

AJMER SOLID WASTE MANAGEMENT



PROMotion of Inclusive, Sustainable growth and diversity to strengthen Local Governments

Project PROMISE





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Message

Greetings!

Urban areas in India are growing at very fast pace majorly due to shift from rural areas and expanding infrastructural needs of the existing population of the city. The city governments play a significant role in addressing the above needs but at the same time it becomes difficult for the city governments to tackle the problems holistically due to their minimal capacities, and limited budgets. In order to assist the cities, the project team through this exercise has developed a holistic approach for the city governments to prioritize their projects/ initiatives within available resources based upon citizen feedback.

We are glad to provide our support in association with Administrative Staff College of India (ASCI) in the solid waste management sector in Ajmer which is also being developed as Smart Cities. Ajmer is known for its rich history and tourism catering to domestic and international tourists. This has been a unique initiative by engaging with the project city, its stakeholders including the technical staff, political representatives, end users- comprising of women, youth population, and people with special needs irrespective of age, gender and caste.

I would like to express our gratitude to European Union for providing us an opportunity to assist the city governments with regard to different sectors in each project city. I would also wish to thank the members of city core group committee and national advisory committee for their continuous support provided towards completion of this report.

Warm Regards,
Mr. Emani Kumar
Deputy Secretary General, ICLEI – Local Governments for Sustainability &
Executive Director, ICLEI South Asia

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Administrative Staff College of India (ASCI) was established in 1956 and is now a premiere Institute for research, training, capacity building and information, dissemination in Urban development and management.

Ajmer Municipal Corporation Ajmer, Rajasthan

Jabalpur Municipal Corporation Jabalpur, Madhya Pradesh

Greater Warangal Municipal Corporation Warangal, Telangana

Karnal Municipal Corporation Karnal, Haryana

ICLEI - Local Government for Sustainability is the leading global network of more than 1,750 cities, towns and regions committed to building a sustainable future.

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PROMotion of Inclusive, Sustainable growth and

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1 Introduction

"Promotion of Inclusive, Sustainable growth and diversity to strengthen Local governments" (PROMISE) is being implemented by ICLEI- Local Governments for Sustainability, South Asia in association with Administrative Staff College of India (ASCI), with support from European Union. The project is being carried out in four Indian cities, representing different geographical locations- Ajmer in Rajasthan, Karnal in Haryana, Jabalpur in Madhya Pradesh and Warangal in Telangana. The project was initiated in the selected cities in early 2016 and will continue to run till mid of 2019 with an objective to strengthen the local governments in carrying out the service level improvements. The project has been designed with an aim to help the selected cities to develop their capacity to plan, conduct, manage and evaluate their projects in an inclusive manner with a focus on all communities, vulnerable groups irrespective of their gender or religion.

The overall objective of this project is to improve Local Authority's capacity to improve quality of life in an inclusive manner. The project aims to support the local authorities to create, enable and institutionalize equitable and inclusive governance mechanisms, and facilitate the development of smart and sustainable growth in cities. The proposed project shall strengthen capacities of local authorities for integrated, participatory, inclusive and sustainable development and efficient resources mobilisation and utilization to enhance service delivery, increase community participation and promote diversity in the urban system. The specific objective of the project is to develop a PROMISE tool for outcome based planning and evaluation of the development actions of local authorities. The PROMISE tool intends to help the cities in the following methods:

- Build managerial and technical capacity of local governments to develop projects jointly by engaging with and involving city staff, community, private sector, project team experts, local stakeholders and jointly implement projects in the city.
- Mobilize available opportunities and utilize resources in a diverse and strategic manner and help local governments to better leverage the opportunities available under national programs such as Swachh Bharat Mission, HRIDAY, Smart Cities and AMRUT, through well-defined criterion for project evaluation and implementation based on outcomes.

- Enable local governments to adopt participatory planning in project prioritization and execution.
- Ensure equitable and inclusive service delivery mechanisms through participatory governance that reach all sections of society, including the most vulnerable.
- Improve accountability of local authorities to diverse stakeholders and local communities.
- Acknowledge and promote diversity in local working environment of cities by encouraging citizen engagement in developmental project planning and execution.

Besides the PROMISE tool, various other activities are being undertaken in each project city. This report addresses the details of the activities undertaken in Ajmer, pertaining to solid waste management sector under the on-going project. As per the scope of the project, a pilot area has been selected in Ajmer in consultation with the Municipal Corporation with an aim to carry out a detailed study and interventions at a small scale and if found appropriate, the same may be replicated by the Municipal Corporation in other parts of the city. Ward Number 60 has been selected as a pilot area in Ajmer. This area comprises of institutional spaces, commercial area, residential area inhabited by people from various communities with different income levels and institutional spaces.

As mentioned above, the on-going project also aims to promote engagement with the city. In this regard, a core group committee (core group) at city level has been formed in each project city in order to interact and have views from various experts. The core group of Ajmer include the following:

- Hon'ble Mayor, Ajmer Municipal Corporation
- · Commissioner, Ajmer Municipal Corporation
- · Deputy Commissioner, Aimer Municipal Corporation
- Additional Chief Engineer, Aimer Municipal Corporation
- Superintending Engineer, Ajmer Municipal Corporation
- Executive Engineer, Ajmer Municipal Corporation
- Assistant Engineer, Aimer Municipal Corporation
- Ward Councillor, ward no 60, Ajmer Municipal Corporation

For developing a wider sense of the city and the Solid Waste Management Sector, the report also touches upon the following topics.

· Introduction to the project

This section provides the background of the study and outlines the study objectives, tasks and approach and methodology followed to complete the project.

City profile

This section assesses the demographic profile of the city along with its connectivity, land use profile, and growth directions of Ajmer Municipal Corporation (AMC)

. Rapid Assessment of the Solid Waste Management Sector

This section talks about the existing scenario of solid waste management sector in the city. This section is highly dependent on the level and amount of information made available by the municipal authorities.

Outreach Initiatives

It discusses about the initiatives taken in the city under the PROMISE project to understand the priorities of the citizen's with regard to solid waste management and also to sensitize them about improving the plight of mobility sector in their city.

Recommendations

Based on the project findings, this section discusses the areas of interventions suggested to be undertaken in the study area.

2 City Profile

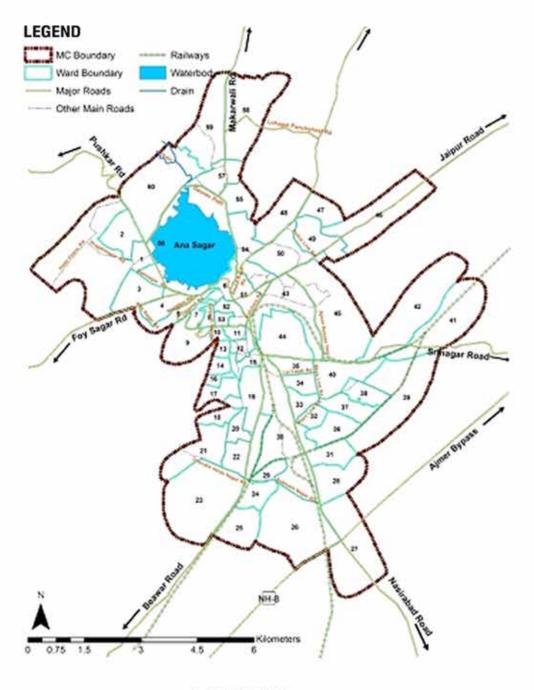


Figure 1: Location of Aimer

Ajmer is the 5th largest city in Rajasthan and is situated in the geographical centre of the state. It is the district headquarters of Ajmer district and also acts as the transit point between important tourist destinations like Jaipur-Jodhpur and Jaipur-Udaipur. The roads from these cities act as arteries connecting to Aimer. The world famous Dargah of Khwaja Mouinuddin Chisti is also situated here. Ajmer is situated in the Aravalli ranges, surrounded by Nag hills, Madar hills and Taragarh hills. The natural topography has resulted in the creation of number of water bodies, which form an integral part of the city. Anasagar Lake is a man-made lake which forms the focal point of the city and was created by building a dam across the Bandi River. It is also known as an educational hub of Rajasthan with the presence of prestigious institutes like Mayo College, Sophia School, and Government College among others. Aimer also houses railway workshop, which was earlier the major source of employment for the city.

