INTEGRATED IMPACT ASSESSMENT REPORT - DELHI, BENGALURU, HYDERABAD

Project Period (2022-2023)

Report Prepared by Surge Impact Foundation

March 2025

WOW Program: ‘WOW – Wellbeing Out of Waste’, enables the creation of a clean & green environment and promotes sustainable livelihoods for waste collectors. The program is operational in Bengaluru, Mysuru, Hyderabad, Coimbatore, Chennai, Delhi, major towns of Telangana and several districts of Andhra Pradesh.

The quantum of dry waste collected during the year was about 63,700 MT from over 1,500 wards. As of FY 2024, the program has covered over 2.5 crore citizens in over 64 lakh households, 67 lakh school children and around 2,200 corporates since its inception. It has promoted sustainable livelihood for over 17,800 waste collectors by facilitating an effective collection system in collaboration with Municipal Corporations.

The intervention has also created over 150 social entrepreneurs who are involved in optimizing value capture from the collected dry waste.

Overview

The ITC Wellbeing Out of Waste (WOW) program is a flagship initiative aimed at transforming urban waste management through sustained awareness, stakeholder engagement, and promotion of the 3Rs—Reduce, Reuse, and Recycle. The program operates across Delhi, Bengaluru, and Hyderabad, in collaboration with urban local bodies and implementation partners.

Key Interventions

Delhi:
Faced with the challenge of managing 10,990 tonnes of daily solid waste and limited treatment capacity, WOW initiated intensive door-to-door awareness campaigns in six major zones. Key interventions included the creation of model colonies, promotion of home composting, support to zero-waste offices, and AI-integrated waste education in schools. These were implemented in partnership with E Sree Foundation.

Bengaluru:
In partnership with BBMP, WOW supported operations at Dry Waste Collection Centers (DWCCs) and enhanced efficiency through large-scale household awareness drives. The program reached 2,88,824 households, 194 educational institutions, and 63 corporates. It also provided livelihood support to 52 DWCC operators and 628 waste workers, through partners Samarthanam Trust for the Disabled and E Sree Foundation.

- 96.8% of respondents are currently practicing source segregation.
- 96.8% of respondents have access to a segregated waste collection system.
- 95.5% of those who segregate waste have noticed improvements in cleanliness or waste management in their area, indicating a positive impact of the campaign.

Hyderabad:
Active since 2007, WOW’s 2022–2023 efforts in Hyderabad reached 72,196 households and 188+ educational institutions through its implementation partner MARI. Trained 83 Community Resource Persons conducted door-to-door campaigns. Additionally, a unique school recycling rewards program impacted over 36,000 students by promoting environmental responsibility and incentivizing the segregation of dry waste.

Purpose of the Assessment

The assessment across all three cities aims to:

- Evaluate the impact of WOW interventions on behavioral change, waste segregation, and ecosystem improvements.
- Provide insights and recommendations for enhancing program effectiveness.
- Support data-driven decision-making for future urban waste management initiatives.

Methodology

A consistent mixed-methods approach was used across cities:

- Primary data was gathered through field surveys, telephonic interviews, and KAP (Knowledge, Attitudes, Practices) assessments with households, students, RWAs, corporates, and local stakeholders.
- Secondary data was derived from program records of implementing agencies.
- Sampling techniques included representative, convenience, and purposive sampling tailored to respondent categories and objectives.
- Participatory frameworks and the Action Learning Cycle guided the design, stakeholder engagement, and iterative learning throughout the assessment process.

Key Findings

1. Door-to-Door Awareness Campaign

- Reached 4,14,520 households, improving awareness about source segregation. However, motivation was largely driven by fear of fines rather than education.
- Gated communities showed the highest engagement and benefited the most due to structured waste management systems.
- Non-gated and slum communities faced challenges like poor infrastructure and inconsistent implementation, limiting the effectiveness of the campaigns.

2. Model Colonies

- The Brotherhood Society's zero-garbage initiative significantly enhanced environmental sustainability, increased property value, and inspired neighboring communities.
- Improved livelihoods of waste collectors by promoting safer work environments, better income, and enhanced dignity through household-level segregation.
- While the initiative encouraged segregation, challenges persist—particularly around behavior change, inconsistent practices, and lack of community composting facilities. Further alignment, education, and incentives are needed.

3. Home Composting

- The initiative enabled households to convert wet waste into compost with adequate support and guidance from ITC WOW, promoting sustainable practices at the household level.

4. AI for Waste Management

- The AI Lab initiative enhanced waste segregation knowledge among students, leading to better engagement and behavioral shifts extending to families and communities.

5. Central Hub

- Successfully collected 203 MT of dry waste, boosting income for informal waste workers and ensuring no dry waste ended up in landfills.

6. Other Initiatives

- Programs like Khatashaala, ISRC, and Kanni se Panni drove behavioral change, waste reduction, and recycling across schools, homes, and public spaces, fostering a more sustainable and waste-conscious society.

Door-to-Door Awareness Campaign on Source Segregation

Demographic Profile: Household Survey

Across 2022-2023, the households reached through door-to-door propagation was 414520. The areas covered included South, Central, West, Najafgarh, Civil line, Keshav Puram, Rohini and Karol Bagh.
The no of gated households reached was 31478 from 148 colonies, non-gated was 377843 from 62 colonies and slum was 5199 from 6 colonies. The analysis in this section is based 2344 entries.
Of these 2344 households, approximately 1944 belonged to Non-Gated communities, which formed about 83% of the total stakeholder interaction. 351 and 49 households belonged to Gated Communities and Slums respectively.

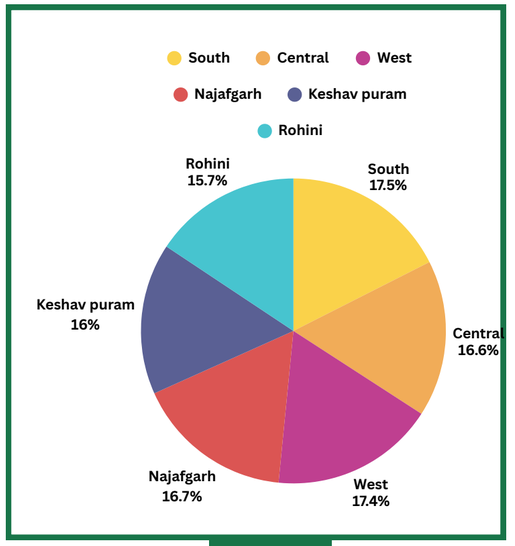


Figure no. 1

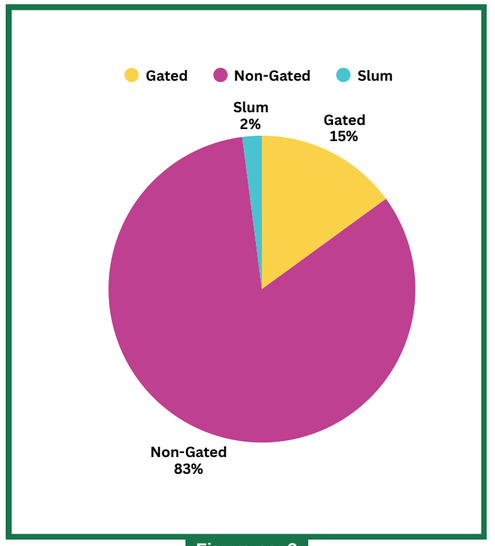


Figure no. 2

There is varied experience with waste management systems among different geographical areas and community orientations. In terms of urban development, Najafgarh and Central Delhi are the oldest areas followed by South Delhi and West Delhi. Keshav Puram and Rohini are relatively newer areas of Delhi.
The gated communities typically have more structured systems whereas non-gated communities may face challenges related to inconsistent infrastructure and varying levels of awareness. Conversely, slum areas often encounter the greatest waste management difficulties due to a lack of access to resources.
The waste management infrastructure (household) typically influences the level of awareness and participation.

Highlights

- 77.9% of the survey respondents highlighted Composting and Recycling as primary reasons for segregation.
- 88% believe that penalties/fines should be imposed for non-segregation.
- 63% expressed willingness to participate in neighbourhood programs to increase awareness on waste segregation.
- 47.3% are currently segregating at source. 36% adopted segregation post the awareness program.
- 48.8% observed positive changes in cleanliness or waste management in their area since the campaign.

Knowledge

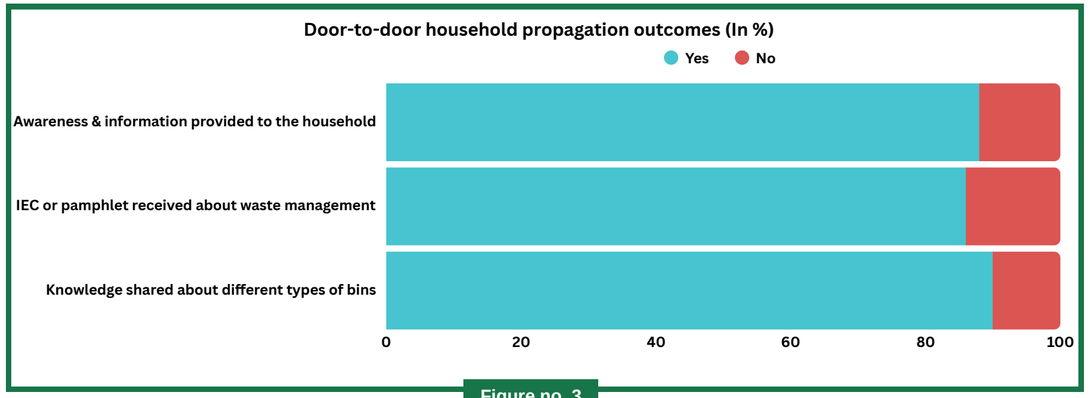


Figure no. 3

86.3% of surveyed households expressed agreement with receiving information and pamphlets on waste management indicating the success of the awareness campaigns in reaching the target audience.
A majority of the surveyed households, indicated that there are 3 distinct bin types, demonstrating the effectiveness of the awareness campaign in raising awareness and knowledge on 3 categories of household waste.
77.9% of the surveyed households identified recycling and composting as the primary reason for waste segregation, while a smaller number also believed it is required so that the segregated food waste can be given to animals.
Composting and Recycling has been repeatedly highlighted as main purpose of segregating the dry & wet waste, while safety of waste collectors and burning of waste have also been the major factors behind segregation of hazardous waste.

Attitude

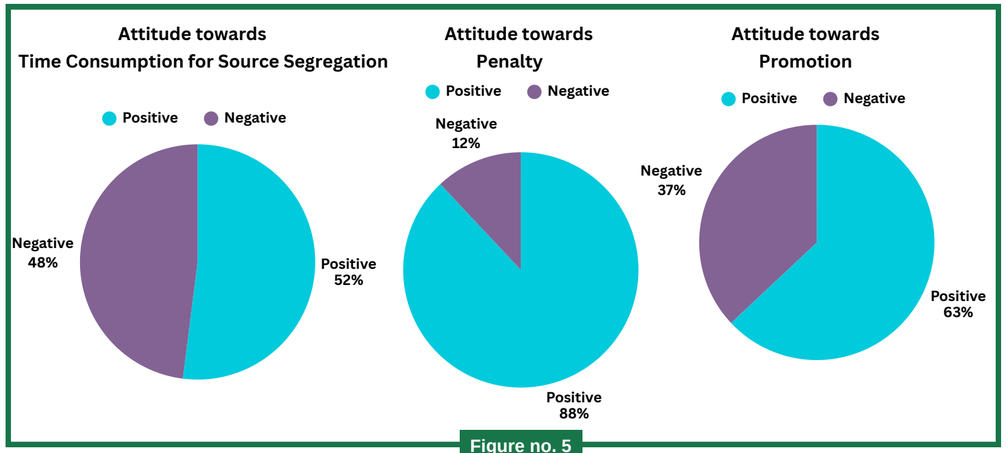


Figure no. 5

The attitude towards time consumption refers to the respondents' perception that waste segregation is a time-consuming process. However, upon further interaction, they acknowledged that this challenge can be overcome by adopting regular source segregation.

Most respondents believe that fines or penalties should be used as a powerful tool to encourage waste segregation among stakeholders and deter improper waste management practices. The reason behind this opinion being held by a significant majority is that financial consequences can motivate stakeholders to follow the rules and prioritize responsible disposal.

However, a small minority expressed disagreement with this approach. Fines alone won't address the root causes of improper waste management such as lack of awareness, infrastructure or support. Instead they believe in more positive reinforcement or capacity-building strategies like education or incentives to encourage compliance.

While the majority of respondents expressed a willingness to participate and actively contribute to the program, a considerable proportion of respondents showed a lack of interest in joining such initiatives.

The majority's positive response suggests a general recognition of the importance of waste segregation and a willingness to contribute to collective efforts.

Practice

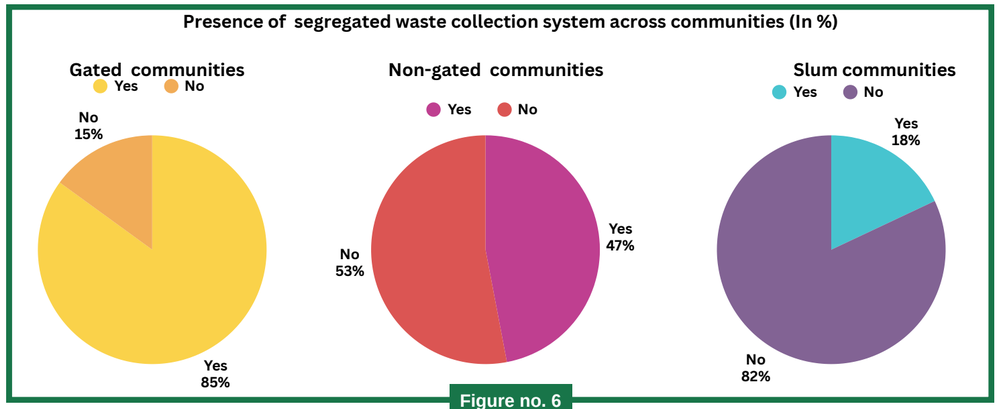


Figure no. 6

Segregated waste collection systems vary depending upon the type of community. Due to the internal administrative presence like RWA, a majority of the gated communities have segregated waste collection facility that control waste management practices.
In contrast, segregated waste collection in non-gated communities is relatively lower. In slum communities, it is highly informal and unorganized. Most non-gated communities without segregated collection systems exist in Central, Najafgarh, South, Rohini and West zones. A stark majority of the slums do not have a separate waste collection system.

The data highlights that segregated waste collection systems play a crucial role in encouraging household-level segregation. While 52% of respondents have access to such systems, 48% do not—hindering motivation to segregate waste despite awareness efforts. Only 47.3% practice segregation at source, with 36% adopting it after the ITC WOW awareness campaign, showing the campaign's positive influence. However, due to inadequate collection infrastructure, only 36% could fully benefit from the program.
Neighborhood type influences segregation levels: gated communities show better compliance due to internal regulation, while non-gated areas and slums lag significantly. Overall, 48.8% observed improvements in cleanliness post-campaign, but 51.7% did not, suggesting uneven impact. Contributing factors include lack of collection systems (34%) and irregular services (17.7%), underscoring the need for both infrastructure and sustained community engagement.

