy plants. The system efficiently manages waste within each zone, eliminating the need for central dumping sites.

A significant aspect of the initiative is the formal integration of informal waste pickers, providing them with safer working conditions and a structured role in waste segregation. Additionally, the Nagar Nigam introduced an IT-based solid waste management system that tracks real-time operations. A mobile app enables citizens to monitor door-to-door waste collection and raise service requests, enhancing efficiency and transparency.

Ghaziabad's Garbage Factory has reduced waste to landfills by 90-95 percent, saved the city Rs 5-6 crores annually in transport costs, and generated 1-2 crores in revenue through Extended Producer Responsibility (EPR) services. The initiative's financial sustainability and improved livelihoods for waste pickers make it a model for decentralised waste management in other cities.

HUDD's Zero-Waste Initiative with Eco-Friendly Kits Elevates Amarnath Yatra 2024

The Housing and Urban Development Department (HUDD) of Jammu and Kashmir has introduced an innovative initiative to make the Amarnath Yatra 2024 plastic-free. This project is aligned with Swachh Bharat Mission 2.0, addressing plastic waste and improper disposal during the pilgrimage, which sees thousands of devotees every year. Historically, single-use plastics led to significant environmental degradation, particularly along the high-altitude and rugged pilgrimage route.

To combat this issue, HUDD distributed "sustainable kits" to pilgrims, free of charge. These kits include steel water bottles, bamboo toothbrushes, cloth bags, herbal soaps, and other eco-friendly items, providing alternatives to plastic. Accompanied by a comprehensive awareness campaign, the initiative seeks to instil eco-conscious habits in pilgrims, encouraging them to adopt sustainable practices both during and after the pilgrimage.

HUDD partnered with local urban bodies to ensure smooth implementation, distributing 50,000 kits to reduce plastic usage by 30-40 percent. This effort is expected to prevent the disposal of over 5 lakhs plastic bottles, 15 lakhs disposable items, and more than 1 lakh single-use plastic bags along the pilgrimage route. The wide distribution network, spanning 19 locations along the route, ensured that all pilgrims had access to the kits.

The success of this initiative demonstrates that large-scale events can adopt zero-waste principles through innovative approaches and community participation. HUDD's eco-friendly kit initiative for the Amarnath Yatra 2024 sets a precedent for future sustainable events in India, making it an exemplary model for reducing plastic waste during high-footfall gatherings.

Waste to Wisdom Pilgrim-Led Sustainability in Kedarnath

In 2022, Kedarnath in Uttarakhand became the first city in India to establish a Digital Deposit Refund System (DRS), converting pilgrim-led waste management into a sustainable environmental preservation model. Following the COVID-19 pandemic, pilgrim numbers surged to approximately 50,000 everyday, which caused significant environmental concerns due to increased littering.

The Kedarnath District Administration, in collaboration with Recykal, a clean tech start-up, and local shopkeepers, launched DRS to address this. Under the system, pilgrims paid an extra deposit on products, which was refunded upon returning waste to collection centres. QR codes distributed to shops helped track products and manage refunds, with plans to integrate these codes directly into product packaging in the future. The collected waste was processed by recyclers, and data was shared with the district administration for monitoring.

The DRS achieved a 52 percent return rate for bottles and containers, with widespread acceptance from priests, pilgrims, shopkeepers, and sanitation workers. The DRS app maintained a 99.9 percent uptime, ensuring seamless operations through efficient QR code tracking. The initiative was recognised nationally as India's inaugural Digital Innovation in Deposit Refund Systems.

Kedarnath's "Waste to Wisdom" initiative showcases how collective efforts and innovative strategies can transform waste management into an opportunity for environmental sustainability, setting a new standard for pilgrim cities across India.

Recycle Jaipur App a Digital Innovation Revolutionising Waste Management

Jaipur, known for its rich heritage and culture, has made significant strides towards a cleaner and more sustainable environment. The Municipal Corporation Jaipur Heritage launched the Recycle Jaipur App, a digital platform designed to simplify waste management and promote recycling. This user-friendly app enables individuals and businesses to sell their dry waste and recyclables, turning potential trash into valuable resources.

The app offers features such as waste collection requests, locating nearby recycling centres, and scheduling doorstep pickups for bulk recyclables. Users can select the type of waste—plastic, paper, glass, or e-waste—and arrange for convenient pickups, encouraging responsible recycling practices and reducing the city's landfill waste. This platform has also helped to foster a recycling culture by providing a streamlined approach to waste disposal.

In addition to environmental benefits, the app supports the local recycling industry by connecting users with recycling centres and services, boosting demand for recycled materials. The app, alongside Jaipur's RRR (Reduce, Reuse, Recycle) Centres, has significantly increased recycling participation across the city. These centres serve as drop-off points for reusable materials, further expanding the city's waste management infrastructure.

Jaipur's Recycle App and RRR centres have transformed the city's waste management landscape, setting a precedent for other cities in adopting digital solutions for environmental challenges. This initiative highlights the power of technology in driving sustainable change, making Jaipur a leading example in responsible waste management.

Mangan Nagar Panchayat's Waste Management Innovations in Sikkim

Mangan, a small Nagar Panchayat in Sikkim with a population of 6,000, has emerged as a model for solid waste management under the Swachh Bharat Mission 2.0. Through community engagement, innovative waste management strategies, and a focus on sustainability, Mangan has set a benchmark for other urban local bodies (ULBs) in Sikkim and across the northeast region.

One of the key innovations in Mangan is the introduction of a PET shredding machine, installed at Mangan Bazaar in September 2021. This first-of-its-kind initiative in Sikkim allows citizens to process plastic bottles into smaller flakes, significantly reducing waste volume by 85 percent. By processing plastic waste such as mineral water and soft drink bottles, Mangan has taken a major step towards reducing its plastic footprint.

In addition to plastic waste management, Mangan has established a state-of-the-art Material Recovery Facility (MRF) with a capacity of 5 tonnes per day. The MRF efficiently processes municipal waste, converting organic waste into high-quality manure, which is sold to the public, creating a revenue stream for the Nagar Panchayat. The town has also set up a Reduce, Reuse, Recycle (RRR) centre where citizens can donate excess items, further promoting waste reduction.

The "3 Bin, 1 Bag" system for household waste segregation and the declaration of two wards as "Zero Wet Waste" zones highlight Mangan's ambition to achieve 100 percent source segregation by 2025. Mangan's efforts have earned it recognition as the cleanest ULB in Sikkim and the second cleanest in the northeast, receiving multiple awards in 2022 and 2023.

Naugaon's Solid Waste Facility Turns Waste into Wealth with Success

Nestled along the banks of the Yamuna River, on the scenic Dehradun-Yamunotri Highway, the small town of Naugaon in Uttarkashi faced growing municipal waste challenges. Rising population and the urgent need for scientific waste management led the Naugaon Nagar Panchayat to embark on a journey to establish a state-of-the-art Municipal Solid Waste processing and disposal facility.

The facility's construction, in Uttarakhand's hilly terrain, faced numerous challenges, including landslides, transportation issues, and wild animals. Yet, after seven months of determined effort, the facility opened its doors in September 2023. The project uses an aerobic windrow system for pit-based composting, alongside a sanitary landfill. This innovation marks a significant achievement, making it the second such facility in Uttarakhand's hilly areas and the first in Uttarkashi district.