Ajmer has a good connectivity with the surrounding settlements and major cities in India, through highways and rail linkages crossing the area. Ajmer is linked with other parts of the district and state as well by National Highway (NH)8, National Highway 79, National Highway 89 and other roads, connecting the city to other towns/cities like

Jaipur, Delhi, Chandigarh, Mumbai, Ahmadabad, Udaipur, Jodhpur and Jaisalmer. Owing to physical constraint, its development
has been in linear strip shape. Presently, the development of city
is taking place along the major roads viz. Pushkar Road, Pushkar
Bypass and towards Nasirabad-Bhilwara Bypass. The development
and growth of the city is very noticeable towards the North, due to
the increasing development in the form of new townships known as
Shushant City, RIICO Industrial Estate at Gagel and upcoming airport
of Aimer on the outskirts of Kishangarh town.

As per Census 2011, the total population of the city is 5,42,321 with 1,03,202 households (Source: Slum Free Action Plan of Ajmer City, 2013). The city has 60 wards, with a municipal area of 55.76 sq. km. The population of Ajmer was recorded as 1,96,633 in 1951 which rose to 5, 42,321 in 2011.

Like any other city in India, the governance and institutional structure of urban development in Ajmer is governed by implementation of the 74th Constitutional Amendment Act. It provides for mandatory elections at the level of local body and devolution of functions to local bodies with an aim to empower ULBs in terms of financial and administrative stability.

The institutional responsibility matrix pertaining to solid waste management (planning, construction, operation and maintenance of various infrastructure assets) is provided below.

Solid Waste Management Infrastructure	Planning and Design	Construction	Operation and Maintenance
Collection	Ajmer Municipal Corporation	Ajmer Municipal Corporation	Ajmer Municipal Corporation
Disposal	Ajmer Municipal Corporation	Ajmer Municipal Corporation	Ajmer Municipal Corporation
Treatment	No Treatment	-	-

Table 1: Institutional Responsibility Matrix

Rapid Assessment of Solid Waste Management Sector

Ajmer Municipal Corporation is involved in managing the solid waste generated in the city. This includes street sweeping, drain cleaning, door to door waste collection and waste transportation. Ajmer generates 240 MT of garbage @400 g per capita per day. Waste generated in the city is collected with the help of safai karamcharis in different wards. Though the collection of waste is carried out smoothly in most parts of the city, there is no treatment/ waste processing facility in the city. Since many years AMC, has been in

the process of inviting bidders by floating tenders for design, construction, operation and maintenance of scientific sanitary landfill site for Ajmer, as per the guidelines of Swachch Bharat Mission, Government of India, for implementation of Municipal Solid Waste (Management & Handling) Rules 2000. All attempts for these bids have been unsuccessful because of single participation or higher bid rates quoted by the bidders (Source: AMC).

For carrying out the smooth functioning and better handling of solid waste management in Ajmer, AMC has divided the city into three different zones which are further divided into seven circles as shown below.

Zone	Ward Number	Circle	Ward Number
1	1,2,3,46,47,48,49,50,51,54,55,56 57,58,59 and 60	1	1, 2, 3, 51, 54, 55, 56, 57, 58, 59 and 60
2	4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 24, 52 and 53	2	4, 5, 6, 7, 8, 9, 52 and 53
3	23, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45 and Taragarh	3	10, 11, 12, 13, 14, 15, 16 and 17
		4	18, 19, 20, 21, 22, 23, 24, 25, 26, 27 and Taragarh
		5	28, 29, 30, 31, 32, 33, 34, 35 and 36
		6	37, 38, 39, 40, 41, 42, 43, 44 and 45
		7	46, 47, 48, 49 and 50

Table 2: Solid Waste Management- Zones and Circles

Source: Ajmer Municipal Corporation

3.1 Waste Collection and Disposal

According to Ajmer Municipal Corporation the entire city area is covered by street sweeping and drain cleaning, and door to door waste collection and container lifting services. There are few areas in the city which lie in the core of the city or on the hills, having poor road infrastructure and hence are not being covered by door to door waste collection. Solid waste generated from such areas is collected with the help of labour deployed by Municipal Corporation through a contractor. The entire waste collected from the city is

lifted and transported to the trenching ground. Total waste collected from the city is estimated to be around 220 MT/day, which is approximately 92% of the waste generated. This waste is dumped at trenching ground, located outside the boundary of Municipal Corporation, at Makhupura. Trenching ground lies at a distance of 17-18 km from zone 1, 11-12 km from zone 2 and 3-6 km from zone 3.





Figure 2: Trenching Ground at Makhupura, Ajmer

3.2 Street sweeping and drain cleaning

The city is divided into about 2,000 beats for street sweeping. The beat length allotted to each sweeper varies from 300-700 meters, based upon the population density and road width of the area. The waste is gathered from the streets by sweepers with the help of handcarts and stored at waste collection depots/ enclosed waste collection dustbins and open spots. The waste is then collected by a tractor and transported to trenching ground. At few places tractors are used to transport the waste directly from households and drains, after collection to the trenching ground. Street sweeping work is mostly managed by female employees, while drain cleaning is coordinated by male employees.

Door to door collection of waste is handled by Ajmer Municipal Corporation, through tendering processing. Two vehicles (Tata Ace and Atul Shakti) have been allocated per ward to collect door to door waste. Presently, Tata Ace having a capacity of 700-1000 kg and Atul Shakti having a capacity of 500 kg are used for waste collection in the city. The waste collection process starts at 7:00 AM and continues till 12:00 noon. Each waste collection vehicle is accompanied by a driver and one labourer. Door to door waste collection teams also collect recyclable waste from the households, which was earlier collected and sold by the rag pickers. The collected recycled material includes thick and thin paper (mb), glass bottles, plastic bottles, shoe sole, plastic material etc. These materials are sold at different rates to the local vendors.

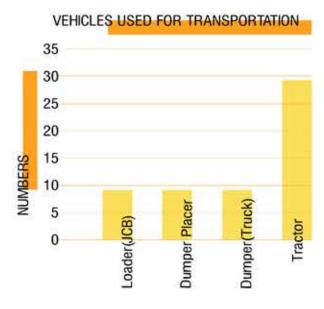






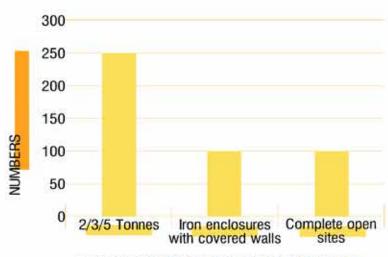




Figure 3: Types of vehicles used for transportation.

Containers for storing waste are provided in different wards and market areas by the Municipal Corporation which can store waste upto a capacity of 2, 3 to 5 tonnes respectively. In addition to these containers and open spots, the Municipal Corporation has introduced waste collection bins at various places in the city.

SECONDARY STORAGE FACILITIES



TYPES OF SECONDARY STORAGE FACILITIES



In order to manage solid waste in the city, Ajmer Municipal Corporation with support from District Administration and Jaagrati Foundation has installed five semi underground dustbins at various locations in the city. These locations include Khailand market, Agra gate, Sabzi Mandi, Anand Nagar and vicinity of JLN Hospital. These bins have plastic containers for storing waste and are emptied by the Municipal Corporation staff with the help of a JCB.



Figure 4: Link Road Ajmer before installation of semi-underground dustbin



Figure 5: Semi underground dustbin installed at Link Road Ajmer



Figure 6: Agra Gate, Sabii Mandi before installation of semi underground dustbin



Figure 7: Semi underground dustbin installed at Agra Gate, Sabji Mandi



Figure 8: Anand Nagar, Aymer before installation of semi-underground dustbin



Figure 9: Semi underground dustbins installed at Anand Nagar, Ajmer



Figure 10: Khailand Market, Ajmer before installation of semi underground dustbin



Figure 11: Semi underground dustbin installed at Khalland Market, Ajmer



Figure 12: Medical College, Ajmer before installation of semi underground dustbin



Figure 13; Semi underground dustbin installed at Medical College, Ajmer



Figure 14: Semi underground bin installed at various locations in Ajmer



Figure 15: Emptying of the semi underground bin

Online Grievance: Registration in Ajmer is done through three different platforms namely electronic helpline, Lok Sewa Adhiniyam Guarantee and Sampark portal. In addition to these, Ajmer Municipal Corporation also has mobile applications-Swachhata App and Smart City 311, which are used by the citizens to launch their complaints and check the status of the complaints. These applications are used by the citizens, councillors etc to launch a complaint, along with a photograph for problems related to civic amenities in the city.

3.3 Future plans of the city

The study of service level indicators for transport sector was conducted and it revealed that all the indicators fall in the low category when compared with the Service Level Benchmarks of Ministry of Urban Development and Housing Affairs. The indicators studied included the following:

Indicator	Sub-Indicator	
Household coverage	Household level coverage of waste collection	
Efficiency of waste collection	Geographical coverage of waste collection	
Segregation Extent of segregation of waste		
Waste Recovery Extent of municipal waste recovered		
Scientific disposal Extent of scientific disposal of municipal solid wa		
Cost Recovery	Extent of cost recovery for ULBs in SWM services	
Complaint Redressal Efficiency in redressal of customer complaints		
User charges Efficiency of collection of SWM charges		

After analysing the status of indicators, extensive discussions were carried out with the members of core group, to understand the indicator wise existing scenario, where the city perceives to see itself after next five years and where does the city and what all initiatives it plans to take up achieve its goals in next five years. The responses received from the committee members have been mapped to identify the following key parameters.

- · Priority sector for the city
- · Existing situation of the city with regard to the indicator
- . Where the city perceives to reach after 5 years with regard to the indicator
- · Initiatives the city has planned to achieve its goals



Existing Situation-2018

The intentions of the Municipal Authority are to cover the entire city area in Door to Door waste collection but due to geographical and other hindrances like limited space for the waste collection vehicle, hilly terrain etc. the coverage under Door to Door waste collection is limited.

By 2023

Maximum coverage through Door to Door waste collection and involvement of all stakeholders in the waste collection system.

Initiatives Planned

- · Awareness through IEC activities
- Inclusion of modern vehicles
- Waste compactors to increase the capacity of waste depot.



Existing Situation 2018

Though the collection of waste is done smoothly in most parts of the city, but due to geographical and other hindrances at some parts of the city the waste collection efficiency is below 100%.

By 2023

Improvement of the waste collection in the problematic areas through different means like handcarts and all.

Initiatives Planned

- Create awareness
- · Use of modern vehicles
- · Increasing the coverage through Door to Door waste collection.



Existing Situation 2018

The city has an effective online grevance system, telephonic system and app based management. The complaints are addressed within stipulated time period. The city also has mobile applications for sending complaints to the Municipal Corporation.

By 2023

Reduction of complaints and further improving the complaint redressal time.

Initiatives Planned

Reduction of complaints by improving the complaint redressal time.



Existing Situation 2018

There is no organised and scientifically planned segregation of MSW at household level or at community level. Sorting of waste is only done by the unorganised sector and hardly practised by the waste producers. Rag pickers delve into the collection of plastics, glass, paper and other recyclables from the community bins and the open dump sites and sell them to the scrap dealers in the city.

By 2023

To implement the waste segregation at source level.

Initiatives Planned

Promoting the segregation through the IEC activities, and pilot projects at ward level.







Existing Situation 2018

Most of the city waste is collected and disposed without segregation(mixed waste) in the open dumping ground.

By 2023

Scientific disposal of waste by waste by development of sanitary landfill site.

Initiatives Planned

Development of sanitary landfill site.

Existing Situation 2018

There is limited waste recovery and processing and the waste is dumped in the open sites without treatment.

By 2023

Development of recycling and waste processing facility.

Initiatives Planned

- · Collection of segregated source
- Material recovery facility
- · Development of processing facility

Existing Situation 2018

Since there is no waste recovery in the city, hence cost recovery is also negligible.

By 2023

Implementation of different categories of User Fee Charges on Door to Door waste collection and revenue from the sale of compost, RDF and recovered material for recycling.

Initiatives Planned

- Implementation of different categories of User Fee Charges on Door to Door waste collection
- Revenue from the sale of compost
- RDF and recovered material for recycling

4 Outreach Initiatives

Moving ahead with the project activities in the city, the project team, after making an overall assessment of solid waste management sector, narrowed down its scope of work to ward number 60- the study area selected for pilot interventions. The study area (ward 60) lies in the northern part of the city bounded by ward numbers 58, 59 in the north, ward number 56 in the south and ward numbers 1, 2 and 3 in the south west (Refer Figure 16).



Figure 16: On-going Scenario of solid waste management in the study area. Ward 60

Total population of ward number 60 is 9,714 i.e. 2% of the total population of Ajmer (Source: Ajmer Municipal Corporation). The ward comprises of 3,100 households. Total area of ward number 60 is 266.49 ha. The average population density of the wards is 36 persons/ha. A significant chunk of land in study area is under institutional area. Though there are very less number of commercial units in the ward, but the ward has government (3 in no) and private (6 in no) schools along with the residential area inhabited by residents belonging to various communities. The major areas of the ward include Ganpati Colony, Regional College Campus, Alaknanda Colony, Mitra Nagar, Nausar Area, Ratidang Area, Idgaah Area, Jambeshwar nagar, Amardeep Colony, Loonia Colony, RPSC Colony, Shyam Colony, Mitra Nagar, Shivsagar Colony, Choudhary Colony, Jeevandeep Colony, Chankyapuri, Ambay Vihaar, Sanchar Nagar and Gauri Nagar.

The solid waste generated in the ward is estimated as 4.4 tonnes per day. As per the Municipal Corporation there are 39 beats in the ward and one tractor with a capacity of 3.5 to 4 tonnes is used for transferring the waste. The nearest waste collection depot to the ward is Mittal depot which is located at a distance of 1 km from the ward. About 60% of the ward area is covered by door to door waste collection, while 40% of the ward area remains uncovered by door to door waste collection. This area majorly constitutes of colonies lying on the hills such as Ratidang and Idgaah and due to poor road infrastructure it becomes difficult for the waste collection vehicle to reach there, hence these areas remain un-served by door to door waste collection service. At present there are 2 vehicles for door to door waste collection in the ward which include 1 Auto Shakti (cleaned manually) and 1 Tata Ace (hydraulic). The waste collection vehicles are accompanied with a driver and a helper each and they generally ply the vehicles from 8:00 AM to 12:00 Noon.

4.1 Citizen Engagement

In order to engage with the citizens and understand the situation of ground level issues, the project team analysed the presence of various stakeholders in the study area in consultation with the core group members. This was followed by bifurcation of stakeholders into different categories and initiation of one to one meetings, primary sample surveys in the study area. The outreach initiatives undertaken are discussed below.

4.1.1Primary Surveys

In order to understand the priorities of citizens (different stakeholder groups irrespective of their caste, gender, religion and age), with regard to solid waste management, primary surveys were conducted in ward number 60. In order to have a heterogeneous sample, following set of stakeholders were consulted for the primary surveys.

Stakeholders from Ward 60	Total stakeholders surveyed	Reasons for selecting the stakeholders
Rag Pickers	6-7	Though unorganised but the rag pickers are an important part of the waste management chain
Scrap dealers	5-6	Deal with the waste recycling sector
Door to door waste collection team	6	Help the Municipal Corporation in waste collection
Sweepers	39	Deal with the waste collected from streets and drains
Shopkeepers	15	Minimal in number but contribute to the waste generation in the ward
Households	200, 120 (60%), 65 (33%), 20-25 (5-6%)	In order to have an inclusive sample, various communities have been surveyed as they have different food habits
Total Surveys	260	

Table 3: Stakeholders consulted for primary sample surveys

Source: Sample selected by ICLEI South Asia, in consultation with AMC

Primary surveys were conducted with the objective of understanding the system of waste collection and waste management in the ward. The surveys helped to identify areas in the ward which lack road infrastructure and face problems with regard to door to door collection of waste. The outcomes from the survey helped to identify the areas/communities practicing waste segregation at source (if any) along with understanding the plight of rag pickers who contribute a lot in managing city's waste but are otherwise not a part of the formal waste collection chain. The surveys indicated, that the study area comprises of mix of population from various communities, generating different types of waste. Currently, due to the absence of an adequate door to door waste collection system. in hilly areas of the ward, most of the garbage is dumped in the open areas, including nearby drains leading to their blockage and unhygienic conditions. This practice is mostly observed in Idgaah area and Ratidaang area. The northern part of the ward is hilly as it lies in the foothills of Aravali Ranges. This area lacks proper road infrastructure, thus, street sweeping and door to door waste collection is a challenge in this area. Proper collection of waste has been observed in most of the remaining parts of the study area which include Alaknanda colony, Ganpati Nagar, Lunia colony, Shivsagar Colony RPSC Colony among others.

Primary surveys also indicated that 90% of the residents in the ward own the houses and about 39% of the families have been residing in the ward since more than 10 years. More than 50% of the surveyed residents in the ward are non-vegetarians, out of which 24% households mix the non-vegetarian waste with the other waste, while 24% dump it in the open and 25% throw it separately near the waste collection container. About 57% still use polythene bags while 99% residents from the sample selected agreed to replace polythene bags with cloth bags. About 89% of the households use dustbins for storing waste, while the remaining households use open buckets and polythenes. It was also learnt that 55% of the respondents are aware of waste segregation process and about 66% of the households feed the green waste to animals. 23% households mix the green waste with the other waste. About 58% of the households sell their e-waste directly to the dealers, while the remaining mix it with other waste, indicating lack of awareness and harmful consequences. Only 36% of the households sell the recyclable material to the scrap dealers.

The study area also comprises of commercial area which includes shops. The survey outcomes show that a significant percentage of the shopkeepers agreed to the fact that the existing solid waste management system needs strengthening in order to control the adverse impact of solid waste on water bodies in the city. The survey also indicated that about 73% of the shops generated less than 1kg waste and 100% of the surveyed shopkeepers give their waste to door to door waste collection team. From the sample surveyed, it was found that only 40% of the shops generated plastic waste and only 6% of the shops generated paper waste.

It is also observed that most of the surveyed residents are satisfied with the door to door waste collection service in the ward. Only 12% of the respondents face problem with the door to door waste collection team due to inappropriate timings and 6% of the respondents feel that the vehicle does not stop at proper places for waste collection. Additionally about 50% of the households face problems due to blocked drains, foul smell and health problems generated as a result of waste dumped on the streets and drains.

Door to door waste collection teams- It was found from the surveys that about 50% of the door to door waste collection team members work for about 5-6 hours in the ward while 33% even work for more than 6 hours. There are instances when the labour in the team is absent, then about 67% of the teams proceed to work without the labour while the remaining look for a substitute or do not proceed for work. The team also reported that 67% of them use whistles and 33% ring the doorbell when the audio system of the waste collection team is not working. The residents often give the scraps to the waste collection team. In case the door to door waste collection team does not come to collect the waste then 67% of the residents keep the waste in their premise for the next day and the remaining 33% dispose it off in open plots. All the vehicles stop between 3-4 houses, collect waste from more than 200 houses and make two rounds daily to dump the waste at the depots. The project team also reported that 67% of the door to door waste collection teams segregate the waste in the vehicle itself and they reported that sometimes they face problems in waste collection due to improper functioning of waste collection vehicle.

Sweeping- Survey results indicated the sweepers cover an area of about 200-300 m daily and about 52% of the surveyed sweepers are engaged in sweeping work for 4-5 hours per day, while 30% do sweeping work for 5-6 hours in a day and remaining 18% are involved in sweeping work for more than 6 hours in a day. The daily income of the sweepers has been reported as Rs. 220; therefore about 44% of the surveyed sweepers are engaged in other jobs also. About 81% of the respondents from sweeper category reported that they dump the waste near containers and 11% make a heap in the open and few dump in it the drains.

Scrap dealers- The survey showed that scrap dealers receive 50-100 kg of waste from door to door waste collection team twice a week, majorly from areas within a radius 5 km.

Health- About 81% of the respondents from sweeper category are not comfortable using protective gears such as gloves; masks etc and hence fall sick. 63% of the respondents have reported to be falling sick once in six months. About 73% of the sweepers have reported that they face problems while sweeping due to inadequate provision of sweeping infrastructure (like brooms) by the Municipal Corporation. A similar situation has been observed in the case of rag pickers as 50% respondents fall sick within a period of 3-4 months and none of the rag pickers prefer to use protective gears such as gloves, masks etc. Survey results indicated that the frequency of falling sick within the door to door waste collection team is less as compared to the sweepers and rag pickers. 40% respondents from door to door waste collection team were reported to be falling sick once a year while the remaining 60% reported to be falling sick once in six months.

The survey also highlighted that currently there is no facility for segregation of waste at the depot from where the rag pickers can collect the waste. According to the survey, only 1% of the respondents pay user charges voluntarily for door to door waste collection and it was also learnt that about 45% of the respondents are willing to pay if the waste collection service becomes more efficient.

Following are the few pictures during the survey among the locals.













4.1.2 Focus Group Discussions

After compilation of survey results, the project team presented the survey results to various groups in the ward which included school students, teachers and principal from Tikam Chand Government Senior Secondary School, group of residents at Idgaah area near Ashapura temple which included the female residents, female sweepers, young population, residents near Councillor Office, residents at Alaknanda colony, residents belonging to Raatidang area and rag pickers. The map below shows the location where these focus group discussions were conducted.



During the focus group discussions the participants highlighted that ward number 60 (study area) is inhabited by a wide array of communities belonging to different income groups. Food habits and the waste generated by different communities varied in the entire ward.

Following are the few pictures during the focused group discussion:













Focussed Group Discussions- Indicator wise responses from Stakeholders

PROBLEMS

- Inefficient door to door waste collection team in the areas of Ratideng tiehind kabaristan, Idgaahgali number 1, 3, Ganpati Nagar, area behind Ramdev templeand hear Ashapura temple due to improper collection which happens once one a week or twice a week due to tack of road infrastructure. There are instances when the temales of the house are not interested to participate in the door to door waste collection system; therefore they dump their household waste in the open.
- The door to door waste collection vehicle comes with a very high speed which is very dangerous for the residents.
- Choking of drains due to waste dumping in the drains which contain food waste including non-vegetaran food etc.
- Lack of drain cleaning on daily basis. If usually happens after three 3 days while the street sweeping is done once in four days only.
- There are very less households with individual toilets in logaah, Ashapura temple and Raatidang area, therefore the residents go for open defecation which adds to nuisance in the area and its surroundings.
- Drains such as Nohar Nailah become a nuisance during monsoons as fliey get clogged with the waste dumped in the nailah. The areas on the lower side of the nailah are majorly affected.
- Raatidang and idgaah area lack sufficient number of waste containers hence the people throw the garbage in open.
- Eack of monitoring of waste containers often lead to spilling of waste on the roads by animals and wind. The residents are of the view that the doors of the waste containers are left open by the rag pickers leading to the chaos.
- The income level of rag pickers have been significantly affected after introduction of door to door waste collection as they have also not been included in the waste collection system by the Municipal Corporation.

UGGESTIONS

- None of the residents except the students agree to pay user charges if they are provided with efficient waste management service.
- The existing door to door waste collection system should be strengthened
- The residents should be motivated to segregate their waste at source and awareness should be created among the residents to stop from feeding the green waste to the cattle on roadsides.
- A proper monitoring and control of waste storage sites to ensure that the waste thrown is not spilled on the roads
- The residents of all the communities should be made aware about the significance of waste segregation in order to avoid the instances of recyclable, bio medical waste with the normal waste by the households.

Indicator wise response from various stakeholders

Indicators Stakeholders	Household Coverage	Efficiency of Waste Collection	Complaint Redressal	Segregation	Scientific Disposal	Waste Recovery	Cost Recovery
Idgaah area, Ashapura temple area(20 members)							
Tikam Chand senior secondary school (100+ members)							
Councillor residents in ward 60(10 members)							
Residents at Alaknanda colony(7 members)							
LIG community Idgaah and Raatidang area (8 members)							

Indicators of least importance to the city

Indicators of high importance to the city

5 Additional Assistance to the city on Solid Waste Management Sector

5.1 Swachhata Sarvekshan 2018

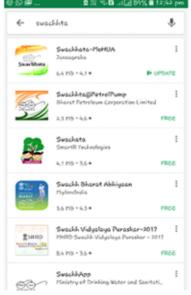
The Ministry of Housing and Urban Affairs conducted Swachhata Sarvekshan 2018 to analyze the performance of 4,041 cities in India. The Sarvekshan aimed to assess their level of progress under Swachh Bharat Mission. Swachhata Sarvekshan provided a platform for the cities to enhance citizen engagement and participate in the process and compete with each other. The cities were ranked based upon the marks scored by them under various categories which included information provided by the Municipal Corporation, independent valuation, direct observation and direct citizen feedback.

The project team along with other agencies like MY FM 94.3 assisted the Municipal Corporation in promoting the use of online application. In order to achieve the target of reaching out to maximum people, the project team visited about 25 larger groups such as employees in government offices- railway workshop, CRPF office,

hospitals, government schools and colleges. The team demonstrated the following steps to use the mobile application:

- Installation of mobile application
- Registration of application
- · Filing a complaint
- · Usage of the app

The categories of complaints included garbage dumps, absence of garbage vehicles, inadequate sweeping, dead animals, public toilet not cleaned, blockage of public toilets, lack of water supply and electricity in public toilets. The team assisted in downloading more than 11,000 applications by targeting the larger groups. Print media along with local radio channels were extensively used by Ajmer Municipal Corporation to promote the activity across the city.



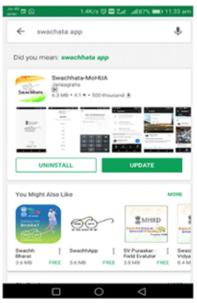


Figure 17: Snapshot of the downloading process- Installation of Application

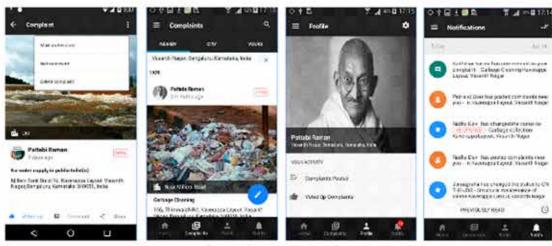
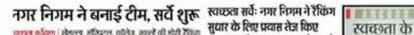


Figure 18: Snapshot of Registration Process



Figure 19: Snapshot of Procedure- Filing a Complaint



वाहात कर्ववान | मोहरस्त, हारियदास, कॉलेज, स्यूपने की होजी टेविंगा

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Figure 20: Snapshot of Media Coverage

5.2 Study for Rag Pickers in Ajmer

After discussion of baseline study along with the results of primary surveys and FGDs for solid waste management sector, Ajmer Municipal Corporation seeked assistance from ICLEI South Asia on conducting a detailed study on rag pickers in the city. Rag pickers have been an integral part of solid waste management chain in the city on informal basis. The project team in consultation with the core group identified two major bastis namely Sansi basti and Khanpura basti in the city which are inhabited by rag pickers belonging to Sansi community and Muslim community, respectively. The discussions held with both the communities are summarized below.

Rag pickers are largely concentrated in Sansi basti and Khanpura basti, followed by Bhagwan Ganj while the remaining rag pickers along with their families are scattered across the city. Besides rag picking work, few of the rag pickers and their families also involve themselves in other occupations such as shoe polishing, chain selling, driving auto rickshaws. In the past, rag pickers in the city were given some space for shoe polishing and chain selling outside the railway station by Railway Board. Under this initiative seven shops have been allocated to the youths above 18 years from rag picking community. The excise department also undertook few training programs under Navyojna scheme to educate the rag pickers. But due to lack of financial support, this program did not prove to be of much help to the rag pickers.

Geographical Location- Khanpura Basti and Sansi Basti are both located on Beawar road. Khanpura Basti is located near Saras dairy factory while Sansi Basti is located in Bhagwan Ganj area. The livelihood of the rag pickers is majorly dependent on collection and selling of recyclable waste; but with the introduction of door to door waste collection system in the city, the per day earnings of the rag pickers has been adversely affected because the residents prefer giving their recyclable waste also to the door to door waste collection team. Secondly the rag pickers have not been involved in the formal chain of waste collection by the city because the entire sanitation work is carried out by the harijans who do not allow people from another community to get involved in sanitation work. Hence the people belonging to harijan community have been employed as helpers in the door to door waste collection

vehicles. The rag pickers now have to target the garbage heaps or waste depots to find out recyclable waste. The recyclable waste collected from garbage heaps and depots is usually dirty and of deteriorated quality, fetching lesser price for the rag pickers.

Socio-Economic profile- The rag pickers in both the bastis have been residing for more than 30 years and have been involved in rag picking. The average household size of both the bastis is 5-6. Sansi basti is the oldest community and is involved in rag picking, shoe polishing along with flourishing businesses and government jobs. The families residing in Khanpura basti belong to muslim community and are involved in rag picking along with other menial jobs, such as labourers in factories, show polishing, auto drivers etc. The male members of the community are majorly involved in menial jobs while the female members do the rag picking work.

The members involved in rag picking are able to earn Rs. 150-200/day. Their income is complemented by the income of other family members who are involved in shoe polishing auto driving, factory labours etc. The daily income of rag pickers gets increased during the time of festivals especially during Diwali and Holi as they are able to collect lot of box and paper waste. The economic condition of rag pickers in Sansi basti is better than that of the rag pickers in Khanpura basti because they own their houses and are involved in better jobs unlike the rag pickers in Khanpura basti who are involved in menial jobs only, besides rag picking. As the income of rag pickers is less, most of the amount earned goes into meeting food and daily needs.

The rag pickers collect recyclable material from open drains, plots and enclosed waste collection depots. The collected waste includes plastic bottles such as shampoo bottles, milk bottles, polythenes, glass bottles, thick cartons, paper, sweet boxes, shoe soles etc. Rag pickers are able to collect 10-15 kg of waste per day, which is sold to scrap dealers or vendors. The amount earned for the recyclable waste depends upon the quality of waste. The filthy and dirty material is sold at cheaper price while the clean material is sold at higher rates.

The rates received for different material and income from other occupations are summarised below:

Material	Rate(Rs/Kg)	Occupation	Income(Rs/Day)	
Mix plastic	10-12	Construction labor	300-400	
Thick Carton(MB)	5-7	Labor with scrap dealers	200-250	
Thin paper box	2-3	Labor in nearby factories	200-250	
Shoe sole	2	Driver of routes autos	300-350	
Metal	Depends upon quality	Cycle Rickshaw pullers	100-250	

5.2.1 Working style/ hours

Rag pickers generally target the waste depots early in the morning between 5-7 AM because maximum quantity of garbage reaches the secondary collection points in morning hours. After collecting the waste from depots, drains etc, the rag pickers return by 3-4 PM in the evening or even later depending upon the area they cater. Some of the rag pickers sell the recyclable material on daily basis while a few store it on their roof tops and sell it collectively in bulk.







Figure 21: Project team conducting meetings with Rag Pickers at KhanpuraBasti&SansiBasti

Ownership of houses- Rag pickers residing in Khanpura basti have very small houses on encroached land. They do not have any legal land ownership document. Since the land is illegally encroached, the complete settlement lacks basic facilities like water

supply, sewerage, drainage, sanitation etc. There are about 150 families residing in Sansi basti. All the rag picker families in this basti own a house but have not been issued a patta by the Municipal Corporation.

5.2.2 Services

Health- Since rag pickers work in unhygienic and dirty environment throughout the day, the health of almost all the rag pickers is adversely affected. Due to lack of awareness, most of the rag pickers do not adopt protective measures such as use of masks and gloves while collecting recyclable material and hence they get infected with diseases such as Asthama and Tuberculosis. Few of the rag pickers have been injured with used syringes and injections while collecting waste because there have been instances of mixing of biomedical waste with the solid waste. There have been instances when few of the rag pickers have been bitten by snakes while picking recyclables from overflowing drains.

Education- All the families involved in the rag picking activities are not educated. Most of their children are also involved in works such as rag picking, shoe polishing etc since a tender age. Few families have enrolled their children in the schools but there have been instances when the children have not been allowed to attend the school by the school authorities because of lack of hygiene maintained by the children. Additionally, they are not able to take the opportunities from government schemes such as Bhamashah yojna which require documentation on behalf of schools.

5.2.3 Summary

Introduction of door to door waste collection has been beneficial for the overall management of waste in the city but at the same time it has led to decrease in the income levels of the rag pickers. Rag pickers have always been an integral part of waste management chain but have never been formally included in the system because it is difficult for the Municipal Corporation to identify and authenticate the rag pickers. After consultation meetings and discussions with the rag pickers the project team identified the following strategies which may be explored by the Municipal Corporation to facilitate the rag pickers:

Encourage/depute an NGO working in solid waste management in the sector to authenticate the identity of rag pickers and issue them identity cards. Centre for Advocacy and Research in Ajmer is already working with rag pickers and solid waste management. Hence it will be useful to collaborate with Centre for Advocacy and Research for this work.

- Supervising the waste depot- Rag pickers may be deputed to supervise the waste depots by allocating responsibility to different rag pickers for different depot. The rag pickers should be allowed access to the recyclable waste at the depot and should be asked to maintain the cleanliness of the depot.
- Waste storage at wards should be created (pilot basis) Residents should be encouraged to deposit their recyclable waste at waste storages at ward level which in turn should be managed by rag pickers. This will reduce the load from the door to door waste collection team and help in reducing the waste which would reach at the trenching ground. It will also help to raise the income of rag pickers.
- Involvement in door to door waste collection- Rag pickers should be deployed by the Municipal Corporation as helpers in door to door waste collection team.

6 Summary

The sections above discuss the status of Solid Waste Management sector in the city with a focus on ward number 60- the study area. Based on the priorities indicated by the members of the core group and stakeholders from ward number 60, improvement in waste collection, segregation have been identified as sectors which need

immediate interventions. The recommendations below outline the processes which the Ajmer Municipal Corporation can adopt at institutional as well as planning level to strengthen the solid waste management sector in the city.

6.1 Recommendations

Following are the recommendations which aim to improve solid waste management:

6.1.1Initiatives at Institutional Level

Baseline documents: The city lacks baseline as well as detailed information on solid waste management. Hence there is a need for the city to compile the same. Ajmer Municipal Corporation should leverage the resources from the Project Management Cell of Smart City (after the PMC is finalised) for developing and strengthening its data base. The detailed documentation of solid waste management.

Capacity Building and Training Programs

Training programs should be organised for different groups of the Municipal Corporation under Solid Waste management as listed below-

SL.NO	Target Groups	Type of Capacity Programs
1	Elected Representatives-Group 1 (Mayor/Chairman, Dy Mayor/Vice Chairman)	General Orientation on: 1. Solid Waste Management 2. SWM Plan Preparation and Implementation 3. Financial Management 4. Monitoring and Evaluation 5. Human Resource Management
2	Elected Representatives Group	General Orientation on Solid Waste Management
3	Senior Officers(Engineer/s, Division Heads)	General Orientation on: 1. Waste Management 2. SWM Plan Preparation and Implementation 3. Financial Management 4. Monitoring & Evaluation 5. Human Resource Management
4	Field Workers	Orientation on Effective Collection, Segregation and Transportation of Solid Waste Orientation on Health and Hygiene Aspects of waste handling
5	Transportation Staff	Maintenance of transportation vehicles Routing of vehicles Orientation on Health and Hygiene Aspects of waste handling
6	NGOs/CBOs/Residents Associations	Role of NGOs in SWM
7	Waste generators	Importance of Segregation and Storage through IEC

6.1.2 Initiatives at Planning Level

Innovative use of technology for collection, transportation and disposal of waste

The Smart City Proposal for Ajmer proposed adoption of innovative technology for the following:

- · Waste segregation and reduction at source
- Initiatives for waste to energy, composting and other waste reuse projects.
- Use of efficient and IT enabled waste collection and disposal activities in the city ex-sensor enabled dustbins, NFC tags at collection point.

Taking leverage from the above proposals under Ajmer Smart City, the Municipal Corporation should launch projects on pilot basis in the city which may be replicated to other parts if found interesting and successful. Following steps/ strategies should be adopted by the Municipal Corporation to tackle the solid waste in the city.

Awareness Generation

Aimer Municipal Corporation should focus on creating awareness amongst the citizens on segregating, recycling and reusing the waste which will help in reduction of the waste reaching the landfill site. This will also save the resources of Municipal Corporation in collection and waste disposal. The concept of segregation should be promoted until the waste management facility is established in the city.

The concept of segregation should be promoted with the help of local media, local NGO's and volunteers. IEC activities in the forms of nukkad- natak, drawing and painting competitions in school and colleges etc should be adopted to reach the people.

For achieving segregation 100 percent door to door waste collection vehicles must be equipped with systematic containers for segregated collection. The present audio should be updated with an addition of message for segregation to the citizens.

Segregation of the waste will also help in reducing the incidents of skin burns by acids, injuries caused due to broken glasses, tube lights etc, hence ensuring safety of door to door waste collection teams. After achieving segregation, Ajmer Municipal Corporation should impose fines for mixing the waste.

Bulk Waste Generators

Ajmer Municipal Corporation should develop byelaws in line with the manual developed for bulk solid waste generators by Ministry of Housing and Urban Affairs. The Ministry of Health launched guidelines for the bulk generators which define the bulk waste generators and their duties according to the SWM Rules 2016. This is a step by step guideline to implement Municipal Solid Waste Management Rules 2016 for Bulk Waste Generators.



BULK SOLID WASTE GENERATORS A Step by Step Guidance for Urban Local Bodies to implement the Solid Waste Management Rules, 2016

Ajmer Municipal Corporation needs to prepare bye laws for the bulk generators of solid waste. The Bye Laws must include provisions for the Solid Waste management, cleanliness and anti-littering. The Bye Laws must have information towards User Fees along with Fines/charges for non-compliance of work and it should also define the duties of the bulk generators. In the absence of the any previous documentation required for the formation of the bye laws, further guidance may be taken up from the Draft Rules/ Byelaws published by SBM.

Identification of bulk generators should be done through field surveys and by issuing public notice. After verification of the bulk generators further hand holding support should be provided by the Ajmer Municipal Corporation. For installation and operation of the onsite treatment facility for the wet waste, technical assistance may be provided by the Corporation along with space for land, facility for collection of segregated waste etc. Ajmer Municipal Corporation should also extend its support towards the utilization of the products like compost; gas etc if the bulk generators are not able to do it. Resident Welfare Associations may also be linked up for further improving the quality of segregation and for giving training related to it at the decentralized level.

On the basis of these guidelines, Coimbatore Municipal Corporation has identified 700 bulk waste generators and has issued notices to 400 units to manage their waste. The waste generators segregate the wet waste and treat it in a decentralized manner.

Involvement of SHGs and Waste Pickers to develop an efficient Waste Management System

Ajmer Municipal Corporation should develop a plan to improve the solid waste collection through involvement of rag pickers. It will help in developing an efficient system along with the reduction in operating costs. Some of the steps which can be taken are as under:

- Identify and educate the rag pickers to include in waste management chain of the city. Rag pickers should be involved to manage the decentralized composting sites and material recovery facilities.
- Mobilize voluntary organizations/ agencies to streamline the street rag pickers and elevate them to door step waste collectors by motivating them to directly collect the waste from households instead of picking up solid or contaminated waste.
- This will help in saving the cost of collection & transportation of recyclable waste, the same money can be used in providing tools/ equipment to the rag pickers.

Aimer Municipal Corporation should take reference from other successful case ex- SWACH which is briefly discussed below. One of the successful examples of involvement of rag pickers in the mainstream of the solid waste management is of Pune city. The waste pickers of Pune integrated and formed a registered trade union known as Kagad Kach Patra Kashtakari Panchayat (KKPKP). They approached the Municipal Corporation of Pune in 2005 to integrate their trade union in solid waste management. Pune Municipal Corporation partnered and involved the waste pickers in the waste management stream. In 2005-2006 Pune Municipal Corporation launched the door to door waste collection in partnership with the Kagad Kach Patra Kashtakari Panchayat and Shreemati Nathibai Damodar Thackersey (SNDT) Women's University. The Kagad Kach Patra Kashtakari Panchayat gave trainings to 1500 waste pickers and provided services to more than 1.25 lakh households in exchange of a user fee. After 2008 the initiative was scaled to city level and SWACH (Solid Waste Collection and Handling or, officially, SWACH Seva Sahakari Sanstha Maryadit, Pune), was formed officially. SWACH is a cooperative of self-employed waste pickers to provide household level waste collection services to the residents of Pune. In 2008 Pune Municipal Corporation also signed MoU with SWACH. SWACH delivered its services to around 4 lakhs households and covered 60% of the geographical area of the city and the remaining areas were covered by the ghanta trucks and community bins for waste disposal. The operating costs were managed through the collection of the user fees from the households and the rest was earned from the sale of recyclables collected. PMC also provided grants for the operational cost and for the welfare of the waste pickers.

SWACH works with two members from the Pune Municipal Corporation, waste pickers and founding members of KKP. A CEO is deputed to lead all the sections which are followed by different coordinators and supervisors.

Resource base

Aimer Municipal Corporation needs to create a resource base to take measures to motivate the citizens for recycling the waste. Municipal Corporation should register the composting experts, licensed scrap dealer, agencies with expertise in recycling etc. and create a resource base by preparing the list of the same and making it available in the public domain. This initiative will help the local institutes, NGOs, RWAs, societies etc. to explore the ideas of waste recycling and earning revenue.

Ensuring 100% Waste Collection and developing an effective Garbage Monitoring system

Ajmer Municipal Corporation should initiate effective monitoring system for Solid Waste Collection and Management to ensure optimal collection, transportation and disposal of waste.

The Ajmer Municipal Corporation has initiated this process and is successfully conducting this on ground. The main features of this system are:

- Ensuring waste collection- Door-to-Door collection, tracking and monitoring of waste through RFID tags on household garbage bins. Suitable collection and monitoring from public bin (semi underground bins) through deployment of Bin Level Sensors (BLS)
- Vehicle Tracking and Monitoring System (VTMS) for coordination, tracking of SWM vehicles.
- Estimation of Solid Waste generation for planning in respect to disposal and input waste for Waste to Energy Plant.

This effective system has helped to gain an effective control on collection, transportation and disposal of solid waste starting from the collection of garbage from household level to the end of the disposal of waste at the city level facilities. The effective monitoring system integrated with the VTMS (Vehicle Tracking and Monitoring System) has resulted in ensuring complete coverage of door to door waste collection, finalizing routes for transfer of waste, monitoring of all JMC vehicles with less human interference.

6.1.3 Strategies for Waste Collection in Congested Areas of the City

Strategies need be formulated for the areas which are congested and have narrow roads where the waste collection vehicles cannot enter. Some of the strategies which could be implemented are as under:

1) Tricycle rickshaws should be introduced in the congested areas as they have less width and these can work for the door to door waste collection. This will also help in reducing load on street sweeping. This process should also include organizing IEC activities to motivate people towards waste management living in these areas. Implementation of this process will reduce instances of the drain flooding as less waste will enter in the drains.

2) Door to Door waste collection should be enhanced in the commercial areas of the city to manage waste collection in the market areas. As the markets open around 10:00 AM, timings of the vehicle should be such that the market areas also get covered.

 Lifting of the secondary storage bins placed in the congested areas and the market areas can be done at proper time to avoid spilling of waste outside.

Promotion of Use of Dustbins- The use of the dustbins and safe disposal of waste should be promoted, especially in the commercial stretch. Presently new bins have been installed in commercial markets, railway stations, bus stand, public parks etc but it is observed that these are not being used optimally.

Mandatory use of protective gears such as gloves, masks etc by rag pickers, sweepers, door to door waste collection teams, scrap dealers etc.

Proper disposal of Religious biodegradable arti-

cles- Anasagar Lake is facing degradation due to waste dumping which also includes religious waste. As of now, there is no provision for prohibiting the disposal of religious waste in the bye laws. Therefore, process for disposing the biodegradable pooja articles should be addressed in the existing Solid Waste Handling and Disposal Rules 2015 which will help in controlling the pollution of the water bodies in the city. Case Example: Greater Mumbai Cleanliness & Sanitation Byelaws- 2006 provide for the safe collection of bio degradable pooja articles at designated sites. The articles are later composted at a suitable location and the receptacles as well as composting units will be manned specifically for this purpose.

Generate revenue to sustain- The Municipal Corporation presently manages the expenditure of solid waste management. However minimal revenue is generated. Efforts should be made towards user fee collection and also imposing fines to stop the nuisance of garbage lying outside.

It is mandatory for the municipal bodies to collect the use fee from the different user groups. Government of Rajasthan has prepared a detailed document on the different user fee to be collected from different user groups, User fee from the bulk generators needs to be imposed in the initial phase by the Municipal Corporation Ajmer which can be taken further in the next phase to the residential group.

Ensure monitoring of waste containers to keep a check on littering of waste in the entire area as well as timely cleaning/ emptying of the waste containers.

Ensure optimum usage of the existing online applications- The city should ensure optimum usage of the existing online applications for complaint redressal system. There are applications which are already being promoted and used by the citizens of Ajmer. The applications include Swachhata App (by the Ministry of Housing and Urban Affairs). For complaints received through online applications an efficient complaint redressal cell still needs to be setup with responsibility matrix.



Swachhata-MoHUA Online Application

Medical Health check-up Camps- Health check-up camps should to be organized for the sweepers and the door to door waste collection teams. Their records should be maintained and timely check-ups through camps should be conducted. This will improve the working and health conditions of the workers.

Monitoring of Waste Collection to avoid Mixing of Bio- Medical Waste

The Municipal Corporation should have an efficient monitoring system to cater to entire waste collection from the door step to disposal. Waste depots should also be monitored to avoid mixing of bio medical waste into the municipal waste.

Expedite the tender process- Municipal Corporation should expedite the tender process for developing waste treatment site in Ajmer in accordance with feasible terms and conditions of the Request For Proposal (RFP) document. Ajmer should refer other cities which have been successful in developing and implementing waste treatment facilities such as Jabalpur. Segregation of waste should be promoted till the treatment facility is finalized and fully functional in order to reduce the quantity of waste reaching the trenching ground.

Promotion of innovative ideas for effective management of Solid Waste Management is essential.

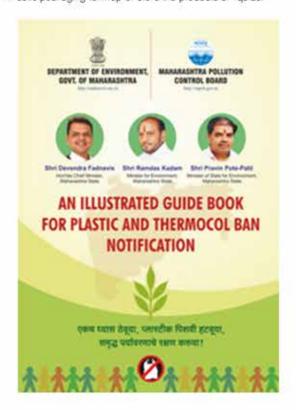
Some of them include:

Reducing the use of Plastics

The Municipal Corporation should promote the use of cloth bags instead of the plastic bags through IEC activities in camps, public meetings etc.

Case Example - Maharashtra Government has banned some of the categories of plastic which include the following:

- Carry bags
- Disposable plastic products like spoons, torks, cups, plates, glasses, bowls, and container
- Disposable thermocol items like plates, glasses, bowls, and containers
- Disposable dish/bowl used for packaging food in hotels, spoon, straw, non-woven polypropylene bags, cups/pouches to store liquid
- Plastic packaging to wrap or store the products or liquids.



Implementing Zero Waste Concept

Ajmer Municipal Corporation should also consider implementing zero waste concepts on pilot basis. Few wards should be identified taken up for the zero waste concepts to work on reduction of waste generation from households, reusing the usable materials, and finally recycling the last left. People should be sensitized to generate less waste at the household level to reduce the environmental impacts and to reduce the load on the city level waste disposal facilities.

- Some of the Indian cities have successfully implemented this concept through the pilot start-ups and are now expanding it to the city level.
- The Coimbatore city under the "Sunya-Zero Waste Management project" has achieved success in ward number 23 of the city. The main driving factors for the success of this pilot conducted were the public private partnerships, community involvement and awareness programs in segregation and recycling of waste. More than 2,000 households and 750 commercial establishments actively participate in this initiative. This initiative also promotes collection of garden waste for converting it into manure. The pilot areas have been declared bin free ward and the Municipal Corporation of Coimbatore is trying to replicate this model into other wards of the west zone.



Managing E-Waste

At present there is no facility for the E-Waste Collection in Ajmer city, so it is proposed that the city should have an E-Waste management facility. For setting up of the facility and formulation of an E-Waste management plan, guidance may be taken from Implementation Guidelines for E-Waste (Management) Rules, 2016 by Central Pollution Control Board and Rajasthan Pollution Control Board. This step will reduce the load on the Municipal Corporation as presently the E-Waste is getting mixed with the Municipal Waste.



Local Governments For Sustainability, South Asia