Overall the campaign seems to have been effective in encouraging more people to set up the necessary facilities for proper waste management contributing to better waste segregation practices.

Key Findings

- Knowledge: The awareness campaigns successfully reached over 4,14,520 households effectively raising awareness about waste segregation. Most respondents correctly identified the types of bins and understood the importance of composting and recycling.
- Attitude: Some found waste segregation time-consuming and most supported fines as a motivator. A minority preferred positive reinforcement like education and incentives to address waste management challenges.
- **Practice:** Segregation was highest in gated communities due to structured systems while non-gated and slum areas lagged due to inadequate infrastructure. Only 36% of households fully utilized program benefits underscoring the need for better support systems.

- **Suggestions for Improvement:** Regular education, better waste collection systems, increased dustbins and improved municipal support are needed to enhance waste management and sustain behavioral change across all community types.

- **Effective Reach and Varied Impact:** The program reached 4,14,520 households across diverse areas including gated, non-gated and slum communities. Gated areas benefited from structured management while non-gated and slum areas faced challenges like poor infrastructure and limited resources. Positive changes were observed in many areas post-campaign but impact varied with some households not noticing any improvements indicating uneven effectiveness across communities.

- **Awareness Campaign Success but Gaps Persist:** The awareness campaigns successfully raised knowledge about waste segregation with most households recognizing the importance of recycling and composting. However, gaps in applying this knowledge remained particularly in non-gated and slum areas that lacked proper infrastructure. Consistent reinforcement and targeted approaches are needed to ensure knowledge translates into practice especially where existing systems are inadequate.

- **Behavioral Challenges and Need for Infrastructure:** Behavioral change was highest in gated communities due to structured waste systems but non-gated and slum areas struggled due to poor infrastructure and discouraging segregation efforts. Many viewed segregation as time-consuming task highlighting the need for improved waste collection services, more dustbins and stronger municipal support to sustain positive behavior change and address community-specific needs.

Overall, while the campaigns were effective in raising awareness addressing behavioral and infrastructural challenges is crucial to ensure consistent waste segregation across all community types.

Segregation of Waste at Source: Model Colonies

Case Study: Paryavaran Mitra‘s Mission: Zero Garbage Stench in Delhi

Mr. Surendra Kalra, Secretary of Brotherhood Cooperative Group Housing Society in Delhi’s West Zone since 2017, undertook waste management as a social responsibility, aiming to transform his colony into a zero-garbage model. Motivated by Delhi’s poor waste conditions, he faced challenges including resident apprehension and untrained domestic staff.

To overcome these, he implemented strategies such as seminars (supported by ITC WOW and MCD), a two-bin system, fines, compost demonstrations, and community incentives. ITC WOW played a vital role in awareness, household outreach, and sustained engagement during a pilot project.

By 2023, the society achieved 100% waste segregation and was recognized as a zero-garbage zone, receiving official awards. The initiative led to greener surroundings, increased property value, and inspired nearby societies to adopt similar practices. Mr. Kalra’s leadership earned him the title "Paryavaran Mitra" from the Delhi government.

Once I was traveling from Amritsar to Delhi and I was traveling through Volvo bus there a Sardar was telling to his son that if you can feel the foul smell, then you can think that Delhi has arrived. And I really felt bad, and I decided to do something about it.”

Key Findings

- Zero Garbage-Brotherhood Society: Enhanced property value, inspired neighboring communities and gained recognition for being a zero garbage community.
- Enhanced Waste Collectors’ livelihoods: Improved waste collectors' safety, income, working hours and dignity through better segregation levels owing to awareness campaign.
- Promotion of Source Segregation: ITC WOW program effectively motivated residents to adopt segregation practices through consistent follow-ups by a dedicated team.
- Importance of Alignment: A successful waste segregation system requires residents and waste collectors to be aligned and educated necessitating enhanced training and engagement which was evident from the case study and survey results.
- Need for Community Composting: There is a lack of community composting facilities and expanding these initiatives is essential for managing organic waste.
- Segregation Challenges: Issues include mindset, domestic help turnover, inconsistent collector practices and residents’ preference for convenience.
- Improved Sanitation Levels: The overall cleanliness of the society improved significantly as segregated waste is easier to manage and process.
- Recommendations: Expand composting, improve monitoring, increase awareness programs and offer incentives for compliance with penalties for non-compliance.
- Marketing and Promotion: Effective marketing strategies are crucial for raising awareness and engaging a wider audience in waste management initiatives.

Wet Waste Composting: Home Composters

The ITC WOW Home Composter Programme equipped 452 residents with compost bins and training to manage wet waste at home. Feedback from 12 diverse participants—mostly women—highlighted positive outcomes in waste segregation and composting practices. Practical demonstrations and user-friendly bins helped beginners understand composting, though participants requested more clarity on timelines and liquid removal stages.

Key motivations included reducing waste, creating homemade manure, and promoting sustainability. Many were inspired to influence their communities through RWAs. Participants appreciated ITC WOW’s continuous support and emphasized the need for sustained awareness, personalized guidance, and promotion of composting benefits to boost long-term adoption.

Key Findings

- **Utility of Resources:** Compost bins provided by ITC were user-friendly, especially for beginners.
- **Adopted Composting Practices:** Participants learned segregation, composted wet waste like vegetables and fruits and appreciated hands-on demonstrations.
- **Need for More Clarity**: While participants understood composting steps, they sought clearer timelines especially on removing compost liquid. Suggestions included machines for community composting and personalized household guidance.
- **Strong Motivations:** Motivations included reducing waste producing homemade manure and inspiring others in their communities.
- **Appreciation of ITC WOW:** Participants valued ITC WOW’s ongoing support, which was key to their composting success.
- **Suggestions for Improvement:** Address odor concerns, offer incentives for composting, increase community outreach and explore urban-friendly composting solutions.

Segregation of Waste at Source: AI for Waste Management

Case Study: Young action takers for waste management promotion

Under the leadership of Mrs. Usha Gupta, Principal, Nigam Pratibha Vidyalaya, became the first school in the Municipal Corporation of Delhi (MCD) to integrate Artificial Intelligence (AI) into waste segregation education through ITC WOW program.

The initiative launched on August 2, 2022 aimed to enhance students' understanding of waste management using advanced technology. Supported by a new lab equipped with 15 AI-enabled computers, the program was inaugurated by Mrs. Sujata Malik, Deputy Education Director and Mr. Naveen Agarwal, Deputy Commissioner, Keshav Puram Zone who also demonstrated waste segregation to encourage students.

Segregation of Waste at Source: AI for Waste Management

Case Study: Young action takers for waste management promotion

Practice

- Infrastructure Utilization: The introduction of the AI lab improved the use of existing infrastructure such as smart boards and created a more interactive and technologically advanced learning environment. It also empowered teachers to enhance their digital and AI teaching skills.
- High Awareness of Waste Types among Students: 89.3% of students demonstrated a solid understanding of waste categorization, including dry, wet and dangerous waste. 82.1% of students could correctly identify wet and dry waste, demonstrating the possession of practical knowledge due to the AI-supported lessons.
- Effective Use of AI in Education: The AI lab significantly enhanced learning, making waste segregation more tangible by allowing students to see AI systems classify waste in real-time which increased comprehension and enthusiasm.
- Increased Student Engagement: Teachers observed a notable rise in student participation and interest due to the interactive, technology-driven approach to waste segregation education.
- Positive Behavioral Changes: Students applied their waste management knowledge outside the classroom, influencing their families to adopt proper waste disposal and segregation practices reflecting a shift toward environmental responsibility.

Segregation of Waste at Source: Zero Waste Office

Mr.Kumar Abhishek, Deputy Commissioner, MCD West Zone initiated the "Zero Waste Office" in collaboration with ITC WOW. This initiative aimed to systematically manage waste generated within the offices to ensure that no waste ended up in the city's already-burdened landfills.
It involved the segregation, collection and proper disposal of both wet and dry waste, setting a new standard for waste management within 21 government offices. 17 of them were declared as zero waste offices diverting tonnes of dry waste from landfills.

Case Study: Waste Trading for Office Supplies

Mr. Harish, Chief Sanitation Officer at the DC Office, West Zone, led a comprehensive waste management initiative to address significant daily waste generated by a 500–700-person workforce. Key waste streams included paper, plastics, leftover food, and shredded records.
With support from ITC WOW, the initiative began with training sessions for all Heads of Departments, followed by floor-wise awareness campaigns conducted alongside the Internal Audit and Control team. Employees were provided separate bins for dry and wet waste. Dry waste (100–150 kg/day) was sent to ITC WOW's facility for processing, while wet waste (150–250 kg/month) was transported to a composting site in Ranveer Nagar.Sanitary inspectors were appointed on each floor to enforce segregation guidelines, report non-compliance, and ensure swift corrective action. The initiative ensured consistent and sustainable waste segregation practices across the office.

Key Findings

- Successful Waste Segregation: Daily segregation and collection of dry and wet waste were effectively implemented, ensuring proper disposal and management.
- Comprehensive Training: ITC WOW and the Internal Audit and Control team provided detailed training for employees fostering a strong understanding of waste segregation.
- Environmental and Behavioral Impact: The office's environmental footprint was significantly reduced and continuous monitoring instilled waste segregation as a habitual practice among employees.
- Incentivized Resource Exchange: Dry waste was exchanged for A4 sheets, encouraging proper segregation and reducing office stationery costs.
- Circular Economy Approach: The initiative promoted a circular economy by turning waste into useful resources such as paper supplies fostering sustainable practices within the office and leading to zero landfill waste.

Dry Waste Collection

Under the supervision of Mr. Sajal Chakraborty, the Central Hub in New Delhi has made significant strides in waste management, though it continues to face operational challenges. Manual segregation limits efficiency, highlighting the need for mechanization such as baling machines and more structured training programs. Additionally, limited worker benefits like the absence of housing allowances and pensions affect staff satisfaction and retention.

Key Findings

Operational Challenges:Manual segregation processes hinder overall efficiency and output. The lack of machinery and limited worker benefits, such as absence of housing or pensions, also impact worker satisfaction and retention.
Waste Collection and Processing:The hub segregates waste into categories like paper, plastic, cardboard, and metals. It collects around 2 tonnes of paper daily, sending larger volumes directly to recycling mills and aggregating smaller ones through distributors.
Support from ITC WOW:ITC WOW's awareness campaigns in nearby communities increased source-level segregation. This led to higher waste inflows to the hub and boosted income opportunities for waste collectors.
Livelihood and Employment Impact:The hub employs 10 waste sorting workers, primarily migrants from Bihar, who earn ₹500 daily plus performance-based incentives. As a result of increased operations, the number of waste collectors rose from 13 to 34.
Environmental Contribution:No dry waste from the hub is sent to landfills, ensuring maximum recycling. Non-recyclable materials are repurposed through energy recovery and road construction, reducing the zone's environmental footprint.

BANGALORE

Key Findings

1. Door-to-Door Awareness Campaign

- Reached 2,88,824 households across 25 wards in 5 zones and 13 divisions.
- 97.9% of respondents reported exposure to the campaign; 90.6% received educational materials.
- 96.8% had access to segregated collection services and currently practice source segregation. 52.5% credited their behaviour change to these services.
- 95.5% of respondents who segregate their waste have observed positive changes in cleanliness or waste management in their area since the campaign. This indicates that the campaign has likely had a beneficial impact on local waste management practices and overall cleanliness.

2. Dry Waste Collection Centres (DWCCs)

- 52 DWCCs processed 29,618 MT of dry waste, generating savings of ₹59.23 crores for BBMP.
- Engaged 628 waste workers; households contributed 82.9% of the total dry waste.
- PET bottles and LVP made up 24.4% of waste; 92% of PET was recycled, and 51% of LVP sent to cement kilns for co-processing.

3. Educational Institutions – SERP

- 194 institutions participated, contributing 326 MT of dry waste.
- Promoted hands-on learning and waste management awareness, with 33% of schools expanding program outreach to other institutions.

4. Corporate Engagement

- 63 corporate offices diverted 1,067 MT of dry waste from landfills.
- Businesses received waste audits and segregation training; 40% referred the program to peers.

5. Livelihood Impact

- Benefited 52 DWCC operators, 336 sorters, 120 helpers, and 120 drivers.
- Reported improved waste sorting efficiency and increased income, enabled by ITC WOW's capacity-building and infrastructure support.

Door-to-Door Awareness Campaign on Source Segregation

In the period of 2022-2023, ITC WOW conducted a door-to-door awareness campaign on source segregation across 5 zones, 13 divisions and 25 wards, reaching 288824 households.

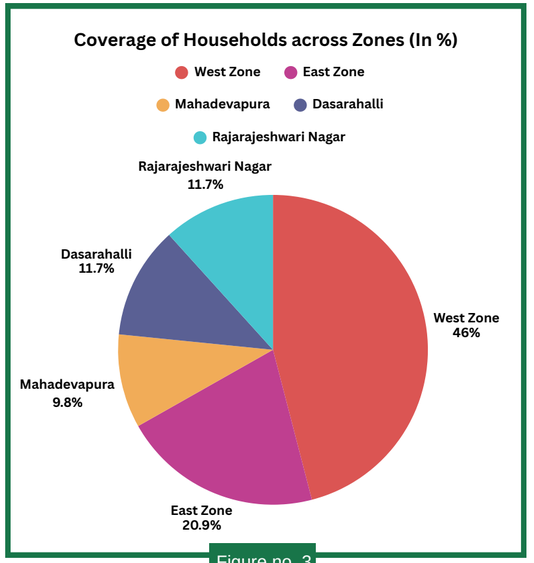
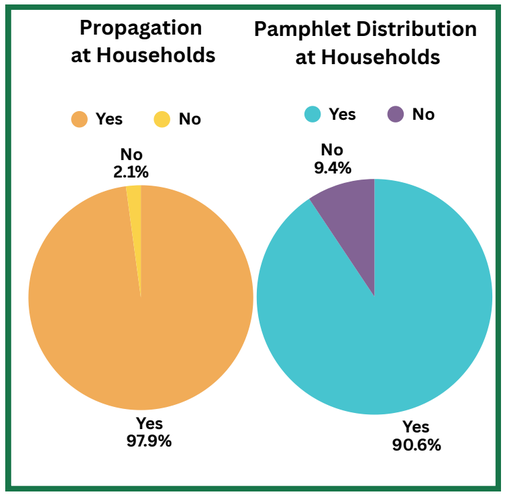


Figure no. 3

The household survey was conducted at 470 households across the 5 zones of West Zone, East Zone, Mahadevapura, Dasarahalli and Rajarajeshwari Nagar covering 13 divisions and 20 wards.
The survey demographic consists of 277 (58.9%) female respondents and 193 (41.1%) male respondents.
The sample size breakup is representative of the propagation figures.

The West Zone represents nearly half with 46% of the total surveyed respondents followed by the East with 20.9%, Dasarahalli with 11.7%, Rajarajeshwari Nagar with 11.7% and Mahadevapura with 9.8% .



From the survey of 470 respondents 97.9% were part of the awareness campaign on source segregation and 90.6% have received the pamphlets.
During the propagation efforts, 3 categories of waste and the importance of source segregation at source was explained to the households. Following that, a pamphlet containing information on the same was provided to the households.
The impact of the door-to-door awareness campaign on source segregation is assessed from the household on the basis of knowledge gained, attitudes related to waste management and current prevalent practices observed in the ecosystem.