Processing 5 tonnes of waste per day (extendable to 10 tonnes), the facility integrates leachate treatment, compost production, and materials recovery, earning it recognition as a leading example of sustainable waste management. Naugaon's MSW Processing Facility has demonstrated how small towns can adopt innovative, environmentally friendly solutions to address waste challenges, setting an example for other regions.

Attukal Pongala Implements Sustainable Waste Management for One of the World's Largest Gatherings

The Attukal Pongala festival, held annually in Thiruvananthapuram, Kerala, is one of the largest all-women gatherings in the world, drawing nearly 3 million participants. This 10-day festival, celebrated between February and March, presents significant waste management challenges due to the sheer volume of participants. However, since the introduction of the Green Protocol in 2016, the Thiruvananthapuram Municipal Corporation has turned this challenge into an opportunity for sustainable waste management.

Prior to implementing the Green Protocol, the festival generated over 350 tonnes of waste, much of which ended up in landfills. The city responded by introducing a series of waste-reduction measures and promoting environmental responsibility. In 2017, the Corporation invested in 8,000 steel glasses and 1,000 steel plates, renting them out to food providers, significantly reducing the use of disposable plastics. Violators of the ban on disposables were fined Rs 5,000, and flex boards, another major source of festival waste, were banned. Organisations that adhered to the Green Protocol were awarded gold, silver, and bronze prizes, encouraging broader compliance.

The Green Army Team, composed of volunteers from the Thiruvananthapuram Municipal Corporation, led awareness campaigns to monitor and enforce compliance. These efforts were supplemented by extensive post-festival clean-up operations involving over 1,100 municipal sanitation workers, 2,250 contract workers, 250 National Service Scheme volunteers, and health inspectors. Pongala bricks used during the festival were repurposed in the construction of homes for the underprivileged under Kerala's Life Mission project. The festival has become a model for waste reduction, achieving a notable decrease in waste generation from 85 tonnes in 2017 to 49 tonnes in 2024.

Ambala Sadar's Innovative Cow Dung Management Transforms Waste into Eco-Friendly Cremation Logs

In the heart of Ambala Sadar, the Municipal Council has introduced an innovative solution to tackle the issue of cow dung waste by transforming it into eco-friendly cremation logs. The city was facing two significant challenges: a shortage of wood for cremation purposes and the accumulation of cow dung waste on roads, which was clogging drains and contributing to unsanitary conditions. Recognising the need for a sustainable solution, the Municipal Council launched the Cow Dung Log Project.

Prior to this initiative, Ambala struggled with the unsightly and unhygienic accumulation of cow dung, especially around dairies. The lack of resources and operational planning hindered progress. With support from local NGOs and a robust awareness campaign, the Council undertook a community-driven project, educating the public about the benefits of using cow dung logs as a sustainable alternative to traditional wood.

The project began by processing 140 tonnes of cow dung into 46,000 logs. Known for their longer burn time and cost-effectiveness, cow dung logs have proven to be an excellent alternative to wood. This initiative not only addresses deforestation concerns but also provides a sustainable solution to cow dung waste.

Key stakeholders include local dairy farms, which supply cow dung, and community members who use the logs for cremation. The project has created 10 jobs at the local gaushala, providing much-needed livelihoods. In addition, the awareness campaigns have encouraged dairy owners to sell cow dung directly to the gaushala, improving cleanliness in the area.

Each cremation ritual typically consumes 2 to 2.5 tonnes of wood, and by using cow dung logs, the demand for wood is significantly reduced, helping preserve trees and lower carbon emissions. This initiative has also stabilised the cost of wood, ensuring affordability for families.

Alag Karo Campaign Transforms Waste Management in Gurugram

In 2019-2020, the "Alag Karo" campaign launched in Gurugram, Haryana, became a transformative force in reshaping waste management practices across the city. Supported by the Municipal Corporation of Gurugram and led by Saahas, the initiative targeted a pressing challenge: the city's growing waste problem. Gurugram, a rapidly expanding urban centre, generated over 1,000 tonnes of waste daily and faced poor Swachhata rankings due to inadequate waste segregation and limited collection coverage.

The campaign engaged over 50,000 households across 86 residential colonies, with a key message: "my waste, my responsibility." The goal was to increase waste segregation at the source, ensuring residents took accountability for their waste. A 10-step process was rolled out, beginning with a detailed waste audit to identify gaps. Over the next three months, residents, volunteers, housekeeping staff, and domestic helpers were mobilised through participatory development tools, door-to-door visits, and multilingual posters to drive awareness.

A critical component of the campaign was enforcing compliance with waste segregation. Composting sites were developed both on- and off-site, encouraging each residential complex to manage its own waste. Collaboration with Resident Welfare Associations (RWAs), corporate partners like Coke and Tetra Pak, and international organisations such as GIZ contributed to the campaign's success.

The initiative achieved an 81.8 percent compliance rate for waste segregation, generating revenue from recyclables and compost, while saving over Rs 3 million in collection fees annually. By diverting waste from landfills, the campaign mitigated 12,000 tCO2e annually and created new jobs in composting and waste management. The Social Return on Investment (SROI) for the campaign was Rs 2.66, meaning for every Rs 1 invested, a social value of Rs 2.66 was generated.

Women of Sakhi Self-Help Group Empower Change by Transforming Waste Management in Bageshwar

In Bageshwar, Uttarakhand, a quiet yet powerful revolution in waste management has been led by the women of the Sakhi Autonomous Cooperative Society. The Municipal Council of Bageshwar with a population just over 2,505 across 11 wards, faced significant challenges in waste management due to hilly terrain rendering traditional garbage vehicles ineffective. On top of that, the lack of adequate human resources only compounded the problem, leaving the town struggling with waste disposal issues, adversely effecting health, and environment.

In 2017-18, an innovative solution emerged. Under the National Urban Livelihood Mission (NULM), partnered with Nagar Palika Parishad Bageshwar to address the town's growing waste management challenges. Their efforts have not only transformed how the community viewed waste but also redefined societal attitudes towards women in labour-intensive roles.

Despite the stigma associated with waste collection, the women of the Sakhi group took on the task of door-to-door garbage collection, carrying mixed waste on their heads over difficult terrain. With support from city mission managers and community organisers, the women not only collected garbage but also educated residents on the importance of separating wet and dry waste.

The town began embracing waste segregation, resulting in cleaner streets and a noticeable reduction in diseases. The initiative also provided the women with financial stability, earning them Rs 100 per day. As the initiative expanded, the number of women involved grew from 18 to 47, and two women were promoted to supervisory roles, highlighting a shift towards gender equality.

The success of this initiative earned Bageshwar a place in Swachh Survekshan 2019 and garnered recognition from the National Institute of Urban Affairs. Once stigmatised as "Kudawali" (garbage women), the women are now celebrated figures in the town, their work honoured at national festivals and on International Women's Day.

Delhi's Waste to Wonder Park Stands Tall as a Marvel of Innovation

Upcycling has transcended traditional crafts, pushing the boundaries of creativity by turning unconventional materials into stunning works of art. This imaginative process not only fosters innovation but also allows artists to express themselves by finding beauty and purpose in what was once discarded. A brilliant example of this concept is Delhi's Waste to Wonder Park, an initiative by the South Delhi Municipal Corporation. This park embodies the Swachh Bharat Mission's spirit, embracing the circular economy by transforming waste into sustainable art.

Launched in 2019 by Honourable Union Minister Shri Rajnath Singh, the park showcases replicas of the seven wonders of the world, each meticulously crafted from scrap materials by artists dedicated to the principles of upcycling. To bring this vision to life, SDMC enlisted the talents of 12 artists and 50 support staff. Together, they upcycled 150 tonnes of dry waste, including parts of old bicycles, broken benches, discarded trucks, and other scrap metal sourced from Delhi's landfills. The replicas—featuring the Pyramid of Giza, the Leaning Tower of Pisa, the Colosseum, Christ the Redeemer, the Taj Mahal, the Statue of Liberty, and the Eiffel Tower—stand proudly in Sarai Kale Khan, captivating visitors with their brilliance.

Operating on a self-sustaining, carbon-neutral model, the park is powered by three windmills generating 1 kilowatt each, 18 sun-tracking solar panels with a total capacity of 10 kilowatts, and three solar trees producing 5 kilowatts of energy. Not only does the park generate enough power to sustain itself, but it also exports excess energy to Delhi's power grid, demonstrating how waste can be converted into wealth.

Managed by the Delhi Tourism Department, the "Waste to Wonder" Park has quickly become one of the capital's top tourist attractions.

The Baini Sena Revolution Empowers Women and Transforms Cities in Haldwani

In the bustling city of Haldwani, the largest in the Kumaon region of Uttarakhand, a unique initiative called "Baini Sena" has transformed the landscape of solid waste management. This initiative, named after the Kumaoni term "Baini," meaning sister, epitomises the power of women's participation in civic activities. The city faced numerous challenges in managing its waste effectively. A scarcity of human resources, minimal monitoring of sanitation work, lack of a robust grievance redressal system, and low citizen involvement plagued the city's sanitation efforts. The monthly collection of user charges was around Rs 6 lakhs, underscoring the inefficiencies in the system as the user charge was low.

However, in October 2022, Haldwani underwent a significant transformation in its waste management system. The city's Municipal Corporation planned to involve women self-help groups (SHGs), already registered under the DAY-NULM scheme, to manage and monitor sanitation work comprehensively. What began as an effort to improve waste collection has since evolved into a model of sustainable urban governance and women's empowerment.

By November, these women were on the streets, tackling the city's waste management challenges head-on. They underwent rigorous training, covering waste collection techniques and public relations. Equipped with identity cards and supported by nodal officers, the SHGs were assigned specific wards to manage. A control room was set up to handle grievances and ensure smooth operations, while the Baini Sena monitored cleanliness, raised awareness about waste segregation, and promoted the ban on single-use plastics.

Through regular dialogue and effective service delivery, they won the community's trust. The results were transformative: user charge collections surged from Rs 6 lakhs to Rs 32 lakhs, and each SHG member earned an average of Rs 14,000 per month. Furthermore, waste collection reached 85 percent of households, significantly improving cleanliness and sanitation standards in the city.

Jandiala Guru's Transformation as a Model of Innovative Waste Management

Jandiala Guru, a town in Punjab's Amritsar district, faced a severe waste management crisis by late 2023. Generating six tonnes of waste daily, of which 3.7 tonnes was wet waste, the town lacked proper infrastructure and resources for waste processing. Sanitation workers were poorly equipped, and waste often did not reach processing facilities, leading to unhygienic conditions.

Recognising the urgent need for intervention, the Swachh Bharat Mission team conducted a detailed survey of Jandiala Guru in November 2023, revealing significant shortcomings in waste management. In response, the local administration prioritised waste management, securing funds to build an all-weather waste management unit. This project not only focused on improving infrastructure but also aimed at enhancing the working conditions of sanitation workers.

By early 2024, Jandiala Guru began to see tangible improvements. Waste processing pits were constructed, modern machinery was introduced, and sanitation workers were provided with personal protective equipment (PPE). The introduction of source segregation campaigns further helped improve efficiency, with 80 percent of households participating in waste segregation by mid-2024.

These upgrades transformed Jandiala Guru into a model for other towns in the region. The new waste management system drastically reduced unprocessed waste, eliminating open dumping, and creating cleaner streets and improved public health. The town's commitment to modernising waste management has made it a benchmark for other urban local bodies in Punjab and beyond, highlighting the impact of innovation, community participation, and administrative will in achieving sustainable waste management.

Cluster based Waste-to-Energy Facility in Visakhapatnam

Visakhapatnam, along with Guntur, has successfully adopted a cluster-based Waste-to-Energy (WtE) model as part of the Swachh Bharat Mission's Solid Waste Management component. This Public-Private Partnership (PPP) project, involving multiple Urban Local Bodies (ULBs) in Andhra Pradesh, has set a new standard for sustainable waste management.

The WtE plant in Visakhapatnam processes a significant amount of municipal solid waste (MSW), having already handled over 880,000 metric tonnes of waste. By converting waste into energy, the plant generates approximately 274.5 million units of electricity, providing a clean energy alternative while addressing the waste disposal challenge. The plant uses advanced technology to process waste, significantly reducing the environmental damage caused by traditional waste dumping methods.

This innovative project has not only addressed the city's waste crisis but has also created employment opportunities. The WtE initiative has provided 200 direct jobs and 500 indirect jobs, contributing to the local economy while promoting environmental sustainability. Furthermore, by reducing the reliance on landfills and minimising harmful emissions, the initiative has had a positive environmental impact.

Visakhapatnam's WtE model has become a replicable success story, demonstrating how cluster-based approaches can help cities efficiently manage waste while contributing to renewable energy goals. It stands as a powerful example of how public-private partnerships can drive urban sustainability and economic growth, making it a model for other cities across India to follow.

Kadapa's Dumpsite Rehabilitation Initiative

Kadapa, a city in Andhra Pradesh, has transformed a 55-year-old dumpsite into a thriving example of environmental rehabilitation. The dumpsite in Ukkayapalli was once infamous for emitting toxic gases and contaminating nearby water sources. For decades, the open dump posed a serious health risk to residents, contributing to air and water pollution. However, through collaborative efforts involving the Andhra Pradesh Pollution Control Board (APPCB), the World Bank, and local stakeholders, the city embarked on an ambitious rehabilitation project.

The project began with the closure of the dumpsite and the introduction of scientific methods for waste processing and rehabilitation. Kadapa's local government worked closely with environmental experts to implement advanced waste segregation techniques and establish a vermicomposting facility on the former dumpsite. The site now processes organic waste into high-quality compost, which is used in local agriculture, supporting farmers, and creating green jobs.

In addition to environmental restoration, the project has provided training and employment to residents, empowering them to manage the city's waste in a more sustainable manner. The dumpsite, once a source of pollution, has been transformed into a green space, complete with parks and open areas for the community. Kadapa's successful rehabilitation project has become a model for other cities grappling with legacy waste issues, showing how strategic interventions can turn environmental crises into opportunities for growth and sustainability.

Ahmedabad Pioneers Civic Engagement in Urban Sanitation

Ahmedabad has consistently been at the forefront of urban sanitation innovation. In 2009, the city introduced India's first Mobile Sanitation Court, an initiative aimed at enforcing sanitation laws and curbing littering through on-the-spot fines. By 2016, the court had collected over Rs 10.43 crore in penalties, demonstrating the city's commitment to maintaining cleanliness and civic order.

The city's Swachhata squad, a dedicated team of sanitation workers, regularly patrols public areas to ensure compliance with cleanliness standards. Additionally, Ahmedabad has implemented user charges for waste collection, generating approximately Rs 116 crore annually. This revenue supports the city's waste management infrastructure, ensuring timely waste collection and processing.

To encourage early tax payments and maintain civic engagement, Ahmedabad offers a 12 percent rebate to residents who pay their municipal taxes promptly. Furthermore, the city has established a robust complaint redressal system that allows citizens to report sanitation issues directly, ensuring swift resolution and enhancing accountability.

Ahmedabad's integrated approach to urban sanitation and civic management has set a high standard for other Indian cities. Its blend of enforcement, community participation, and financial incentives has not only improved public cleanliness but also fostered a culture of responsibility and pride among its residents. This pioneering approach has made Ahmedabad a leader in sustainable urban development, proving that cities can achieve remarkable results with the right combination of innovation and civic engagement.

Siddipet's Swachh Badi Becomes a Learning Hub for Community-Driven Sustainable Waste Management

Siddipet Municipality in Telangana has emerged as a leader in sustainable waste management, thanks to its innovative Swachh Badi Waste Management Training Centre. Established under the Swachh Bharat Mission 2.0, Swachh Badi is a unique initiative focused on capacity building, public-private partnerships, and community engagement to drive waste segregation, composting, and recycling.

At the heart of this initiative is the training of community members, including women's self-help groups (SHGs), local volunteers, and sanitation workers, in best practices for waste management. The training centre has become a hub of knowledge sharing, where residents learn the importance of source segregation and how to compost organic waste effectively. This focus on education has led to a significant improvement in waste management practices across the municipality, with higher rates of waste segregation and reduced dependence on landfills.

The Swachh Badi initiative also promotes public-private partnerships, encouraging businesses and NGOs to collaborate with the municipality in managing waste. This has resulted in improved recycling efforts and the creation of livelihood opportunities for local residents, particularly women. By integrating technology and community-driven solutions, Siddipet has significantly reduced its landfill use, improved environmental outcomes, and enhanced public awareness of sustainable practices.

Recognised as a replicable model, Siddipet's Swachh Badi initiative demonstrates the power of community participation in driving long-term sustainability. The municipality's efforts have made it a role model for other urban areas seeking to improve their waste management systems while fostering economic growth and environmental responsibility.

Mysore Zoo Thrives as a Sustainability Model for Urban Waste Management

Mysore Zoo has emerged as a sustainability leader, showcasing a model for effective urban waste management. As one of the oldest and most well-maintained zoos in India, the Sri Chamarajendra Zoological Gardens in Mysore, Karnataka, also known as the Mysore Zoo, is not just haven for the 3,000 species of animals it houses but also a shining example of sustainability in action. The zoo is visited by around 10,000 people daily, generating nearly 1,000 kilograms of waste each day. But rather than letting this waste become a burden, Mysore Zoo has developed an innovative, eco-friendly model to manage, segregate, and process it—all while turning a profit.

The waste produced within the zoo includes animal dung, leftover feed, food packaging, and horticultural waste. To manage this effectively, the zoo has turned to vermicomposting. This process begins with the collection of animal dung from various enclosures, which is then mixed with other organic waste to create vermicomposting beds. These beds are regularly watered and treated with Eudrilus eugeniae earthworms, known for their high fertility and rapid multiplication. Within a month, the composting process is complete, yielding rich, fertile humus. This vermicompost is then harvested, sieved, and packaged for sale to local farmers, allowing the zoo to produce 150-200 tonnes of compost annually.

A key feature of the zoo's sustainability efforts is its biogas plant, which is powered primarily by elephant dung. The biogas produced helps reduce the zoo's reliance on liquefied petroleum gas (LPG) for cooking, further reducing its carbon footprint. Additionally, the zoo has implemented an extensive rainwater harvesting system, which not only provides water for the animals but also supplies nearby communities, helping conserve water resources.

Mysore Zoo's efforts in waste management and sustainability have not only improved its environmental impact but also generated approximately Rs 14-15 lakhs annually in revenue.

Dehradun's Sanitation Park Sets a New Standard for Solid Waste Management

Established in 2019 in Nathuawala, Dehradun's "Sanitation Park" exemplifies sustainable waste management. Operated by Dehradun Nagar Nigam with the Feedback Foundation Charitable Trust, this innovative facility was established as part of a pilot programme with an ambitious goal: to achieve "No open waste" in the community.

Initially, the idea of a waste processing facility in their neighbourhood met with resistance from the residents of Nathuawala. However, through persistent dialogue, transparency, and a commitment to integrating the community into the project, the implementers gradually won public support. A key turning point was the decision to dedicate a portion of the facility's land as a recreational space, which now serves as a playground for children, blending utility with community well-being.

The Sanitation Park is thoughtfully organised into eight distinct zones, each dedicated to treating and processing a specific type of waste: e-waste, construction and demolition waste, domestic biomedical waste, domestic hazardous waste, recyclables, non-recyclable dry waste, and composting, with around ten compost pits. This meticulous segmentation ensures that every type of waste is handled appropriately, minimising the environmental footprint.

Serving around 3,500 units, including households, institutions, and shops, the facility operates on a door-to-door collection model. Waste is carefully segregated at the source into wet, dry, hazardous, and domestic biomedical categories before being transported to the plant. Biodegradable waste is channelled into compost pits, where it is transformed into nutrient-rich compost, while non-biodegradable waste is recycled, generating approximately Rs 35,000 in monthly revenue. Impressively, less than 5 percent of the waste processed here ends up in landfills.

The project team uses daily waste collection interactions as an opportunity to educate the community on the importance of proper waste management and effective segregation. They regularly organise clean-up drives, experiential learning seminars, and awareness campaigns like Swachhta rallies, actively engaging the Ward's residents—especially its youth.

Chennai Sparks Change with the Madras Waste Exchange

What began as a pilot project in Chennai, Tamil Nadu, has now grown into a nationwide tool thanks to its tremendous success in the city. Launched in 2019 by the Greater Chennai Corporation, the Madras Waste Exchange—now the India Waste Exchange—revolutionised waste management by connecting buyers and sellers of segregated waste. This innovative online platform was designed to address the challenges of managing segregated waste at Resource Recovery Centers, which often struggle with limited capacity. By bringing together key stakeholders like Urban Local Bodies, bulk waste generators, private households, entrepreneurs, and non-governmental entities, the portal facilitates the deliberate and controlled transportation and exchange of waste, both locally and nationally.

Implemented by the Greater Chennai Corporation in 2019, the portal established a consolidated solid waste management market online. On its first day, it attracted 30 registered buyers, with Chennai citizens and scrap dealers encouraged to use the platform to connect with potential buyers and sellers. The goal was simple: manage segregated waste effectively at competitive prices.

Accessible both as a website and through a mobile app, the Madras Waste Exchange quickly gained traction. Within just three months, over 1,000 buyers and 400 sellers were actively engaged, resulting in the sale of more than 700 tonnes of waste online.

The Madras Waste Exchange significantly reduced the amount of waste being sent to Chennai's landfills, offering a convenient and efficient way for stakeholders to track, understand, and participate in the waste management process. The platform also made a big impact on electronic waste management, transforming a previously unorganized sector into one of greater efficiency and transparency. Moreover, the data collected by the platform proved invaluable for policymakers, offering insights into collective progress and areas for improvement.

Today, the India Waste Exchange is available nationwide, providing a comprehensive and organised approach to waste management.

