

An initiative by Saahas >>>

Starting with 4 Gram Panchayats (GPs) in May 2023, the project has since **expanded to all the 14 GPs in Siddipet Rural Mandal**, thus sowing a seed for establishing sustainable solid waste management (SWM) practices in the region.

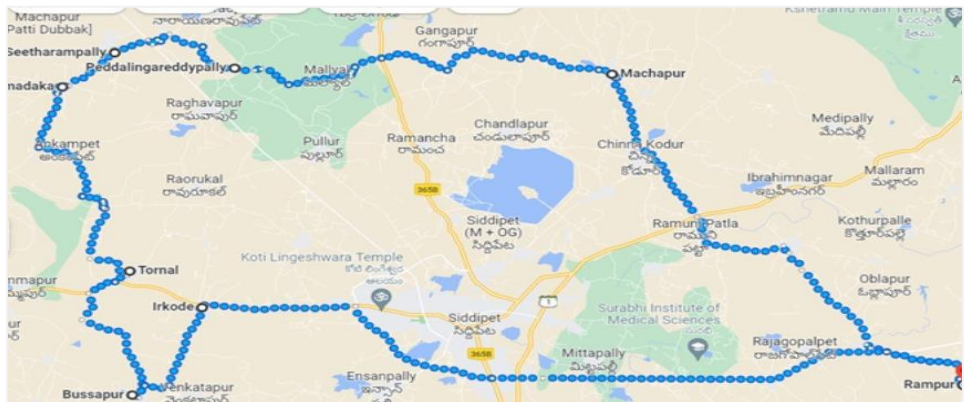


Figure 1: Google map of Gram Panchayats of Siddipet Rural Mandal.

This project has been supported by CGI, under its CSR initiative

Solid Waste Management at Siddipet Rural Mandal

About the project >>>

As 1.5 tons of solid waste is being dumped daily at the dumpsite located on the outskirts of the villages causing various health and environmental challenges, there is a dire need to establish a sustainable SWM system.

The project SWM Siddipet is a 3-year initiative that aims to sustainably collect and process the solid waste generated in the 3 mandals (Siddipet Rural Mandal, Siddipet Urban Mandal, Chinnakodur Mandal). This is to be done by:

- Implementing source segregation
- Disciplined waste collection
- Processing the collected waste
- Building the capacity of the administration and the community to own and operate the system

The first year is focused on developing Siddipet rural mandal consisting of 14 GPs.

Baseline survey and key challenges in the Mandal

Even though the villages had waste management units where wet waste could be composted and dry waste was to be further sorted however very little waste was being processed as waste was not being source segregated. Most residents were giving mixed waste due to lack of awareness on why and how to source segregate. All the mixed waste was being sent to the dump site.

Lack of awareness on source segregation: Why and How

Narsamma from Raghavapur village:

“In our house, we put all the waste in one dabba. Every morning I either give it to the waste collection vehicle or if they don’t come, I throw it in the street, where there was always a pile of garbage.”

Challenges faced by the gram panchayats in solid waste management

Empowering and monitoring the waste management staff

The waste collection staff were aware of different types of waste categories but were not enforcing source segregation, they did not feel empowered to demand that and no one was questioning the staff for collecting mixed waste.

Irkode	Bandache-rlapally	Raorukala	Machapur
Raghavapur	14 Gram Panchayats of Siddipet Rural Mandal		Tornal
Pullur	Rampur	Chintama-daka	Peddalinga-redyypalle
Chinnagundavelly	Bussapur	Seetarampally	Venkatapur

Residents were by and large oblivious to the concept of different categories of waste; health and environmental impact of waste dumping and burning. Although waste was becoming a key challenge, the administration and the panchayat were at a loss on how to bring about this big change in the residents.

Daily monitoring of collection and processing was not happening. Collection was not regular which led to multiple blackspots on the streets. The processing units lacked proper infrastructure and safety equipment and no records were maintained for waste processing, and no one was questioned for most of the waste being dumped.

Project objectives >>>

Stakeholder identification

The first step is identifying the relevant stakeholders for solid waste management in the villages. The identified stakeholders are the residents, the panchayat raj waste management staff, and the panchayat raj officials.

Training and Capacity-building

Spreading awareness, training the sanitation staff regarding health and hygiene, collection, and monitoring mechanism, and sensitizing the citizens on the impact of waste mismanagement in the villages is extremely important.

Infrastructure & Material support

The resource recovery centres (RRCs) which consist of both composting unit and dry waste collection centre lack some key equipment. Overall, the system needs support with some critical consumables and materials which will be provided under this initiative.

Disciplined waste collection

Source segregation will be effective only if all the houses are covered by the waste collection staff daily which would prevent dumping of waste and would help address the existing blackspots. The amount of waste diverted from dumpsites would also be assessed based on the percentage of households giving waste.

Monitoring and Evaluation

Source segregation, collection, and processing of solid waste should be regularly monitored to ensure efficient operations. Weighing and recording waste collected, and sorted, waste sent to different destinations, and compost produced is very important. Attendance of the staff, collection, and processing must also be maintained.



Figure 2: Gram panchayat's specific material requirements provided by Saahas.