Knowledge

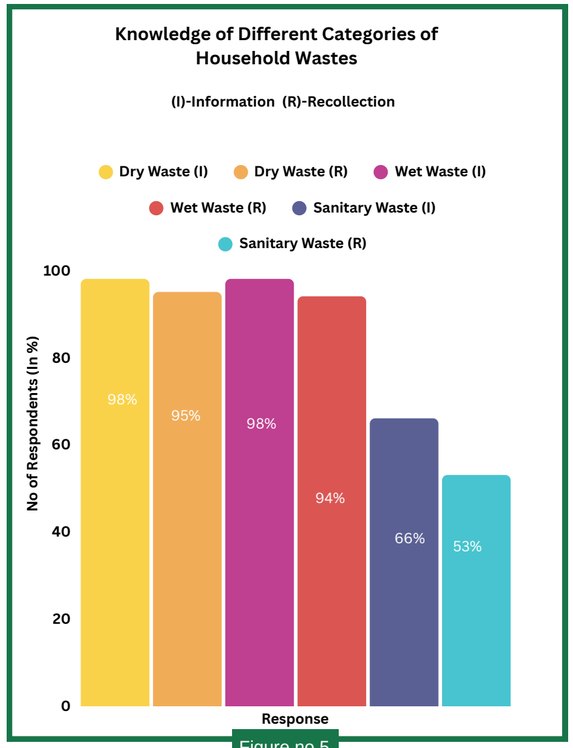


Figure no.5

From a survey of 470 households, 97.7% of respondents reported receiving clear explanations on the use of different types of bins for various waste categories, enabling better household-level segregation. Only 2.3% could not recall this information, suggesting the knowledge transfer was highly effective.

Notably, 66% of respondents accurately remembered all three types of bins and their associated waste types, while 31.7% recalled two. This high recall rate is especially commendable given that sanitary waste is not collected by local bodies, indicating strong engagement and retention of the training provided.

It is important to acknowledge that all the respondents were made aware of the source segregation to be done in at least 2 bins.

The knowledge of the benefits of segregation of household waste and the utility value of different categories of waste promotes a shift in the attitude towards segregation and their role in the larger waste management system.

The benefits of segregating every category of waste were informed to the respondents during the propagation. 93.1% respondents were able to recollect the benefits of segregating both dry and wet waste. 52.9% respondents were able to recollect the benefits of segregating all three wastes - dry, wet and sanitary.

The findings highlight that while many respondents recognize the importance of segregation, gaps remain in understanding proper bin usage, emphasizing the need for continued awareness efforts.

Attitude

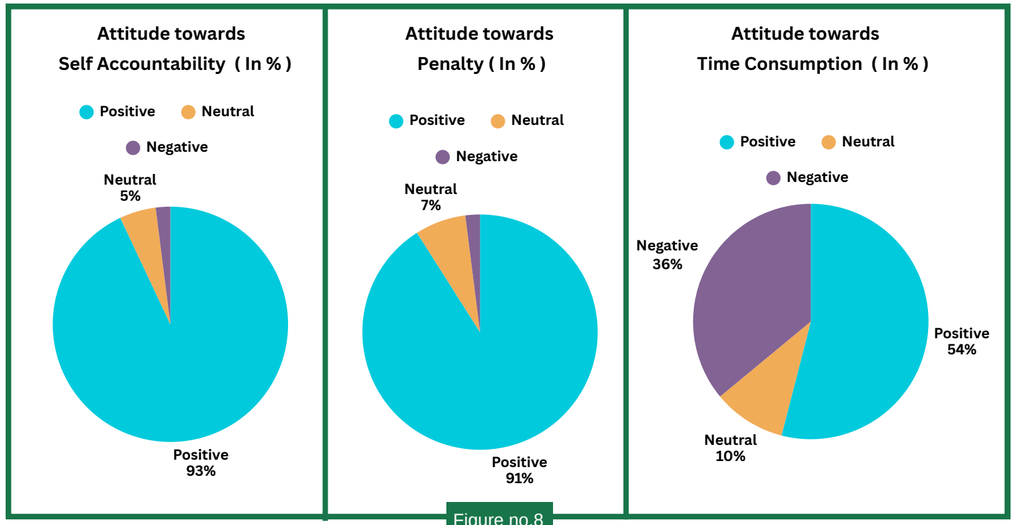
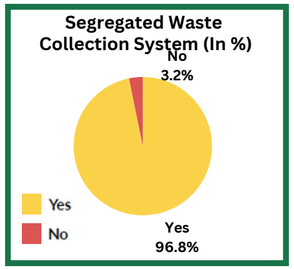


Figure no.8

The attitude towards self-accountability, penalty and time consumption forms the basis for their decision to adopt the practice of source segregation. The attitude towards self-accountability refers to the ownership of the civic responsibility to segregate rather than relying on waste collectors to do it for them. The attitude towards penalty refers to the respondents' support in establishing a penalty system for non-compliant citizens. The attitude towards time consumption refers to respondents' perception that the segregation of waste is a time-consuming process.

93% of respondents have a positive attitude regarding self-accountability and 91% of respondents for the imposition of penalties for non-segregation. 36% respondents have a negative belief of segregation being a time-consuming household task.

Practice



Segregated Waste Collection is a key factor that results in the respondents to make the behavioral change of waste segregation at the household level. 96.8% respondents have access to a segregated waste collection system. This acts as a positive reinforcement mechanism for the respondents to adhere to the norm of segregating the waste.

All the respondents who reported having a segregated waste collection system are currently practicing source segregation at their household level.

Practice

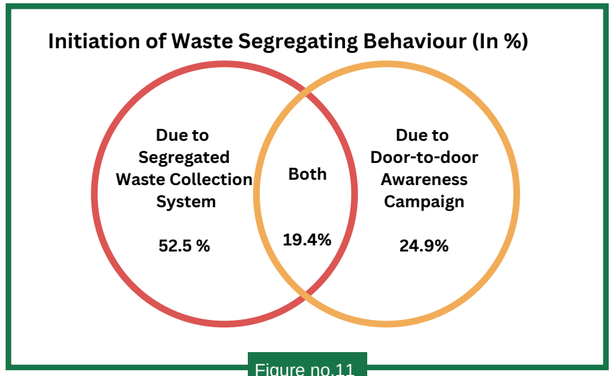


Figure no.11

In addition to proper knowledge and a positive attitude towards source segregation, a segregated waste collection system is the key to adopting it as a practice. Generally, the awareness campaigns are carried out after the segregated waste collection system is established.

The system along with the door-to-door awareness campaign is an effective source segregation promotion strategy.

96.8% have access to a segregated waste collection system and are currently practicing source segregation, initiated waste segregation behavior due to access to a segregated system or awareness campaign.

71.9% and 44.3% of the respondents have attributed their practice to the presence of a segregated waste collection system and the awareness campaign respectively. This shows that having a segregated waste collection system provides the much-needed push to adopt source segregation behavior complemented by door-to-door awareness campaign.

Other Findings

Positive Response: Feedback indicates a positive reception of the waste management system noting the efficiency of waste sorting efforts which have led to a visible improvement in cleanliness and reduced block spots.

Contribution of Waste Collectors: Numerous responses appreciated that the waste collectors provided follow-up and on-spot information to the residents on segregation. They found it to be effective as many residents needed constant reminders to practice source segregation.

Sense of Community Responsibility: Many respondents expressed a sense of duty in segregating household waste viewing it as an essential responsibility for environmental presevation. This shows a shared community value of personal accountability towards source segregation created by the awareness campaigns.

Student Exchange and Recycling Program

Within the Student Exchange and Recycling Program with Educational Institutions, ITC WOW conducts an awareness session on source segregation followed by a recycling activity. The recycling activity involves the students contributing dry waste and receiving fresh stationery items in exchange of an equivalent value.

ITC WOW collaborates with local recycling units for on-campus recycling activity with educational institutions to facilitate the waste collection process.

Between 2022-2023, it has worked with 194+ educational institutions of which 177 are schools and 17 are colleges. Through this, 326 MT of dry waste was collected. The following findings are based on the semi-structured interviews of 15 school representatives.

Instilling Environmental Responsibility

SERP encourages students to see waste as a valuable resource through hands-on involvement in segregation and collection. This fosters a strong sense of individual environmental responsibility and awareness.

Educational Value of the Program

The program nurtures eco-conscious habits early and enhances learning through practical, reward-based participation. It promotes better retention and critical thinking about waste and consumption.

Benefits to the School Administration

SERP aligns with schools' social responsibility goals and strengthens their public image as eco-friendly institutions. ITC WOW's support ensures smooth implementation with no financial burden on schools.

Suggestions

Expanding awareness sessions, evaluating student knowledge, and increasing inclusion of disadvantaged groups can deepen impact. Enhancing the reward system can further motivate and sustain student engagement.

SERP provided the students and school administrators with the opportunity to experience practical environmental education. They were appreciative of the value it brings to them and their students. However, there is also scope for improvement from the suggestions. Implementing them could further enhance the learning outcomes for the students.

Student Exchange and Recycling Program

Suggestions

Implementing assessments to measure students' knowledge of waste management would offer measurable outcomes and help schools evaluate the program's effectiveness. Increasing participation from minority and economically disadvantaged communities, especially through government schools, would promote greater inclusivity and equity. Additionally, upgrading the reward system with more diverse and age-appropriate eco-friendly items, and recognizing top-performing students with badges like "Top Recycler," would further motivate and engage participants.

Waste Management with Corporates

In this project with the Corporates, the ITC WOW offers waste audit followed by training the housekeeping staff and employees on source segregation. They also facilitate the corporates to the recycling units in the city that provide green certificates.
Between 2022-2023, it has worked with 63 corporates diverting 1067 MT of dry waste from the landfills. 11 new corporates have signed the MoUs. The following findings are based on the semi-structured interviews of 10 corporates.

Enhanced Waste Segregation
Most companies collaborating with ITC WOW now follow a structured system for segregating waste into wet and three dry waste streams—paper, plastic, and metal/recyclables. This systematic approach has improved overall waste handling efficiency at the source.
Improved Convenience in Disposal
The partnership helped corporates shift from disorganized to streamlined waste disposal systems. With ITC WOW facilitating logistics, companies can focus on their core operations without being burdened by waste management concerns.
Reliable and Consistent Waste Pickup
Regular and dependable waste pickup services provided by ITC WOW resolved storage and clutter issues, particularly for high-waste-generating companies. This ensured a cleaner, more efficient workplace environment.
Strong Promoter Attitude
Four out of ten participating companies referred the program to others, highlighting a high net promoter ratio. This demonstrates the perceived value and success of the program among corporate participants.

Environmental Impact Reduction
Through better segregation and disposal practices, the program has helped companies reduce their environmental footprint. It aligns well with broader sustainability and ESG goals by minimizing landfill contributions.
Challenges in Certification and Minimum Quantum
Some corporates face challenges with the minimum quantum requirement for waste pickups and the cumbersome process of obtaining green certificates. Certificates lack specific details like waste quantum and carbon offset, limiting their impact.
Suggestions for Improvement

- Annual Training Sessions: Introducing yearly staff training can boost awareness and engagement in responsible waste management.
- Expanded Services: Tailoring and diversifying services to meet the evolving needs of various sectors would increase program relevance and scalability.

With the corporates, the program improved waste segregation and disposal through audits, staff training, and regular waste pickup. The program can further enhance corporate sustainability by promoting waste reduction, circular economy principles, and employee-led green initiatives. Strengthening collaboration through workshops and green certifications will foster a culture of environmental responsibility within organizations.

Livelihood Impact

Between 2022-2023, ITC WOW contributed towards the incomes of 52 operators , 336+ sorters, 120 helpers and 120 drivers at 52 DWCCS. 2 new DWCCS have been allotted to ITC WOW for reactivating the operations in full swing in order to increase operational stability and profitability.

The program provided entrepreneurial support to 52 DWCC Operators, more than 628+ waste workers were able to access income opportunities.

Case Study: DWCC Operator

Palavinamma, aged around 55 years has been the DWCC operator at ward 166 for 8 years now. This center was assigned to ITC WOW in 2022. Prior to this, she had worked in the DWCC of ward 6 for 4 years. She earns an amount of ₹25000 and is able to save ₹10000-15000 every month.
She mentioned that she is able to run the operations much more smoothly with the support of the ITC WOW in terms of maintenance of records and identification of best recycling units for different categories of waste to maximize the profits for DWCC.

Environmental Impact

Collection of Dry Segregated Waste

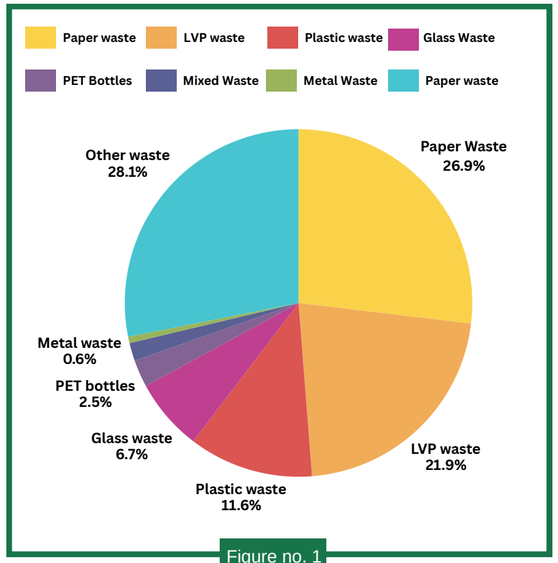


Figure no. 1

The pie chart depicts the quantum of waste received through all interventions undertaken by ITC WOW.

The collected waste is either sent directly to recycling units or to the DWCCs for further sorting of the waste.

The sorted waste is sent to various waste-specific recycling units or local recycling vendors. From April 2022 to March 2023, the total waste collected from DWCCs was 29618 MT.

As per the pie chart on the left, there are 3 significant categories of waste - Other Waste (28.1%) Paper (26.9%) , LVP (21.9%) and Plastic waste. Other waste consists of cloth waste, coconuts, thermocol and reject waste.

Sources of Dry Waste Collection

The dry waste is collected from four sources at the DWCCs. Households is one of the major sources that generates dry waste regularly. The largest portion around 82.9% of the waste is collected from households reflecting the effect of door-to-door propagation conducted in the wards through the years. Households are followed by local commercial units (12.4 %) , corporates (3.6 %) and educational institutions (1.1 %) . Commercial units include kirana shops, local traders and other small businesses.

Recycling Rate of PET bottles and Low-Value Plastics

PET bottles and Low-Value Plastics (LVP) together account for 24.4% of waste collection. LVP, due to its low recycling value and tendency to be littered is one of the most difficult category of waste to manage. ITC WOW collected 6478 MT of LVP dispatching 50.7% (3286 MT) to cement co-processing units for environmentally safer disposal. PET bottles are often littered or mixed with general waste. ITC WOW collected 749 MT of PET bottles and successfully sent 92.1% (690 MT) to recycling facilities promoting a more sustainable circular economy.

HYDERABAD

Key Findings

1. Environmental Impact

- Collected 4,577 MT of dry waste from households, institutions, and businesses.
- Achieved a 98% recycling rate for low-value plastics (LVP) by routing them to cement plants for co-processing.

2. Social Impact – Households

- Conducted 72,196 household propagations across 5 urban local bodies (Badangpet, Boduppal, Kompally, Meerpet, and Peerzadiguda).
- Residents showed a basic understanding of waste segregation and expressed positive attitudes, though many found the process time-consuming.
- Only Boduppal continued household-level segregation due to the ongoing availability of separate collection services.

3. Social Impact – Educational Institutions

- Reached 188+ schools, collecting over 301 MT of dry waste with active participation from 34,000+ students.
- The initiative was seen as a valuable addition to academic programs, with students and schools embracing recycling and community participation.

4. Solid Waste Management Ecosystem

- Trained 83 community resource persons across five urban local bodies to lead door-to-door awareness campaigns, building capacity at the grassroots level.

Dry Waste Collection

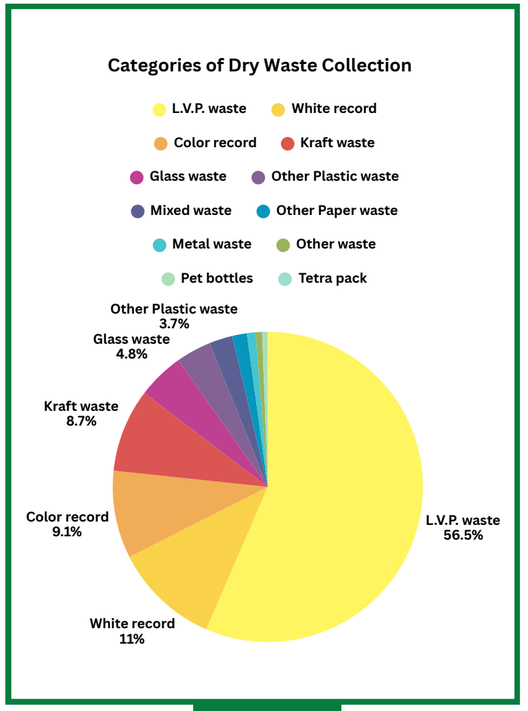


Figure no 1

ITC WOW established the DRCCs of Boduppal and Peerzadiguda. These centers collect dry waste from the urban local bodies and further sort it category-wise.

The sorted waste is sent to various waste-specific recycling units.

From April 2022 to March 2023, the total waste collected is 4577 MT as shown in pie chart in category wise.

As per the pie chart on the left, a large portion of the waste is Low-Value Plastic (LVP) which is 57% followed by Paper Waste (Color record, White record, Kraft, Tetra pack, Old news papers/ Old magazines/ Old books/ Paper cups/ Others) with 30%.

The remaining 13% constituted Glass waste, Metal waste, Hard plastic, Pet bottles, mixed waste and other waste.

Sources of Dry Waste Collection

The recorded data has source accounting for 4577 MT. The largest portion around 56% (2554 MT) of the waste is collected from commercial shops.

These units include kirana shops, local traders and other small businesses. They mostly dispose kraft waste at the DRCCs. The households contribute around 18% (839 MT) which is a result of enabling citizens to adopt source segregation.

Recycling Rate of Low-Value Plastic

Low-Value Plastics (LVP) is one of the toughest categories of waste to be collected as it is usually thrown all over and has very low recycling value. The DRCCs managed to collect 2587 MT of it, and dispatched 2554 MT (98.7%) to the cement co-processing units for recycling.

Community Resource Persons Training

From April 2022 to March 2023, 83 have been trained by ITC WOW to enable them to conduct door-to-door awareness campaigns on source segregation among households in their respective urban local bodies.
A survey with 14 Resource Persons (Badangpet-1, Boduppal-4, Kompally-3, Meerpet-5, Peerzadiguda-1) was conducted to assess their learnings from the training and to gauge residents' responses in the adoption of source segregating behavior.

Learnings from the Training

The community resource persons found the capacity building on waste management and on-field demonstration useful.

Knowledge of household waste management: Community resource persons received training on key household waste management topics, including need for source segregation, composting, recycling, and documentation.

Field Demonstration: Practical, live demonstrations during the initial door-to-door awareness campaigns enhanced their understanding of effective propagation techniques.

Challenges during the awareness campaign

The community resource persons have received a demand for bins which challenged them in convincing the households to adopt source segregation of household waste. Households requested bins, especially in areas where municipal provisions were lacking, hindering the adoption of source segregation of household waste.

Suggestions

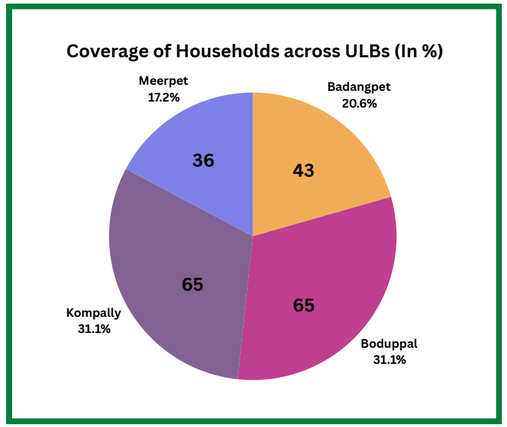
All the community resource persons shared the need for separate and regular waste collection. In addition, they shared that frequent awareness campaigns, availability of bins and imposition-enforcement of penalties have great potential in ensuring the adoption source segregating behavior among the households.

The training effectively transferred knowledge on waste management, but systemic challenges like service pick-up inconsistencies significantly impacted the success of awareness campaigns and household participation.

Door-to-Door Awareness Campaign on Source Segregation

Households Demographic Profile

The door-to-door awareness campaign on source segregation was conducted by ITC WOW and community resource persons from the urban local bodies.



Across 2022-2023, the total no of propagations done at households was 72,196. The urban local bodies covered were Badangpet, Boduppal, Kompally, Meerpet and Peerzadiguda.

The analysis in this section is based on the sample survey conducted with 209 households in the areas of Badangpet, Boduppal, Kompally, and Meerpet.

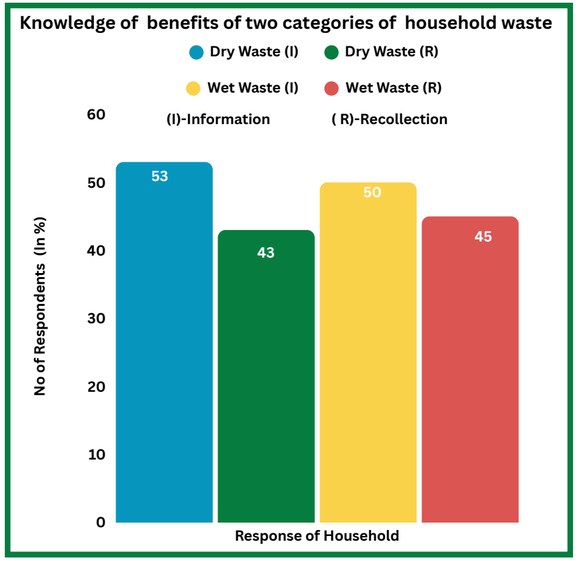
The sample demography is 77.5% female and 22.5% male. The sample size breakup across ULBs is shown in the pie chart.

Knowledge

The survey with 209 residents assessed the whether the participants were provided with information regarding segregation and their ability to recollect what they learnt.

53% respondents received information about the benefit of segregating dry waste and 43% respondents were able to recollect its benefit.

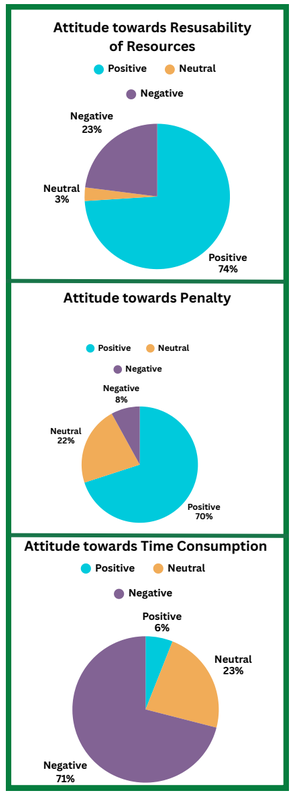
Similarly, 50% respondents received information about the benefit of segregating wet waste and 45% respondents were able to recollect its benefit. 40% respondents were able to recollect the benefits of both the dry and wet waste.



Attitude

The survey assesses the attitude among the households towards waste management by understanding their opinions towards the reason for segregation, reusability, penalty, and time consumption in the segregation of waste etc.

Among the 209 surveyed, 80.4% respondents have at least one reason for acknowledging the need for source segregation. This depicts a positive attitude and personal connection with the segregation of household waste. Half of them cited environment or health as one of the reasons.Other reasons cited were active functioning of a segregated waste collection system, personal satisfaction and fear of penalty.



The attitude towards the reusability of resources refers to residents' view of the utility of segregated waste. A positive view of reusability encourages people to see waste as a resource rather than just garbage.This attitude can further motivate the residents to adopt the practice of household waste segregation.

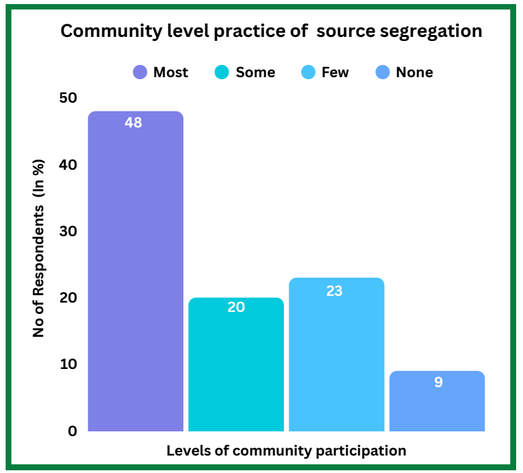
The attitude towards penalty refers to the residents' support in establishing a penalty system for non-segregating citizens. Support for penalties indicates a willingness to enforce accountability and drive compliance. It also indicates that people believe that fines can create a deterrent effect, encouraging households to practice segregation consistently. This can establish segregation as a community norm rather than an optional practice.

The attitude towards time consumption refers to the perception of residents holding the view that the segregation of waste is a time-consuming process. If people perceive waste segregation as time-consuming, with such inconvenience they are less likely to adopt the habit consistently or initiate the adoption.

33.5% respondents have a positive attitude regarding the reusability of resources and the imposition of penalties for non-segregation. 71% respondents have a negative belief of segregation being a time-consuming household task.

Practice

The survey assesses household segregation practices at a community level across different municipalities and how the existence of a separate waste collection system influences the sustainability of the segregating behavior among the households.



90.4% of 209 respondents have a segregated waste collection system in place - around 45% respondents reported that the waste segregation is done mostly by the waste collectors rather than the residents regularly. Few residents of Boduppal, Kompally, and Meerpet reported that waste collectors do not segregate.

Many respondents of Badangpet and Boduppal opined that most of the residents practice source segregation whereas in Kompally and Meerpet some respondents opined the same.

Except for Badangpet, all other municipalities had segregated waste collection systems during the propagation period. Currently, the segregated waste collection system exists only in Boduppal and Peerzadiguda and in other areas, the segregated waste collection system is discontinued.

Respondents of all the urban local bodies reported having noticed cleaner surroundings after the propagation period.

Awareness and Recycling Championship

ITC WOW conducted the Awareness and Recycling Championship competitions in around 180 schools and collected more than 300 MT of dry waste from around 34,000 students.

A total of 75 students participated in the survey. Even though students of other classes also participated in the championship, students from 7th to 10th standards were selected for the survey as they could respond well to the survey.

Objective of the Recycling Championship

The recall of the announcement reflects the effective communication for objective alignment building between the implementation agency and beneficiaries.

44% respondents recalled that waste would be rewarded with stationery. 40% recalled the importance of recycling and 27% recalled the importance of saving trees and environment which were explained by ITC WOW.

Types of Waste Collected

The students were asked to bring in dry waste for recycling with the emphasis on paper waste that they commonly generated at home. All of the students collected paper waste and additionally 36% of students collected plastic waste. Of the paper waste, most of them collected their old notebooks and old textbooks followed by newspapers and cardboard.

Indirect Participation

77.3% respondents involved 262 people in their waste collection process. By involving the social groups, the sources for dry waste collection and thereby the quantum of waste collected has a multiplier effect. This extends the participation from school to community.
67% involved their family followed by 47% siblings, 39% neighbours, and 27% friends in the recycling initiative.

Concern for Environment

Many students participated in the recycling activity because of their interest in taking positive action towards environmental protection. For 69.3% respondents, it stemmed from concern for the environment followed by 36% respondents from the opportunity to Recycle, 22.6% respondents from competitive spirit and 20% respondents from Parents/Teachers.

Case Study: WOW Program at TS Model School-Moinabad

TS Model School was one among the leading Government Schools and contributed 1600 kgs recyclables. More than 250 students from 6th to 12th standards actively participated in the program.

Integration of Environmental Awareness into Education:

The Principal highlighted the importance of incorporating programs to create environmental awareness into formal education.

The Principal appreciated ITC for conducting WOW program as it has created environmental awareness among the students. It has had a profound impact on students.

The program aligns with the school's mission to educate the students to protect the environment. The principal emphasized that recycling, in particular, is a concept that cannot be fully grasped through textbooks alone; it requires practical involvement, which the WOW program effectively provides.

Inclusivity and Equal Opportunities:

The program has also had a notable impact on inclusivity within the school. According to Principal Vishnupriya, the WOW program offers equal opportunities for all students, including those who may be slower learners. By engaging in hands-on recycling activities, these students can participate meaningfully in school initiatives, boosting their confidence and contributing to the overall school environment.

School Winner by Community Engagement

Sara Abhinay, a 9th grader, collected 46 kg in FY 2022-23 showcasing his commitment towards recycling and environmental responsibility. Motivated by the belief that waste should be recycled rather than discarded, his efforts extended beyond personal action, as he successfully engaged his community, involving 6 neighbors and 25 households to collect a substantial amount of waste in just six hours.
This community-driven approach highlights the program's ability to foster collective environmental action and emphasizes that waste management is a shared responsibility, positively impacting both individuals and the community.

Conclusion

The ITC WOW program has made commendable strides in transforming the Solid Waste Management (SWM) ecosystems across Delhi, Hyderabad, and Bangalore by promoting a circular economy, community participation, and systemic reform. Across all three cities, WOW has effectively driven awareness on source segregation, facilitated large-scale waste collection and recycling, and supported livelihoods of waste workers and ecosystem enablers. Its efforts have resulted in cleaner neighborhoods, improved recycling rates, and enhanced engagement from educational institutions, RWAs, corporates, and municipal bodies.

The program's success is largely attributed to its collaboration with local municipal corporations, leveraging ITC's credibility and long-standing relationships to enable efficient and scalable public engagement. It also introduced innovative practices such as Zero Waste Offices, AI-based waste management solutions, and school-level recycling championships that furthered behavior change and resource recovery.

While the outcomes reflect significant progress toward sustainable SWM, there is scope for strengthening Monitoring & Evaluation (M&E) frameworks, capacity building of implementing partners, and deeper advocacy with city-specific stakeholders such as BBMP in Bangalore. Establishing outcome-driven program design, participatory planning processes, and feedback-informed implementation will enhance long-term impact and replicability.

In essence, ITC WOW's integrated efforts across these diverse urban landscapes demonstrate a robust commitment to environmental stewardship, livelihood enhancement, and community-led waste solutions—setting a replicable model for cities across India.