Bengaluru's Swachhagraha Kalika Kendra Nurtures a Sustainable Future

Karnataka's Swachhagraha Kalika Kendra, regarded as one of India's first solid waste management educational parks, dedicated to nurturing a community's commitment to sustainability, addresses this requirement of generating community interest and sensitivity towards sanitation, cleanliness, waste management, waste segregation, recycling, and composting. The facility is maintained and operated through the joint initiatives of the Hosur Sarjapur Road colony residents, many of whom are a part of the Solid Waste Management Round Table, and the Bruhat Bengaluru Mahanagara Palike.

At its core, the Kendra is more than just a facility; it is a place where ideas take root and grow into tangible actions. The centre is designed to be a hands-on learning space, sparking conversations, and imparting crucial knowledge for independent and community mobilisation, especially at the domestic level. It develops and communicates demonstrable methods of waste management, cleanliness, recycling, and composting.

Here, visitors are not just passive learners but active participants, engaging with over 20 home and community composting models under the guidance of experts in sustainable practices. These models, from vermicomposting to organic terrace gardening, empower individuals to become self-reliant in managing their waste and contributing to a cleaner environment.

With roofs made from upcycled tetra packs and storeroom walls built from construction debris, the facility embodies the philosophy of reuse and sustainability. It is a place where people can see, touch, and learn how to make a difference for the wider community. The biogas plant and various composting models demonstrate practical, do-it-yourself solutions, inspiring visitors to take these ideas back to their homes and neighbourhoods.

The centre inspired similar initiatives like "Swachhata Ki Paathshala" or a learning centre in Patna which is a collaborative effort of the Patna Municipal Corporation and GIZ. It is a testament to the scalability and replicability of such models and best practices nationwide.

Lonavala's Dry Passbook Scheme Turns Waste Management into a Learning Experience

The Lonavala Municipal Corporation, intending to generate interest and sensitivity towards waste generation, management and recycling initiated the "School Passbook" scheme to highlight and underline the role school children can and should play in the nation's efforts towards a "Swachh" Bharat.

One of the best ways to educate children about the Mission and its goals, is to try a hands-on approach wherein children actively participate in waste collection, learning how to identify the different types of waste generated at home and within their local communities, as well as the ways in which they might segregate and recycle them. Each student's efforts are recorded in a passbook, where they earn points based on the amount and type of waste they collect. These points contribute to the students' overall academic results, adding a tangible incentive for their participation. The passbook tracks not only the quantity of waste collected but also the types of waste, providing a comprehensive record of each student's contribution to a cleaner environment.

Since its inception in 2015, the Passbook Scheme has been adopted by many schools in Lonavala and has seen enthusiastic participation from over 9,000 students across 23 schools in Lonavala each year. This initiative aligns with the broader goals of the Swachh Bharat Mission, particularly its "Swachh Bharat: Swachh Vidyalaya" campaign, which emphasises the vital role of young people in achieving effective waste management and sanitation.

By integrating waste management with education, the initiative fosters environmental awareness and community involvement, aligning with Swachh Bharat Mission goals and creating a generation actively engaged in sustainable practices.

Chandigarh's MRF Centre Becomes a Boon for Women SafaiMitras

The Municipal Corporation of Chandigarh (MCC) has formalised the work of women SafaiMitras, previously ragpickers, by launching the first all-women Material Recovery Facility (MRF) called "Pink MRF." This initiative provides these women with stable incomes, access to government schemes, and recognition for their work. With 20 women now involved in various roles, the initiative has enhanced gender equity, improved waste management, and transformed the lives of these women, offering them dignity and better livelihood opportunities.

Trichy's Efforts to Create Single-Use Plastic-Free Zones

In Tiruchirappalli (Trichy), an inspiring initiative has taken root, led by the Tiruchirappalli City Corporation in collaboration with GIZ India to transform local markets into Single-Use Plastic (SUP)-free zones.

On July 1, 2022, the Indian government implemented a nationwide ban on SUPs, particularly targeting items that are often discarded after a single use and contribute significantly to litter. However, eliminating SUPs entirely, the Tiruchirappalli City Corporation launched a series of targeted interventions in the city's vegetable markets, known as "Uzhavar Santhai," to support the SUP ban and encourage sustainable practices.

The transformation began with a baseline survey to understand the existing practices and identify the barriers to adopting more sustainable habits. Public engagement was a priority: a signature campaign encouraged people to pledge their support for the SUP ban, and awareness campaigns placed informational boards throughout the markets to educate vendors and shoppers about the harmful effects of plastic and the benefits of switching to alternatives. To facilitate this transition, stalls offering SUP alternatives were set up, ensuring that vendors and customers alike could make the switch more easily. The "Thunippai Thiruvizha" initiative also played a crucial role, promoting the reuse of old clothes by offering free tailoring services to convert them into cloth bags right on the spot.

While enforcing penalties for SUP use has been difficult due to logistical challenges and concerns among vendors about losing customers to competitors still offering plastic bags. Thanks to these efforts, Trichy's markets have significantly reduced their environmental footprint, avoiding an estimated 5 tonnes of single-use plastic waste annually. Vendors are adopting eco-friendly alternatives: plastic straws have been replaced with paper ones, disposable cups and cutlery have given way to reusable steel options, and many customers now bring their own cloth or jute bags for shopping.

Building on the success of the first SUP-free market, this initiative has already been replicated in a second market, which has also been declared 100 percent SUP-free by the Urban Local Body and the agriculture department.

Gauthan's Impact on Kumhari in Transforming Livelihoods

Initiated in 2020 in Kumhari, Chhattisgarh, the Gauthan Initiative revolutionized rural livelihoods through a comprehensive model integrating agriculture, livestock management, and skill development. Gauthans, community-centric hubs, provided infrastructure for sustainable practices, empowering women, and enhancing economic growth. The initiative promoted composting and small-scale businesses, with vermicompost sales exceeding Rs 20 lakh. By focusing on community engagement and environmental sustainability, Gauthans not only improved livelihoods but also established a replicable model for rural development, earning recognition for its success in empowering women and boosting the local economy.

Jairampur's Zero Wet Waste Initiative Promotes Composting at Household Level

Jairampur ULB launched an initiative to set up composting facilities at the household level by distributing perforated concrete rings and bio-culture chemicals to reduce wet waste reaching landfills. Despite challenges like insufficient funds and labour shortages, the initiative focused on mixing wet waste with bio-culture chemicals for composting. Local SHGs under NULM played a crucial role in awareness campaigns and training. This method has significantly reduced wet waste in the town, aiming to make Jairampur a zero wet waste generator, receiving verbal appreciation from local authorities.

Merry Maidens of Shillong Empower Waste Pickers for a Sustainable Future

The Iainehskhem Self-Help Group, known as the "Merry Maidens of Shillong," is transforming waste management in Meghalaya. Originating from women waste pickers at the Marten landfill, the group now operates a Waste Recovery Centre that produces certified compost using indigenous methods. With training from the Urban Affairs Department, the group has created jobs, improved livelihoods, and promoted a green economy. Their success has inspired other regions, showcasing the impact of community-driven waste management and composting initiatives in rural and urban settings.

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Used Water Manag ement

Tirupati's Unique Revenue-Generating STP Model Boosts Circularity in Economy

Since its establishment in 1998, Tirupati's Sewage Treatment Plant (STP) in Thukivakam has been a cornerstone of the city's sanitation efforts, particularly under the Swachh Bharat Mission. By 2021, with 90 percent of the city's sewage connected to the Underground Drainage (UGD) Network, the STP processes 50 million litres of sewage per day. This has led to Tirupati being recognised as a Water Plus city.