Figure 3: Rangoli event in SWM awareness session.

Waste dumping to Waste processing

Biodegradable waste rotting in the dumpsites is a major source of methane gas, a strong greenhouse gas, contributing significantly to global warming. Wet or biodegradable waste is converted into compost which can be used by the village farmers. Processing of dry or non-biodegradable involves sorting it into different categories, paper, plastic metal etc. which are then sent for recycling. Some waste is also sent to the Dry Waste Collection Centre of Siddipet where further sorting takes place.

IEC (information, education & communication) activities

All age groups, different socio-economic groups, waste management staff, SHGs, ASHA workers, Anganwadis, schools and panchayat officials were sensitized and trained on SWM.

- Display boards & wall paintings
- Training and SWM-based capacity-building sessions
- Door-to-door awareness using flipcharts,
- Art and rangoli competitions
- Street plays performed by active citizens
- Videos shared on WhatsApp
- Posters in the waste unit on segregation and worker safety



Figure 4: Resource recovery centre at Pullur.

Infrastructure & Material support



Figure 5: Vermicomposting pits in RRC.

At Household level: Each house was given a dry waste bag for storing the dry waste. To establish a better way for tracking the number of households segregating waste, each house was numbered along with a sticker containing the number and information on 3-way source segregation. The sticker was put on every house.

At village level:

IEC awareness boards containing information on different categories of waste, health, and environmental impacts were displayed in areas where there is high public floating such as dairy farms, panchayat offices, and schools.

At the Resource Recovery Centre

A weighing scale was provided through the project to weigh the amount of dry waste collected. First aid kits and fire extinguishers were provided at the resource recovery centres of each of the 14 GPs. Furthermore, certain repair works for the RRC in Tornal GP were carried out such as the replacement of doors, roof sheets, etc. Also, the waste management staff were provided with hand gloves.

Waste collection vehicles: Loudspeakers were given to all the GP collection vehicles (tractors). A battery for the daily waste collection tractor was also provided to Seetharampally GP as per requirement. The waste collection vehicle was also provided with a dry waste bag to prevent the mixing of waste.

At compost units: Shredders were provided for shredding the dry leaves collected in the village. The existing shredder in Pullur was repaired and one shredder each was given to Raghavpur and Irkode gram panchayat respectively.

Bins for events: During public events or private functions a large amount of wet and dry waste gets generated. Therefore, 2 bins – one for dry and one for wet each with a capacity of 200 liters were provided to all the GPs to be utilized during large social gatherings.



Figure 6: GP staff weighing dry waste at the Resource recovery centre.

Key Statistics as of Feb 2024:

- Percent of segregated waste: 62.46%
- Percent of segregated waste converted to compost: 50%
- Percent of dry waste sent to RRC: 80%

Best practices:

- Source segregation by the residents at the household level.
- Refusing collection of mixed waste from the residents by the daily waste collection staff.
- Daily monitoring of the segregation, collection and processing by the Saahas field team and the Panchayat.
- Active participation by the citizens.

Challenges:

Tackling domestic hazardous waste is a key challenge as there is no proper end destination to process the waste. Current practices involve burying domestic hazardous waste such as sanitary pads etc beside the area of compost units. However, research will be conducted, to arrive at an alternate means of disposal that is safe and hygienic both for nature and humans.

Collective Effort >>>

Due to the collective effort of the gram panchayat, residents, and the waste collection staff, littering has reduced, more waste is getting processed, and villages are visually cleaner.

- Students from schools show active participation in any activity related to SWM.
- The residents show enthusiasm during awareness sessions, street plays, and other activities.
- Panchayat staff maintains a logbook provided by Saahas and records information on the amount of waste collected, amount of diesel consumed, attendance of waste collection staff, etc.
- The collection staff ensures residents give segregated waste, they guide them on how to segregate and report back to the Saahas team of any regular defaulters.

Monitoring>>>

- Daily monitoring of source segregation by the sanitation staff and the project field team ensures that every house is handing over wet, dry, and domestic hazardous waste on the allocated days of the week.
- The waste collection staff refuses to collect mixed waste and requests the residents to segregate it before handing over the waste to them.
- The amount of compost produced, and the amount of dry waste collected is weighed regularly.
- All the necessary information on collection and monitoring is entered in the logbook that is maintained by the gram panchayat staff.

Way forward >>>

- The project will be extended in the remaining 2 mandals.
- In Siddipet the team will continue monitoring to ensure the sustenance of the intervention and continue to strengthen the system by:
 - Activating the Village Water Sanitation Committee (VWSC) in every GP to monitor and supervise solid waste management in the panchayat practices.
 - The Mandal level officials can be involved in supporting VWSC.



Figure 7: Daily monitoring of source segregation by the project field team.



Acknowledgment >>>

We would like to express our gratitude towards our funding partner CGI for their enthusiastic support all through the project, from conceptualisation to execution. We would also like to acknowledge the efforts and active involvement of the panchayat members and other officials, specially all the residents without whose participation and ownership this project wouldn't have achieved these important milestones.

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Figure 8: Waste collection staff accepting only segregated waste.

The project SWM Siddipet is funded by:

