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**RCUES, Mumbai**  
Enabling better cities...



# Urban Environ Vision

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An information bulletin



Regional Centre for Urban & Environmental Studies  
All India Institute of Local Self-Government, Mumbai

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**Mr. Ranjit Chavan**

Director General, AIILSG, &  
Editor in-Chief  
**Mr. Rajiv Agarwal, IAS (Retd.)**

Director, RCUES, AIILSG, &  
Editor  
**Ms. Utkarsha Kavadi**



***Urban Environ Vision aims to take its readers through the journey of RCUES, Mumbai while providing encouragement and inspiration. It offers a platform to display the efforts undertaken by RCUES, Mumbai and showcase its achievements.***

## Regional Specialized Training Programme on 'Solid Waste Management with a focus on 100% Segregation of Solid Waste'

7<sup>th</sup> & 8<sup>th</sup> February, 2018, Panaji, Goa.

*The key pointers of the agenda for this programme were to familiarize participants about various waste segregation methods, SWM Rules - 2016, introduce various treatment technologies and facilitate a site visit where good practices of 100% segregation have been implemented.*

### Introduction

The Government of India (GOI) launched the Swachh Bharat Mission with the vision of ensuring hygiene, waste management and sanitation across the nation, as a tribute to Mahatma Gandhi on his 150<sup>th</sup> birth anniversary, to be celebrated in the year 2019. With this background SBM was launched on 2<sup>nd</sup> October, 2014 and is being implemented by the Ministry of Housing & Urban Affairs (MoHUA), Government of India (GoI) in Urban areas.

The mission also focuses on improving the levels of cleanliness through Solid Waste Management activities. Municipal Solid Waste Management (MSWM) is an important component of this Mission and the most essential service for maintaining the quality of life of people in the urban areas for ensuring better standard of health, sanitation and environment. MSWM in the country has emerged as a severe problem not only because of environmental and aesthetic concerns but also because of sheer quantities generated every day. According to Central Pollution Control Board 144,165 TPD of MSW was generated in India during 2013-14. Of the total waste generated, approximately 115,742 TPD (80%) of MSW was collected and only 32,871 TPD (22.8%) was treated. SBM offers an opportunity to address the issues linked with this situation.

Solid Waste Management Rules - 2016, is mandatory for all municipal bodies to effectively manage solid waste in the cities. It is mandatory for waste generators to store segregated waste at source and for municipal bodies to collect such a waste in a segregated manner directly from the households and transport it to designated places for appropriate treatment and processing. Major focus of SWM Rules - 2016 is on segregation at source and zero garbage concept.

It is essential for municipal bodies to adopt more systematic approach towards planning and management for solid waste and develop capacities of their staff / officials towards effective and efficient solid waste management system.

Against this background, Regional Centre for Urban & Environmental Studies (RCUES) of All India Institute of Local Self-Government (AIILSG), Mumbai organized a Regional Specialized Training Programme on Solid Waste Management with a focus on 100% Segregation of Solid Waste' on 7<sup>th</sup> & 8<sup>th</sup> February, 2018 at Panaji, Goa. This programme was supported by MoHUA, GoI.

### Key Objective

The key objective of the programme was to expedite the process of achieving goals of effective solid waste management in India with a focus on 100% segregation of waste at source, as envisaged in SBM, Urban and SWM Rules - 2016.

### Participation



Participants during the programme at Panaji, Goa.



76 participants comprising Presidents, Vice-Presidents, Chairman of various Committees, Municipal Councilors, Chief Officers, SWM Engineers, City Engineers, Health Officers, Sanitary Supervisors, Surveyors, Sanitary Inspectors from urban local bodies of Maharashtra, Gujarat, Rajasthan and Goa attended this programme.

## Inauguration

On day one, Mrs. Maleka Ansari, Research Officer, RCUES of AILSG, Mumbai welcomed the participants. The introductory session highlighted upon the activities conducted by RCUES, Mumbai in training and research areas. Mrs. Ansari also briefed about the programme coverage and activities to be covered under the training programme. This two days programme was included with presentations, experience sharing, participatory activities, group work and site visit. The introduction was followed by inauguration of the programme.



*Inaugural Function at Panaji, Goa.*

The Specialized Training Programme was inaugurated by Mr. R. V. Patel, President, Bharuch Municipal Council, Gujarat, in the presence of other dignitaries including Mrs. Pushpaben Tank, President, Anjar Municipality, Mrs. Meenaben Patel, President, Ankleshwar Municipality of Gujarat and Mr. Dinesh Kumar Meena, President, Sadri Pali Municipal Council of Rajasthan, by lighting the traditional lamp of light.

In the inaugural address Mr. Patel discussed about peoples' participation being the key source for the implementation of SWM for achieving 100% segregation by channelizing other necessary infrastructure supported by ULBs. He also focused on Swachh Survekshan, 2018.

## Technical Sessions

Mrs. Maleka Ansari, Research Officer, RCUES of AILSG, Mumbai discussed on 'Overview of Solid Waste Management (SWM) and Swachh Bharat Mission (SBM)'. She discussed the Municipal Solid Wastes (Management & Handlings Rules - 2000) and also focused on the provisions of the SWM Rules - 2016 by emphasizing on segregation of waste at source, a basic need for channelizing the waste to wealth by recovery, reuse and recycle. Further, she elaborated on the role of informal sectors waste-pickers and she stated that almost 20% of a city's waste was usually segregated and recycled by this sector. By doing this, they prevent the waste from being burned or reaching the landfills. In this way, they play a significant role in fighting greenhouse emissions, and contribute to SBM.



*Mrs. Maleka Ansari, Research Officer, RCUES of AILSG, Mumbai addressing the participants.*

Mr. Ritvik Rao, Director and Co-founder, Composting and Maintenance Division, Sampurna Earth, Mumbai delivered lectures on 'SWM Rules - 2016 and Legal Framework for SWM with a focus on Segregation of Solid Waste' and 'Segregation and Recycling Technologies'. Mr. Rao stressed on the urgent need for disposal of solid waste at source of generation, pointing to SWM Rules - 2016 which compels segregation of solid waste. He said that if waste is properly segregated, then by using different technologies and following three R (reduce, recycle and reuse) it can be prevented from reaching the land fill site. According to him, biodegradable waste can be managed through aerobic composting, by turning spoil to soil. He also discussed on composting solutions at various levels: household level,

community level (drum based), and composting pits, vermi-composting with earthworms, mulching and earth worm composting mechanized composting, composting machine with curing systems briquetting and pelleting using garden trims.



*Mr. Ritvik Rao, Director and Co-founder, Composting and Maintenance Division, Sampurna Earth, Mumbai addressing the participants.*

He also discussed a case study of Cuncolim city composting plant and material recovery centre, where wet waste was being disposed by converting into compost and dry waste was sorted differently by segregating plastic, paper, bottles, metals delivered to recycling industries.



*Ms. Deepali Naik, Joint Secretary - Protocol, Director - Public Grievances, Government of Goa addressing the participants.*

Ms. Deepali Naik, Joint Secretary - Protocol, Director - Public Grievances, Government of Goa shared her views on 'Management and Segregation of Solid Waste through Participatory Approach'. She discussed the efforts taken by Mormugaon (Vasco city) with the help of school children, senior citizens, retired persons, elected representatives and other stakeholders of the city. The announcement of the cleanliness mission started on 19<sup>th</sup> December, 2015, on the memorable day of Goa liberation where meetings and rallies were conducted, and cloth bags were distributed on the occasion.

## Field Visit

A Field Visit was organized in the post lunch session at :

- St. Inez – Residential Colony Project : 35 residential societies with the help of Corporation of the City of Panaji (CCP) are segregating solid waste since 2006 and the residents maintain a processing & composting unit. The participants were taken on a visit to St. Inez – Residential Colony Project, where household garbage was being collected in a segregated manner. Dry waste was transported to Turka village dumping site. Wet waste was processed in 2 composting units within the society since 2007-08. Every fourth day, the wet garbage was churned for faster aerobic decomposition. After 45 days the wet waste gets converted into compost which is used for gardening purpose. This results in minimization of garbage, transportation cost and dumping expenses.
- Material Recovery Facility & Sorting Centre : CCP has established a material recovery centre. They have introduced colorful containers for identification of particular dry waste like plastic, Styrofoam / thermocol and food packaging materials like potato chips covers are brought to the Material Recovery Facility & Sorting Centre.
  - i. Grey for glass and metals
  - ii. Brown for papers and cartridge
  - iii. Orange for plastic waste
  - iv. Purple for non-recyclable, thermocol, ceramic, rubber, rexine, leather, batteries, etc.
  - v. Yellow for Biomedical waste collected and send for scientific disposal.

Non recyclable wastes are processed through blending and compressing technique and send to the Associated Cement Factory (ACF), Karnataka.



- Panaji Market Project : Vegetable, Fish and Mutton wastes are blended in OWC/500 machine set by CCP for Shredding which makes easy composting.
- Pato Plant : As a tourist city, CCP started Pato Plant opposite to the LIC building specially for hotel waste food processing. Hotel food waste is mixed with soil and shredded in WC/500 machine and manure prepared which is again utilizing for home gardening and selling.
- Saligaon SWM plant developed and operated by Hindustan Waste Treatment Private Limited (HWTPL) which was treating 100 tons of waste per day. Mr. Ganesh Kandaswamy, General Manager (Design and Engineering) briefed the participants and explained the salient features of the plant.



*Field Visit at Material Recovery Facility & Sorting Centre and Saligaon SWM Plant on 7<sup>th</sup> February, 2018.*

On day two, presentations were made by the representatives of ULBs on good practices under SWM focusing on segregation of solid waste.

Mr. Rajesh Gandhi, Dy. Engineer, SWM, Navsari Municipality of Gujarat presented a case study on 'Solid Waste Management covering 100% Segregation at HH level'. He briefly discussed about action plan which was implemented before commencement of segregation of solid waste in Navsari, by route mapping, household surveys, visits to home, shop, market place, and industries slaughter house by ULB officers. He stressed on application of IEC techniques, because it was important to convince the city dwellers about the hazards due to improper management of solid waste. Further he also informed that Navsari city has been declared a clean city by Gujarat State Government, in western Gujarat in the range of 1 to 5 lakhs population, and awarded for the same.



*Mr. Rajesh Gandhi, Dy. Engineer, SWM, Navsari Municipality of Gujarat addressing the participants.*

Mr. Ramdas Kokre, Chief Officer, Karjat Municipal Council of Maharashtra presented a case study on 'Good Practices on SWM: A case of Vengurla'. He discussed about the cleanliness drive implemented in Vengurla when he was chief officer of Vengurla and also stressed on the project's sustainability. He started the cleanliness drive by the pledge to support by his own, other officials and staff.

The following activities completed for effective implementation of cleanliness drive :

- Tree plantation movement / Vanrai Bhandhare
- Briquette formation from garden waste
- Biomethanation plant started
- Installation of plastic crusher and garbage screening machine.



*Mr. Ramdas Kokre, Chief Officer, Karjat Municipal Council of Maharashtra addressing the participants.*

He proudly informed the participants about that the vengurla is first city in Maharashtra where plastic granules coated by tar, used in road construction and 200 mts road constructed.

Mr. Ramesh Yadawar, Sr. Programme Officer, Participatory Research in Asia (PRIA), Ajmer, Rajasthan presented a case study on 'Solid Waste Management: Methods of achieving Segregation in the City'. He discussed on Swachh project implemented in Pune city. The main aim of this project was transforming systems, transforming perceptions and transforming lives by providing awareness to the citizens about the importance of proper waste management approach.

He also focused on the achievements of the project -

- Upgradation of waste pickers started.
- Collection of service user fees.
- Swachh project workers benefitted by financial and health incentives.
- Sustainability of project.



*Mr. Ramesh Yadawar, Sr. Programme Officer, PRIA, Ajmer, Rajasthan addressing the participants.*

## Group Work

Theme of this session was to prepare a SWM plans pertaining to challenges in SWM with focus on 100% segregation and its solution. 8 groups were formed consisting of 9 members in each group. The aim of conducting the group work was to engage all participants to apply the knowledge shared in the technical sessions in addressing existing challenges of segregation in different cities.

With extensive discussions amongst the group members, each group developed their own ideas by studying the challenges faced in process of achieving 100% segregation and preparation of effective SWM plan which could be implemented.



*Participants engaged in group work during the Programme.*

It was observed that, each group prepared a very effective plan by considering grass root level problems, administrative constraints and financial gaps. Prepared plans were presented by each group and token of appreciation was given to the best plan preparation and presentation amongst the 8 groups.



*Participants awarded for best group work and presentation.*

## Conclusion

Mr. Ramdas Kokre, Chief Officer, Karjat Municipal Council, Maharashtra gave a special address and Mrs. Ansari concluded with a vote of thanks to resource persons and participants.



## Regional Specialized Training Programme on 'Solid Waste Management with a focus on 100% Segregation of Solid Waste'

22<sup>nd</sup> & 23<sup>rd</sup> February, 2018, Guwahati, Assam.

*The key highlight of this programme was site visit to observe the waste assimilator installed as a composting technique.*

### Introduction

The dream of clean India, visualized by Mahatma Gandhi is gradually taking shape since the launch of Swachh Bharat Mission on 2<sup>nd</sup> October, 2014. In the revised Rules of Solid Waste Management - 2016, focus is being given on segregation of solid waste.

Solid Waste Management Rules - 2016 is mandatory for all municipal bodies to effectively manage solid waste in cities. It is mandatory for waste generators to store segregated waste at source and municipal bodies to collect such a waste in a segregated manner directly from the households and transport it to the designated places for appropriate treatment and processing. Major focus of SWM Rule is on segregation at source and zero garbage concepts.

It is essential for municipal bodies to adopt a more systematic approach towards planning and management for solid waste and develop capacities of their staff / officials towards effective and efficient solid waste management system.

In view of the above, Regional Centre for Urban & Environmental Studies (RCUES) of All India Institute of Local Self-Government (AIILSG), Mumbai organized a Regional Specialized Training Programme on 'Solid Waste Management with a focus on 100% Segregation of Solid Waste' on 22<sup>nd</sup> & 23<sup>rd</sup> February, 2018 at Guwahati, Assam. This programme was supported by Ministry of Housing & Urban Affairs (MoHUA), Government of India (GoI).

### Key Objective

The key objective of the programme was to expedite the process of achieving goals of effective solid waste management in India with a focus on 100% segregation of waste at source, as envisaged in SBM, Urban and SWM Rules - 2016.

### Participation

42 participants comprising municipal elected representatives, municipal engineers and sanitary inspectors from the states of Assam, Gujarat and Maharashtra attended this programme.



*Participants during the programme at Guwahati, Assam.*

## Inauguration

The training programme began with a welcome address by Mrs. Neha Hardikar, Research Officer, RCUES of AIILSG, Mumbai. She greeted the dignitaries on the dais and participants, and briefly explained the objective of the programme.

Ms. Nazreen Ahmed, ACS, Mission Director, Swachh Bharat Mission (SBM) and Director, Directorate of Municipal Administration (DMA), Government of Assam, inaugurated the training programme by lighting the lamp. In the inaugural speech, she commended RCUES, Mumbai for the effort to organize a training programme in Assam. She briefly described the status of solid waste management in Assam state with context to SBM. She added that, RCUES, Mumbai has created a platform for knowledge sharing across the states, which is always beneficial for municipal functionaries from Assam. She concluded by wishing the training programme a great success.



*Ms. Nazreen Ahmed, ACS, Mission Director, SBM and Director, DMA, Government of Assam, inaugurated the programme by lighting the lamp in the presence of Mrs. Neha Hardikar, Research Officer, RCUES of AIILSG, Mumbai, Mr. Anjan Sharma, Institutional Specialist, RWSSP-LIS, Assam and Mr. Ranjit Kalita, Nodal Officer, SBM, Urban, Assam.*

## Technical Sessions

The first technical session commenced after the inaugural session by Mr. Anjan Sharma, Institutional Specialist, Rural Water Supply and Sanitation Project for Low Income States

(RWSSP-LIS), Assam on 'Review of Swachh Bharat Mission (SBM) and SWM' and 'Solid Waste Management Rules - 2016'. He talked about the Solid Waste Management (SWM) component of SBM, Urban. He shared that the door to door collection efficiency in the country has increased from 48% (3995 wards out of target - 81015 wards) to 53% (51734 wards out of target 82725 wards). According to the data listed on SBM official website, Andaman and Nicobar Islands, Chandigarh, Dadra and Nagar Haveli, NCT of Delhi, Goa, Meghalaya, Nagaland and Puducherry have achieved 100% door to door collection. Further he explained the constraints in the North Eastern states to achieve the objectives of SBM, Urban.



*Mr. Anjan Sharma, Institutional Specialist, RWSSP-LIS, Assam addressing the participants.*

He spoke about Solid Waste Management Rules - 2016. He stated that the urban areas in Assam are in dire need of solid waste management. He went on to talk about segregation of waste which is a mandate as per the SWM Rules - 2016 emphasizing on segregation. In order to ensure that ULBs are able to enhance their own source of revenue, it has been mandated that each household has to pay a user fee against the service of collection of waste. It is the duty of the ULB to prepare Detailed Project Report in order to carry out solid waste management projects. Further, he spoke about the treatment of solid waste. The options included thermal (incineration - in presence of oxygen), pyrolysis and gasification-thermal processing in absence of oxygen and biological treatment methods which involve aerobic (in presence of oxygen) and anaerobic (in absence of oxygen) processing. He also talked about sanitary landfills which is the scientific way to dispose of inert waste.

Finally he discussed best practices in different cities. Ahmedabad had incorporated policy related innovations and steps in the field of effective solid waste management, while Kochi had effectively implemented segregation of waste and composting of waste.

The second session was conducted by Mr. Debartha Banerjee, Director, Sampoorna Earth Solutions Pvt. Ltd., Mumbai. He spoke about technologies to treat solid waste. He mentioned that waste generation in urban areas have been rapidly growing and thus creating undesirable consequences like saturated dumpsites. Thus, dumpsites do not present a sustainable solution to waste management. Therefore, he explained various decentralized waste processing methods. The first method was that of Karnataka's 2 bin 1 bag system where in dry waste and wet waste were stored in segregated manner in the bins and domestic hazardous waste was stored in the bag. Other techniques that he explained included aerobic composting which has following important aspects - moisture level, bacterial content, C:N ratio and temperature. He went on to explain the various containers in which aerobic composting could be carried out which include aerated baskets, dustbins, khambas, drums, etc.



*Mr. Debartha Banerjee, Director, Sampoorna Earth Solutions Pvt. Ltd., Mumbai addressing the participants.*

He also talked about community level composting using brick and cement pits and OWCs (organic waste converter) which is basically mechanical composting with tray curing systems.

He mentioned another technology by which briquettes / pellets were made out of garden waste and could be used as RDF (refuse derived fuel). Further, he explained the Nisargruna technology developed by BARC (Bhabha Atomic Research Centre) which converts organic wet waste in to manure and biogas. This technology has been adopted by various ULBs including Rajkot Municipal Corporation, Kolhapur Municipal Corporation etc. He also explained the importance of Dry Waste Collection Centres in order to take care of the dry waste in proper disposal and treatment.

Ms. Kishori Gadre, Advisor, Janawani, Pune delivered the session on 'Community Participation in SWM with focus on Segregation'. Initially, she explained the SWM scenario across the states. She stated that solid waste cannot be managed effectively unless local authorities develop a system. She explained the SWM value chain from waste generation to disposal. She explained the existing government initiatives to resolve this problem. She concluded by explaining role of stakeholders, ULBs and citizens in keeping the cities clean and healthy.



*Ms. Kishori Gadre, Advisor, Janawani, Pune addressing the participants.*

The next was participatory session on 'IEC for effective Solid Waste Management' was taken by Ms. Mrudula Kelkar, Expert Trainer, Pune. At the beginning, she developed a rapport among the participants with interactive games on communication skills. She explained the need for effective communication through these games. Later she focused on



effective communication for implementation of government schemes through community participation with finger puppet show. She explained how a traditional media, it is very effective for awareness generation at community level.



*Ms. Mrudula Kelkar, Expert Trainer, Pune addressing the participants.*

On day two, a presentation was made by Dr. Amarjyoti Kashyap, President and Chief Functionary, ENVIRON, Assam. He talked about 'Waste Assimilator' developed by ENVIRON based on the concept of vermi-composting from wet/organic waste. This assimilator can be used both at the household level as well as the community level. It takes about 5-6 months for the production of compost. During the process, it leaches out leachate (vermi-wash) which has a high nutritional value and can be used after dilution as a soil enricher.



*Dr. Amarjyoti Kashyap, President and Chief Functionary, ENVIRON, Assam addressing the participants.*

He also spoke about organic kitchen gardening and domestic organic green tea using vermi-wash and vermi-compost. Further, he talked about plastic waste. The major challenge in plastic waste is posed by non-recyclable plastic for instance-multi layered plastic. Since they cannot be recycled, they can be used to create various plastic crafts like garlands, chair backs, table mats, coasters, table tops, etc.

## Site Visit

The participatory session was followed by a site visit to IAS Officers Colony near Khanapara, Guwahati. The colony comprised around 50 IAS officers households. Waste assimilators had been installed both at household as well as community levels. Around 25 households had individual waste assimilators and waste generated from the other 25 households, care-takers and police officials quarters was being fed to the community waste assimilator. The waste generated per day was nearly 50 Kgs. The installed capacity of the Waste Assimilator was 100 Kgs. Nearly 1000 Kgs. of compost was being produced on site within a duration of 6 months. The capital cost of installation was 2.5 lakhs. The O and M cost of maintaining the structure was Rs.30,000/- per month. As by-product of this waste processing plant, bio-pest repellent or vermi-wash was being produced which could be further diluted and used as a soil enricher.



*Participants during site visit to IAS Officers Colony near Khanapara, Guwahati.*

## Conclusion

The training programme was concluded by Mrs. Hardikar by taking feedback from participants, distributing certificates and proposing vote of thanks.

## Regional Specialized Training Programme on 'Solid Waste Management with a focus on 100% Segregation of Solid Waste'

22<sup>nd</sup> & 23<sup>rd</sup> February, 2018, Rajkot, Gujarat.

*The key pointers of the agenda for this programme were creating knowledge about SWM Rules - 2016 and importance of segregation of solid waste among the participants and raising awareness on reduce, recycle, reuse and recovery of waste technologies.*

### Introduction

Urban India is the world's third largest generator of solid waste with 1,43,449 metric tonnes of municipal solid waste created every day, according to Central Pollution Control Board report (2014-2015), and these figures increase every day with an increase in population. The collection, segregation and scientific disposal of waste can be a herculean effort for civic bodies and it is one of the biggest challenges faced by Indian cities. The management of municipal solid waste in India has continued to be a severe problem not only because of environmental and aesthetic concerns but also because of the enormous quantities generated every day. Rapid urbanisation, limited financial resources of the ULBs, institutional weaknesses, improper choice of technologies, and lack of public awareness about the importance of SWM are the key hurdles which plague the Indian cities.

The Swachh Bharat Mission (SBM) was launched on 2<sup>nd</sup> of October, 2014 with a vision to achieve a clean India by overcoming the above-mentioned obstacles and to improve hygiene, waste management and sanitation across the country. Municipal Solid Waste Management (MSWM) is an important component of this Mission dealing with cycle of waste (generation to disposal). The Solid Waste Management Rules - 2016, has empowered the ULBs to effectively manage urban solid waste in their cities. These rules mandate the segregation of waste at source.

There is a need to enhance the existing system of solid waste management practiced by the ULBs through adopting various

technologies and to empower them to recognize the gaps in the present system in alignment with the SBM to achieve a clean India.

Against this background, Regional Centre for Urban & Environmental Studies (RCUES) of All India Institute of Local Self-Government (AIILSG), Mumbai organized a Regional Specialized Training Programme on Solid Waste Management with a focus on 100% Segregation of Solid Waste' on 22<sup>nd</sup> & 23<sup>rd</sup> February, 2018 at Rajkot, Gujarat. This programme was supported by MoHUA, GoI.

### Key Objective

The key objective of the programme was to expedite the process of achieving goals of effective solid waste management in India with a focus on 100% segregation of waste at source, as envisaged in SBM, Urban and SWM Rules - 2016.

### Participation

40 participants including Presidents, Vice-Presidents, Chairman of various committees, Municipal Councilors, Chief Officers, SWM Engineers, Mechanical Engineers, Health Officers, Sanitary Supervisors, Chief Sanitary Inspectors from urban local bodies of Gujarat and Rajasthan attended this programme.





*Dr. Jaiman Upadhyay, Hon'ble Mayor, Rajkot Municipal Corporation along with Dr. Chandan Karkare, Regional Director, AIILSG, Rajkot, Mrs. Maleka Ansari, Research Officer, RCUES of AIILSG, Mumbai and participants.*

## Inauguration

On day one, Mrs. Maleka Ansari, Research Officer, RCUES of AIILSG, Mumbai welcomed the participants and she briefed about the programme coverage and activities to be conducted in the training programme. The two day programme included lectures, presentations, experience sharing participatory activities, and site visit to demonstrate good practices developed under solid waste management.



*Inaugural Function at Rajkot, Gujarat.*

The programme was inaugurated by Dr. Jaiman Upadhyay, Hon'ble Mayor, Rajkot Municipal Corporation, Gujarat in presence of Mr. J. C. Solanki, Chief Officer, Mahuva Municipality of Gujarat, participants and guest faculties by lighting the traditional lamp of light.

In the inaugural address, Dr. Upadhyay discussed about the issues and challenges of solid waste management, especially related to the segregation process for achieving zero garbage city, as envisioned by SBM. As per the depth of his knowledge and experience on the subject, he said small municipalities are unable to manage solid waste due to financial problem and fail to achieve the SBM targets. He encouraged exploring various financial models to overcome the financial barriers in addressing solid waste management related challenges.



*Dr. Jaiman Upadhyay, Hon'ble Mayor, Rajkot Municipal Corporation addressing the participants. Mrs. Maleka Ansari, Research Officer, RCUES of AIILSG, Mumbai and Dr. Chandan Karkare, Regional Director, AIILSG, Rajkot on the dais.*

Dr. Upadhyay also discussed about the solid waste management in his city, with 12 lakhs dustbins distributed in the entire city. With the help of IEC techniques city dwellers were encouraged to store the wet and dry waste separately, 18 composting plants were started with help of Excel industries where wet waste of each ward was being treated into compost.



Mr. Solanki discussed about Swachh Bharat Mission, for achieving 100% segregation. He noted that citizen's participation along with administrative support is equally important to achieve 100% segregation of solid waste. He expressed his best wishes for the success of two days training programme.



*Mr. J. C. Solanki, Chief Officer, Mahuva Municipality, Gujarat addressing the participants.*

## Technical Sessions

Mrs. Maleka Ansari, Research Officer, RCUES of AILSG, Mumbai discussed on 'Overview of Solid Waste Management and Swachh Bharat Mission'. She discussed Municipal Solid Wastes (Management & Handling Rules - 2000) and also focused on the provisions of the SWM Rules - 2016 by emphasizing on the segregation of waste at source, a basic need for channelizing the waste to wealth by adopting various existing technologies.

Further Mrs. Ansari discussed about the necessary actions which should be implemented by every city and supported by the citizens: creating environmental awareness, encouraging plantation, proper disposal of garbage as per the SWM rules, 100% segregation of solid waste, maintaining hygiene, minimization of plastic use, preserving water, preserving environment, etc.

Mr. Ritvik Rao, Director and Co-founder, Composting and Maintenance Division, Sampurna Earth, Mumbai delivered lectures on 'SWM Rules - 2016 and Legal Framework for SWM with a focus on Segregation of Solid Waste' and 'Segregation and Recycling Technologies'. He highlighted the comparative points of MSWM (Management & Handling Rules - 2000) and SWM Rules - 2016. Mr. Rao also discussed various segregation and wet waste disposal technologies. According to him, biodegradable waste can be managed through aerobic composting turning spoil to soil. He also discussed composting solutions at various levels, based on quantity on waste generated: household level, community level (drum based), and composting pits, vermi-composting with earthworms, mulching and earth worm composting mechanized composting, composting machine with curing systems briquetting and pelleting using garden trims. He also presented a case study on Kolhapur (Maharashtra) where electricity and gas was being generated by processing biodegradable waste.



*Mr. Ritvik Rao, Director and Co-founder, Composting and Maintenance Division, Sampurna Earth, Mumbai addressing the participants.*

Mr. Rajesh Gandhi, Dy. Engineer, SWM, Navsari Municipality of Gujarat presented a case study on 'Solid Waste Management covering 100% Segregation at HH level'. He informed the participants that they had applied IEC techniques effectively for achieving 100% segregation.

## Field Visit

A field visit was organized for the participants to the Bio-methanation plant developed by Rajkot Municipal Corporation (RMC) for electricity and gas generation. This plant was executed with the support of Sampurna Earth Pvt, Ltd., Mumbai. Mr. Ritvik Rao, Director and Co-founder, Composting and Maintenance Division, Sampurna Earth, Mumbai and Mr. Ambesh Dave, In-charge, Wealth out of Waste Cell (WoW), RMC coordinated the entire field visit.

RMC had also introduced organic waste converter compost plant in 18 wards under decentralization policy with the support of Excel Industries.

Such plants have been set up in every ward having capacity of 5 tons of organic waste processing. Organic waste from the surrounding market and hotels are collected and converted into manure by processing. Participants also visited the Jubilee Garden composting plant.

RMC has initiated a Composting plant for garden waste, 40% organic waste mixed with 60% garden waste (dry leaves) mixing with proportionate ratio of bio-culom powder processed and converted into compost which is used for gardening. Participants visited Garden Waste composting plant near Madhav Rao Sindhia Stadium, Racecourse ground.

*Glimpses of Field Visit at Bio-methanation Plant*



*Glimpses of Field Visit at Compost Plant at Jubilee Garden.*



On day two, Mr. Jatin Sheth, SWM Expert and Consultant AIILSG, Ahmedabad delivered a lecture on 'Role of Waste Pickers and their Value Addition in Segregation Process'. He briefly discussed about the status of waste pickers and the issues pertaining to their health and occupational hazards. He talked on the current malpractices of solid waste storage at the household level. Most households disposed waste together, including hazardous medical waste and soiled sanitary napkins and diapers, exposure to which causes various diseases. Further Mr. Sheth focused on SWM Rules - 2016 which identifies the important role of the waste pickers and formulates their integration in the society.



*Mr. Jatin Sheth, SWM Expert and Consultant, AIILSG, Ahmedabad addressing the participants.*

In second session of the day, presentation were made by ULBs representatives, on good practices which they had adopted in SWM focusing segregation of solid waste at city, and state level.

Mr. Mohammad Iqbal Shaikh, Chief Sanitary Inspector, Surat Municipal Corporation, Gujarat presented the Good Practices in SWM in Surat focusing 100% segregation. He informed that they have started door to door collection in all the wards, and collection of household garbage in segregated form in 10 wards. IEC techniques have also been used through cleanliness messages painted on wall, through hoardings, by conducting awareness campaigns in school, colleges, organizing awareness programmes with the help of NGOs. He informed that the people are responding well to such efforts and contributing positively to the cleanliness drives.



*Mr. Mohammad Iqbal Shaikh, Chief Sanitary Inspector, Surat Municipal Corporation, Gujarat addressing the participants.*

Mr. Nitin Kumar Patel, Sanitary Sub Inspector, Surat Municipal Corporation, Gujarat presented on 'Potential Environment Hazard Transformed into Nutrient Rich Organic Fertilizer'. He discussed about the vermi-composting project implemented in three wards of Surat. He talked about the initial constraints faced at the commencement of project, and how they overcame them to create a successful project.

Mrs. Taruna Gokhru, Chairman, Health and Sanitation Committee, Nimbahera Municipal Council, Rajasthan presented on 'Status of SWM Implementation and Segregation of Waste in Rajasthan'. She discussed the implementation of solid waste in small and medium cities of Rajasthan. Further she pointed that labour, equipment, vehicles, institutional arrangements, proper planning and citizens positive response are the key factors which determine the success of segregation based SWM.

## Conclusion

At the end of the training programme, Mrs. Ansari concluded with a vote of thanks to resource persons and participants.



# Building Capacities for Open Defecation Free Cities (ODF) / Faecal Sludge and Septage Management (FSSM) for ULBs in Rajasthan under Sanitation Capacity Building Platform (SCBP)

## Project Brief

All India Institute of Local Self Government (AIILSG) in coordination with National Institute of Urban Affairs (NIUA) is providing support for building capacities for Open Defecation Free cities (ODF) / Faecal Sludge and Septage Management (FSSM) for ULBs to the state of Rajasthan under Sanitation Capacity Building Platform (SCBP). The purpose is to provide services towards building capacities of cities and other stakeholders working in urban sanitation to ensure improved delivery of sanitation services through decentralised approach.

## Activity done in February, 2018

- Orientation Workshop for Faecal Sludge and Septage Management for all ULBs of Ajmer Division.

## Orientation Workshop for Faecal Sludge and Septage Management for all ULBs of Ajmer Division

**Date & Venue :** 9<sup>th</sup> February, 2018, Ajmer, Rajasthan.

**Number of Participants :** 46 participants from 25 ULBs.

**Nature of Participation :** Engineers / Commissioners / Executive Officers / Elected Representatives.

## Glimpses of the Workshop

## Summary :

The orientation workshop was conducted for all the ULBs of Ajmer Division to acquaint them towards faecal sludge and septage management and make them aware of feasibility and benefits of FSSM in small and medium towns. The workshop was focussed on overview of FSSM, planning and implementation. Technical experts in the sector working in the state of Rajasthan were invited to share their experiences and discuss viable options to implement FSSM in Rajasthan. Various treatment options for septage after its collection were discussed in the context of climatic conditions of the state. Market for reuse and financing options for planning and implementation of FSSM were also discussed.

The concluding session was presided over by Shri Kishor Kumar, DDR, Ajmer Division who appreciated the efforts undertaken by AIILSG and NIUA. He spoke about the importance of sanitation and need for behavioural change amongst the officials and the citizens for cleaner cities in Rajasthan. He insisted the participants to focus on achieving ODF+ status and further contemplate upon the applicability of FSSM in their respective ULBs.



# Award Ceremony for the Best Performing Women and Child Welfare Committees of Municipal Corporations / Councils of Maharashtra.

## Introduction

An award ceremony was organized for the Women and Child Welfare Committees of the Municipal Corporations and Municipal Councils of Maharashtra for their outstanding work during 2013-14, on 24<sup>th</sup> February, 2018 at Mayor's Hall, All India Institute of Local Self-Government (AIILSG), Andheri, Mumbai. The dignitaries who graced the inaugural ceremony were Mr. Sunil Prabhu, Chief Whip, (Shiv Sena), Maharashtra Legislative Assembly, Mrs. Vijaya Rahatkar, Chairman, Maharashtra Women Commission, Mr. Vishwanath Mahadeshwar, Mayor, Municipal Corporation of Greater Mumbai and President, Maharashtra Mayors Council, and Mr. Prem Basantani, President, Hinganghat Municipal Council and President Maharashtra Municipal Presidents' Association.



*Dignitaries on the dais during the Award Ceremony at AIILSG, Mumbai.*

The objective of this award ceremony was to encourage the Women and Child Welfare Committee to utilize the grants available for the committee by spending the same as per norms for the welfare of poor women and children in the areas of the respective corporation and council.

Mr. Rajiv Agarwal, IAS (Retd.), Director-General, AIILSG gave a detailed account of the activities of the Institute across India. Mr. Ranjit Chavan, President, AIILSG and Chairman, Maharashtra Mayors Council and Federation of Municipal Presidents spoke about the 73<sup>rd</sup> & 74<sup>th</sup> Constitutional Amendments that inter alia, provided for setting up of a separate committee of women and child welfare in the municipal corporations and municipal councils. The AIILSG anchors the Maharashtra Mayors Council and the Maharashtra Municipal Presidents' Association. The dignitaries expressed their views and appreciated the efforts of the Institute and of the two aforesaid associations in encouraging the good performance of the Women and Child Welfare Committee.

As stated in the introductory speech, after deducting the estimated expenditure on essential items, 5% of the budget of municipalities has been earmarked for the Woman and Child Welfare Committee. It was seen that in all the municipal corporations and councils, the grants earmarked for the committee were being utilized to a marginal extent (about 15%). Various measures were taken to improve the utilization of the grants which included issuance of Government Resolutions specifying the items on which the grants could be expended and other relevant information. The Institute organized a State-level conference on 14<sup>th</sup> February, 2006 and invited chairpersons of the Committee from all the municipal corporations and councils. The deliberations of the conference were advisory which resulted in improvement of the proportion of expenditure. For the use and guidance of the committee members, a guide publication (Saarathi) was brought out containing all the relevant information with procedures and drafts used in the procedure.

Subsequently, the Institute along with the Maharashtra Mayors Council and the Maharashtra Municipal Presidents' Association encouraged the Women and Child Welfare

committees which had performed well by awarding them based on their performance. A questionnaire to obtain relevant information for judging the performance was prepared and circulated. Based on the information received from the municipal corporations and municipal councils, a scrutiny committee was constituted to evaluate the performance on the basis of the performance indicators. The committee consisted of Mrs. Pooja Mahadik, Mrs. Bharti Deshmukh and Mrs. Netra Shirke, Sabhapatis of Greater Mumbai, Vasai-Virar and Navi Mumbai Municipal Corporations, respectively, and Mrs. Prabhat Patil, Municipal Corporator of Mira-Bhayandar Municipal Corporation. Mr. L. A. Latake, Hon. Director, AILSG acted as Coordinator of the Committee.

Accordingly, as per the selection made by the Committee, the Women and Child Welfare Committees of the following municipal corporations and councils were awarded for the year 2013-14 by the dignitaries at the ceremony. The award consisted of cash prize, memento and a certificate. The members of the award winning committees were also felicitated.

#### Award Winning Municipal Corporations :

- Vasai-Virar Municipal Corporation - 1<sup>st</sup> Prize.
- Municipal Corporation of Greater Mumbai - 2<sup>nd</sup> Prize.
- Navi Mumbai Municipal Corporation - 3<sup>rd</sup> Prize.

#### Award Winning Municipal Councils :

- Jalana Municipal Council (A-Class) - 1<sup>st</sup> Prize.
- Ratnagiri Municipal Council (B-Class) - 1<sup>st</sup> Prize.
- Rajapur Municipal Council (C-Class) - 1<sup>st</sup> Prize.
- Khopoli Municipal Council (B-Class) - 2<sup>nd</sup> Prize.
- Pen Municipal Council (C-Class) - 2<sup>nd</sup> Prize.
- Palghar Municipal Council (B-Class) - 3<sup>rd</sup> Prize.
- Uran Municipal Council (C-Class) - 3<sup>rd</sup> Prize.

Apart from these, Aurangabad and Mira-Bhayandar Municipal Corporations and Panvel (A-Class), Sangamner (B-Class), Jaisingpur (B-Class) and Trimbak (C-Class) Municipal Councils received Consolation Prizes.

This ceremony was attended by Dr. Jairaj Pathak, IAS (Retd.), Sr. Advisor, AILSG, Mr. Rajkishor Modi, Governing Council Member, AILSG, Mr. L.A. Latake, Hon. Director, AILSG and Mr. Dattatray Masurkar, Ex-President, Maharashtra Municipal Presidents' Association. The function was concluded by Mr. Latake with a vote of thanks.



*Delegates during the Award Ceremony at AILSG, Mumbai.*



## Testimonials



**Training Programme on 'Solid Waste Management with a focus on 100% Segregation of Solid Waste'**  
**7<sup>th</sup> & 8<sup>th</sup> February, 2018, Panaji, Goa.**

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**Mrs. Jayashree Mehta, Municipal Councillor, Anjar Municipality, Gujarat.**

*"The overall training programme was very effective, and the experts invited to guide us on solid waste management were very knowledgeable. The field visit arranged at Saligaon SWM Plant was a learning experience, about the material recovery centre, sorting, compressing etc."*

**Mr. Vikas Kannojiya, Jr. Engineer, Phalodi Municipal Council, Rajasthan.**

*"I appreciate the focus on showcasing new ideas and the importance of segregation process and further disposal of solid waste. I enjoyed the training, especially group work session which created very lively interactive discussions among the participants. All arrangements and facilities were perfect."*

**Training Programme on 'Solid Waste Management with a focus on 100% Segregation of Solid Waste'**  
**22<sup>nd</sup> & 23<sup>rd</sup> February, 2018, Guwahati, Assam.**

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**Ms. Nazreen Ahmed, ACS, Mission Director, SBM and Director, DMA, Assam.**

*"I am happy that, RCUES, Mumbai has taken a good initiative to conduct capacity building programme in the state of Assam. This programme would be beneficial to our municipal functionaries. I would look forward to RCUES, Mumbai for conducting more such capacity building programmes."*

**Mr. Ranjit Kalita, Nodal Officer, SBM, Urban, Assam.**

*"The workshop was very informative. The participants learned a lot from the sessions. ULB representatives from Gujarat, Maharashtra and Assam participated in the workshop which ensured great cross learning through interactive discussions."*

## Testimonials



**Training Programme on 'Solid Waste Management with a focus on 100% Segregation of Solid Waste'**  
**22<sup>nd</sup> & 23<sup>rd</sup> February, 2018, Rajkot, Gujarat.**

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**Mr. M. S. Gokhru, Municipal Councillor, Nimbahera Municipal Council, Rajasthan.**

*"Training Programme was excellent; especially technical session organized on segregation technologies gave me a better idea of how I can dispose, both wet and dry waste systematically."*

**Mr. Hasmukh Hirpara, Health Officer, Veraval Patan Municipality, Gujarat.**

*"It was a great training programme, I learned about the new rules regarding solid waste management and segregation technologies. Very interactive sessions and the speakers invited to guide us were very good in dealing with the subjects."*

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