The STP reuses 24 MLD of treated wastewater, generating Rs 6 lakhs monthly by selling 5 MLD to Srikalahasthi Pipes Ltd., while 18 MLD is provided to local farmers free of charge. Additionally, the treated water is used for city cleaning purposes such as watering road medians and parks. This circularity in water reuse not only contributes to environmental sustainability but also boosts revenue, making Tirupati's STP a model for other urban local bodies.

The innovative approach of diverting treated water for productive purposes like industrial and agricultural activities while supporting city operations highlights the sustainable practices of the STP. By addressing open discharge problems and enhancing groundwater quality, the plant has become a critical component of Tirupati's broader waste management efforts.

Leh Lays the Foundation for Groundwater Safety

In 2017, the town of Leh, facing groundwater contamination threats as 60 percent of its population relied on borewells, initiated an innovative faecal sludge treatment project. The Municipal Committee of Leh, along with BORDA, CDD Society, and Blue Water Company, introduced a decentralised wastewater treatment system using natural filtration methods. This Faecal Sludge Treatment Plant (FSTP) treated over 6 million litters of waste by 2020 and won the AMRUT Technology Challenge Award. The initiative successfully improved groundwater safety, servicing households, hotels, and army establishments while reducing environmental risks.

The FSTP uses planted drying beds and horizontal gravel filtration units to naturally treat wastewater, transforming sludge into organic soil conditioner. A specialised motor was also developed to allow suction trucks to operate efficiently in Leh's narrow streets, making it a regionally adaptive solution. Despite harsh winters and heavy tourism influx, Leh's model stands as a replicable success in faecal sludge management, emphasising the importance of community involvement in safeguarding natural resources.

Karad's Sustainable Wastewater Management in Action

Karad, a city in Maharashtra with a population of around 54,000, has made significant progress toward sustainable water management. The Karad Municipal Bureau, established in 1855, oversees a system that manages 9 MLD of wastewater daily, ensuring 100 percent of households and establishments are connected to the sewer network.

Before the implementation of modern wastewater management practices, Karad struggled with waterlogging and sewage discharge into water bodies. The city established six pumping stations and built a 79 km-long sewer network to address these issues. With advanced treatment technologies in place, the wastewater is now recycled for agricultural irrigation, roadside plantations, and cleaning purposes, reducing the strain on freshwater resources.

Karad's journey to Water+ status highlights the importance of small cities adopting innovative approaches to water conservation and reuse, showcasing how even smaller urban areas can contribute to sustainable development.

Efficient Water Management at Scale in Vijayawada

Vijayawada, a key city in Andhra Pradesh, has transformed its wastewater management system to achieve Water+ certification. With a population of over 1.1 million, the city generates 138 MLD of used water daily, all of which is treated through its extensive network of seven sewage treatment plants (STPs).

In the past, Vijayawada faced significant challenges with untreated sewage discharge, waterlogging, and open defecation. The Vijayawada Municipal Corporation (VMC) addressed these issues by expanding its underground drainage system and constructing additional STPs. Today, treated wastewater is reused for horticultural purposes, industrial cooling, and cleaning city streets. The introduction of robotic cleaners has improved sanitation safety, reducing the need for manual cleaning of manholes.

Vijayawada's Water+ certification demonstrates the city's success in integrating technology, infrastructure upgrades, and community involvement to promote sustainable water practices.

Panchgani's Path to Sustainability

Panchgani, a picturesque hill station in Maharashtra, has successfully balanced its growing tourism industry with sustainable wastewater management, earning Water+ certification. With a population of approximately 17,907 and a floating population of 2,200, the Panchgani Hill Station Municipal Council supplies 2.5 MLD of fresh water daily and manages the resulting wastewater through three strategically located sewage treatment plants (STPs).

Before modern wastewater management practices were implemented, the city faced issues like waterlogging and overflowing sewage, particularly during the monsoon season. The establishment of an underground sewerage network has resolved these problems, ensuring that 100 percent of the city's waste is collected and treated. Treated wastewater is reused for irrigation, horticulture, and gardening, reducing the demand on freshwater resources.

Panchgani's journey to Water+ certification underscores how small tourist destinations can implement effective wastewater management systems while maintaining their natural beauty and improving public health.

Kidwai Nagar East Establishes A Zero-Waste Model for Urban Sustainability

In the heart of Kidwai Nagar East, a remarkable transformation has taken place, turning the once waste-burdened neighborhood into a shining example of sustainability. Through the Swachh Bharat Mission-Urban, a range of cutting-edge initiatives have created a zero-waste, zero-discharge colony.

At the center of this transformation is a 3.65 MLD Sewage Treatment Plant (STP) that processes all wastewater onsite, ensuring that no waste enters the municipal sewer system. Complemented by a rainwater harvesting system and a 3.5 TPD solid waste management plant, the community achieves complete waste recycling and reuse.

The community has gone further with a state-of-the-art Construction and Demolition (C&D) Waste Recycling Plant, and two additional 1,500 KL/day STPs that recycle every drop of water. The treated water is repurposed for non-potable functions such as flushing toilets, maintaining green spaces, air conditioning, and road cleaning. A dual-pipeline system ensures effective water reuse, supporting a holistic approach to sustainability.

The initiative also integrates rainwater harvesting systems that recharge groundwater, significantly reducing reliance on external water sources. This has created a self-sustaining community where treated wastewater and harvested rainwater are repurposed efficiently, contributing to environmental preservation.

Under the Swachh Bharat Mission, NDMC has ensured that Kidwai Nagar East meets all ODF++ criteria. The used water from all toilets is directed into a comprehensive underground sewer system for safe processing. The area benefits from scheduled sewer cleaning, employing mechanised methods and maintaining pristine sanitation conditions. The revenue generated from the efficient operation and maintenance of sewer networks and STPs further highlights the community's dedication to a sustainable urban lifestyle.

Kidwai Nagar East has set a powerful example of how urban communities can integrate advanced waste and water management systems to achieve a zero-waste, zero-discharge model, contributing to environmental conservation and urban resilience.

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Sanitation

Dhenkanal's Community-Run Toilets Serve as a Model for Inclusive Sanitation

In Odisha's Dhenkanal Municipality, a pioneering model of community-led sanitation was initiated through partnerships with Self-Help Groups (SHGs) of marginalised women and sanitation workers. The Dhenkanal Municipality selected eligible and interested SHGs for outsourcing operations of community toilet. The Municipality prioritised supporting SHGs from vulnerable communities for engaging them in sanitation work. Omm Sai SHG, comprising women sanitation workers, was awarded the contract to operate and maintain six community and nine public toilets. This model was implemented under the state's guidelines to engage marginalised groups in sanitation work, providing them with stable livelihoods.

The SHG members took on the responsibility of cleaning and maintaining the toilets, paying for consumables like cleaning supplies and conducting minor repairs. The SHG earns an income of Rs 70,000 per month, while incurring an expense of around Rs 22,000 for operations. The municipality covers utility bills and major repairs, making the initiative financially sustainable.

The toilets themselves are designed with accessibility in mind, featuring ramps for disabled users, sanitary napkin incinerators, and separate entrances for men and women. These are typically 5-seaster toilets. These toilets also have a QR-code system to obtain feedback and suggestions. Each community toilet serves around 200-250 people daily, with footfall increasing during festive seasons. The involvement of the community in managing these facilities fosters a sense of ownership and accountability, ensuring better maintenance than private contractors might provide.

To strengthen the monitoring system, standard bookkeeping formats were introduced, and the caretakers of the community and public toilets were trained to fill them.
The Municipality was one of the first pilot cities to implement sanitation activities as per MoHUA convergence guidelines. This successful model has been replicated across other cities in Odisha and Telangana, demonstrating the potential of community-led sanitation initiatives to empower marginalised groups while improving public health and hygiene.

Suvidha Community Complex Brings Transformative Change to Sanitation in Dharavi

In Dharavi, Mumbai—one of the world's largest and most densely populated slums—the lack of proper sanitation facilities was a severe health and dignity challenge for over a million residents. To address this, the Municipal Corporation of Greater Mumbai in collaboration with Hindustan Unilever Limited (HUL), launched the Suvidha Community Sanitary Complex in 2016.

Suvidha was designed under a public-private partnership (PPP) model and has since redefined sanitation for the urban poor. The facility, which spans 2,000 square feet, provides not only toilets but also critical services like drinking water, showers, and laundry stations—integrating hygiene and daily needs into one solution. Each of the 111 toilet seats is well-maintained and accessible at an affordable cost of Rs 5 per use, ensuring that residents can access clean sanitation without financial strain.

The complex operates from 5 AM to 11 PM and is used by over 1,500 people daily. By incorporating technology such as prepaid smart cards, users can manage their usage efficiently. This system has helped foster a sense of ownership and dignity among Dharavi's residents, particularly women and children, who now have safe, private, and hygienic facilities. The project also introduced a wastewater treatment plant, which recycles over 75 percent of the water used, drastically reducing the environmental impact, and promoting sustainability.

In addition to toilets, the complex has six shower areas and ten laundry stations, easing the burden of accessing clean water for everyday needs. Before Suvidha, residents had to walk long distances for basic facilities, often paying inflated rates for water. With Suvidha, these challenges have been reduced, leading to a significant improvement in the quality of life for thousands of families.

The success of Suvidha in Dharavi has spurred plans for replication. To date, two additional Suvidha complexes have been set up in Mumbai, serving similar populations.

Divyang Toilets Paves the Way for Accessible Public Sanitation in Nellore

In Nellore, Andhra Pradesh, an inspiring initiative is reshaping the city's approach to inclusive sanitation. Recognising the need for accessible toilets for individuals with physical disabilities, the Divyang Toilets were developed to cater to the specific needs of people with disabilities. This initiative, part of the Nadu-Nedu programme, set out to establish design standards that would ensure public sanitation facilities are accessible to all.

The Divyang Toilets stand out for their thoughtful design, incorporating features that make them user-friendly for those with mobility challenges. Ramps for easy entry, wide entrances for wheelchair access, and adjustable support infrastructure are just a few of the key features that set these toilets apart. Every aspect of the toilet design is carefully considered, from the placement of mirrors to door configurations, ensuring that users can navigate the space with ease. Additionally, the toilets are equipped with support bars and handrails to assist users in maintaining balance, further enhancing their usability.

A total of 77 public toilets in Nellore were retrofitted as Divyang Toilets, with one seat each for male and female users. This massive undertaking involved transforming existing facilities to meet the stringent accessibility standards. The cost for retrofitting these 77 toilets was approximately Rs 24 lakhs, with an additional Rs 7 lakhs allocated to Sulabh International for supervision and support. The initiative reflects the commitment of the Nellore Municipal Corporation to create a city where sanitation is accessible to all, regardless of physical abilities.

These facilities, strategically located in public spaces, aim to serve a diverse population, including individuals with disabilities, elderly citizens, and others who require assistance with mobility. By providing accessible toilets, Nellore is promoting a more inclusive society, ensuring that everyone, regardless of physical ability, can use public sanitation facilities with dignity.

SHE Toilets Empowers Women's Sanitation Needs in Warangal

In Warangal, Telangana, the Greater Warangal Municipal Corporation identified a significant gap in the use of public toilets by women, despite numerous facilities being built across the city. Almost all women surveyed (99.5 percent) had a public toilet near their home, but very few used them. Concerns over safety, cleanliness, privacy, and the presence of male caretakers often deterred women from using these facilities. An in-depth study by the Administrative Staff College of India (ASCI) highlighted the need for exclusive women-only toilets with female caretakers, running water, and facilities like sanitary pad disposal units.

Responding to these findings, Warangal pioneered the construction of SHE Toilets—public toilets exclusively designed for women with enhanced safety and sanitation features. These toilets are strategically located in accessible areas such as institutional grounds, markets, and parks, and feature sanitary napkin vending machines, incinerators, and well-maintained washrooms with handwashing stations.

The success of SHE Toilets in Warangal inspired the Government of Telangana to scale up the initiative across the state. Over 55 SHE Toilets have since been constructed in various towns, and plans are underway to build more in police stations and universities. This initiative addresses the challenges faced by women, including police officers and students, and ensures their access to clean, safe, and dignified sanitation facilities. The SHE Toilets not only provide essential sanitation but also serve as a model for inclusive infrastructure that empowers women in public spaces.

Sunidhi Toilets Offer a Scalable Model for Women's Public Sanitation in Dindigul

In Tamil Nadu, women often faced challenges in accessing clean, safe, and hygienic sanitation facilities. To address this pressing issue, the WASH Institute, in partnership with local urban authorities, designed the Sunidhi Toilet—a model specifically tailored to meet the needs of women, particularly travellers, students, and working women in urban areas.

The Sunidhi Toilets are prefabricated units, designed for quick installation and cost-efficiency. Unlike conventional public toilets, which take weeks or months to construct, Sunidhi Toilets can be installed in just two days. Made from ferro-cement, the modular components are fabricated in a factory and then assembled on-site. This approach not only reduces costs—estimated at around Rs 2 lakhs per unit, which is cheaper than traditional toilets—but also ensures faster implementation, especially in areas with a high floating population.

One of the standout features of Sunidhi Toilets is their design, which incorporates both Indian and Western-style water closets to cater to the preferences of different users. The toilets are equipped with sanitary napkin vending machines, electronic incinerators for disposal of menstrual waste, and wash basins with mirrors, making them highly functional for women, especially during their menstrual cycles. These user-friendly facilities are connected to either a leach pit or an underground drainage system, and the water supply is drawn from borewells or municipal sources.

In Dindigul and Madurai, 73 Sunidhi Toilets were installed in high-traffic public spaces such as bus stands, parks, markets, and hospitals, serving around 2,350 women daily. In Dindigul alone, five toilets have been operational since 2018, while in Madurai, eight were constructed in 2019. Each toilet sees an average daily usage of 750-1,000 people, underscoring their importance in these busy urban centres.

The Sunidhi Toilets have been lauded for providing comfort, convenience, and dignity to women in public spaces. Feedback from users has been overwhelmingly positive.

Pune's Innovative 'Ti' Toilets Sets an Example for Inclusive Sanitation

The tripartite challenge of waste management, equal access to sanitation, and improving the serviceability of public toilets finds a comprehensive solution in Pune's "Ti" toilets. Launched in 2016 and conceptualised by Saraplast Pvt. Ltd. in partnership with the Pune Municipal Corporation (PMC), these toilets exclusively serve women. Named after the Marathi word "Ti," meaning 'she' or 'her', the initiative repurposes old, defunct buses into fully functional public toilets, painted in bright pink, making them a distinctive feature in the city.

Ti toilets address common issues such as poor sanitation, inadequate maintenance, and the safety concerns typically associated with public restrooms. Each bus is equipped with washbasins, soaps, sanitary napkin vending machines, and both Indian and Western-style toilet units, ensuring comfort and convenience. Solar panels mounted on the bus roofs power lights, television sets, and other electronic systems, making the facilities self-sustaining. Additionally, humidity and moisture control mechanisms help regulate odours, while a temperature control system ensures user comfort. For emergencies, panic buttons are installed, and each toilet always has an attendant present.

One of the standout features of Ti toilets is their integration of a sustainable revenue model. Next to each toilet is a small café, run by the attendant, which sells packaged food items. This café not only ensures the financial sustainability of the toilets but also makes them free of charge for users, removing a common barrier to accessing clean, safe sanitation facilities.

Initially, the project faced scepticism. Many feared that the toilets would either be too expensive or poorly maintained. Recruiting attendants to manage the facilities was also challenging due to the social stigma attached to sanitation work. Despite these challenges, the initiative gained traction. By 2020, 12 "Ti" buses were operational across Pune, each seeing over 300 users per day.

The success of "Ti" toilets showcases how innovative thinking and community-centric design can transform public sanitation.

‘Take a Break’ Makes a Step Towards Enhanced Public Sanitation in Kottayam

The “Take a Break” project in Kottayam and Vaikom Municipality is a key part of Kerala’s broader initiative to improve waste management and public sanitation. This project aims to provide clean, convenient rest areas in high-traffic locations, offering much-needed services to residents and travellers alike. Funded under the Swachh Bharat Mission (SBM), these facilities are designed not only to enhance public hygiene but also to promote sustainable waste management practices.

In Kottayam, the “Take a Break” facility is nestled in Nagampadam, just 200 meters from the busy MC Road. This aspiration-class centre includes a tea café, car parking, and other essential amenities. It is managed by a dedicated team of three workers who ensure that the facilities remain clean and well-maintained. On average, 20 people use the facility daily, making it an important rest stop for commuters and locals. By providing clean and safe areas for rest, the project has successfully improved the hygiene and convenience of public spaces in the area.

Similarly, the “Take a Break” project in Vaikom is located at Dhalavakulam and is classified as a standard-class facility. Like its counterpart in Kottayam, this facility focuses on promoting cleanliness and providing essential public amenities. Also funded by the Swachh Bharat Mission, it contributes to waste management efforts and ensures that both residents and visitors have access to comfortable, accessible services.

Lightbox Toilets Provides a Safe and Inviting Public Sanitation Model for Women in Thane

Public toilets in India have long been plagued by poor maintenance, dark and dingy environments, and concerns over safety—especially for women. In Thane, this issue was particularly evident. The lack of safe, well-lit, and hygienic public sanitation options discouraged many women from using public toilets, limiting their mobility and access to opportunities.

In response, the Thane Municipal Corporation partnered with RC Architects to develop a groundbreaking solution: the Lightbox Toilets—public restrooms exclusively designed for women. The aim was to provide accessible, well-maintained, and inviting restrooms, ensuring that no woman would have to walk more than 500 meters (or 7-8 minutes) to access one.

The design of the Lightbox Toilets stands out for its use of skylights in place of windows, ensuring well-lit interiors while minimising maintenance issues. These restrooms are not just functional but also visually appealing, with clean lines and durable materials like aluminium composite panels, and polycarbonate roofing for natural lighting. The thoughtful design extends to safety features, including CCTV cameras, panic alarms, and concealed plumbing and electrical systems to enhance user security.

Inside, the Lightbox Toilets are equipped with several women-centric amenities, including sanitary napkin vending machines, incinerators, nursing rooms, and facilities for people with disabilities. The eco-friendly design incorporates a bio-digester that treats waste on-site, reducing water consumption and making the facility sustainable. Each toilet block also includes a seating area with greenery, creating a calm and inviting space for women to rest and recharge.

The first prototype was launched at Teen Haath Naka, and after its success, the TMC scaled the model, constructing 74 Lightbox Toilets across the city. These units are strategically placed within a 500-meter radius, ensuring easy access for pedestrians. Each Lightbox serves between 250 and 500 users daily, with user fees set at 5 to cover maintenance costs.

Haridwar Leads the Way with State's First Smart Public Toilet

In 2022, Haridwar became home to Uttarakhand's first smart public toilet, marking a significant step forward in public sanitation. This modern facility is not just about improving infrastructure, but about restoring dignity and comfort to millions of residents and visitors. As one of India's most important spiritual cities, Haridwar welcomes over 50 lakhs visitors annually, particularly during the Char Dham Yatra, in addition to its 231,338 residents.

Overwhelmed by the sheer number of users, the city's public toilets struggled with cleanliness and maintenance, leaving both residents and pilgrims dissatisfied. The need for change was driven by community concerns. In 2022, the Chief Minister of Uttarakhand, along with the District Magistrate of Haridwar, inaugurated the state's first smart public toilet, ushering in a new era of public sanitation.

The smart toilet is a product of a public-private partnership and stands as a symbol of collaboration between the Haridwar Municipal Corporation and the community. Equipped with separate areas for men, women, and disabled individuals, these toilets ensure accessibility for all. Additionally, the facility includes sensor-equipped urinals, hand wash stations, hand dryers, and a small cafeteria. The waiting area is thoughtfully designed, offering comfortable seating and even a television, providing a relaxing space for users.

The smart toilets not only cater to basic hygiene needs but also emphasise user comfort and well-being. As of 2024, seven out of the planned 20 smart toilets are operational, and the feedback has been tremendously positive. The project has significantly enhanced the experience for both tourists and pilgrims, setting a new benchmark for public amenities in Haridwar. Moreover, the smart toilets have proven to be financially sustainable, showing how innovative urban planning can drive both progress and prosperity for local governments. These toilets are more than just modern facilities—they represent what can be achieved when a community and its leaders work together toward a shared goal.

Bundu's Swachh Sangrahalay Paves the Way for Sanitation Awareness

In Bundu, a divisional town in Jharkhand's Ranchi district, the challenge of raising public awareness around sanitation was a vital part of the Swachh Bharat Mission. Recognising the need for a deeper engagement with citizens, the Bundu Municipal Corporation took an innovative step to not only inform but also inspire. They established the "Swachh Sangrahalay," a unique museum dedicated to showcasing the various aspects of sanitation through interactive models and exhibits.

The Swachh Sangrahalay serves as a mini museum that brings to life the entire process of sanitation, from waste collection to treatment, in a highly visual and engaging format. Miniature and live models depict the journey of waste management, including door-to-door waste collection, segregation, and the operation of treatment plants. Visitors can see a functioning model of a Faecal Sludge Treatment Plant (FSTP) and learn about managing construction and demolition (C&D) waste. The museum also highlights the crucial role of SafaiMitras, or sanitation workers, in maintaining the city's cleanliness. Additionally, it illustrates the negative effects of poor sanitation on human health and the environment, driving home the urgency of robust sanitation measures.

The impact of the Swachh Sangrahalay has been transformative. By visually illustrating the sanitation journey, the museum provides a comprehensive understanding of the efforts undertaken by the government to improve hygiene and waste management. It has become a particularly effective tool for educating children, offering them a firsthand look at the importance of sanitation in maintaining public health and environmental well-being. These young visitors are not only informed but also inspired to adopt and promote good sanitation practices.

Through the Swachh Sangrahalay, Bundu Municipal Corporation has created a space where learning about sanitation is interactive and memorable. This initiative not only reinforces the importance of safe sanitation but also raises awareness and fosters community responsibility for cleanliness.

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