

# SWACHH BHARAT

A Monthly Newsletter



## EDITORIAL

The “Swachh Bharat Mission-Urban” (SBM-U) is a major initiative of the Ministry of Urban Development (MoUD), Government of India. Launched on the birth Anniversary of Mahatma Gandhi on 2nd October 2014, the mission seeks to attain his vision of a ‘Clean India’ by his 150th birthday in 2019. Expected to cost over ₹62000 crore (USD 9.7 billion), it is a national campaign covering 4041 statutory towns.

The SBM-U is a bold and visionary response to one of India’s key urban challenges. The specific objectives of the Mission, describe a comprehensive set of actions that can deliver, at one end, the goals of social transformation, such as eliminating open defecation and manual scavenging, and, at the other, the goals of scientific solid waste management and sanitation, through the fundamental instruments of social change: change in behavior and attitudes, and greater awareness about the adverse health effects of poor sanitation and waste management.

While addressing the components of SBM-U, state governments and ULBs are expected to focus on a set of social priori-

ties and outcomes that define the scope and complexity of the Mission.

- Manual scavengers in urban areas need to be identified and adequately rehabilitated, which entails that the insanitary toilets linked to their employment are upgraded to sanitary toilets.
- Informal workers in waste management (e.g. rag pickers) are enumerated, their working conditions are upgraded, and they are integrated into the formal systems of SWM.
- Temporary accommodation for migrants and the homeless must have adequate provision for toilets either on the premises or linked to a public or community toilet.
- Construction labour have access to temporary toilets at all sites where construction or maintenance work is taking place or where construction labour is temporarily housed.
- Households with vulnerable sections such as pensioners, girl children, and pregnant and lactating mothers, must be accorded highest priority.

This monthly newsletter will disseminate news about the progress of the Mission, the success stories from different



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cities in India, the champions and ambassadors who bring about change, and the new solutions and progress that can help to achieve a transformation in our lifestyle and environment. ‘Swachh Bharat’ will inspire greater participation and will showcase our collective endeavour to achieve the Clean India of Gandhi’s dream. It will serve as a vehicle for promoting ground-level practices and knowledge to all those interested in making India clean and litter free. It will be available on the Mission website (<https://swachhbharaturban.gov.in/>) and can be downloaded for further dissemination. This inaugural issue of the newsletter is the outcome of collaborative efforts from the States and cities. We thank you and welcome you all for your contributions, suggestions for the forthcoming issues.

— Editorial Team, NIUA

### The objectives of the SBM-U, translated into a set of Mission components, include the following:

1. Household toilets, including conversion of insanitary latrines into pour-flush latrines
2. Community toilets
3. Public toilets
4. Solid waste management
5. IEC & public awareness
6. Capacity building and Administrative & Office Expenses (A&OE)



## PMC-SWaCH MODEL OF WASTE PICKER COOPERATIVE IN PUNE



Pune Municipal Corporation (PMC) has taken a proactive approach with waste pickers. The city endorsed identification cards for the workers, allowing them access to waste and raising their self esteem. The PMC and the waste picker trade union Kagad Kach Patra Kashtakari Panchayat (KKPKP) jointly promoted the creation of the SWaCH model in 2007. It is a public-private partnership that regularizes the role of informal workers in trash collection and provides the city with a more sustainable path for waste management. In 2008, the PMC signed a five year Memorandum of Understanding to decentralize door-to-door collection services

for households, shops, offices, and small commercial establishments and to allow SWaCH members to carry out this work. As part of its support, the Pune Municipal Corporation provides uniforms, aprons, raincoats and shoes for waste pickers involved in door-to-door waste collection as well as other equipment such as brooms and cycle rickshaws. It also finances SWaCH administrative staff, including the Chief Executive Officer, ward coordinators, supervisors, trainers and an accountant.

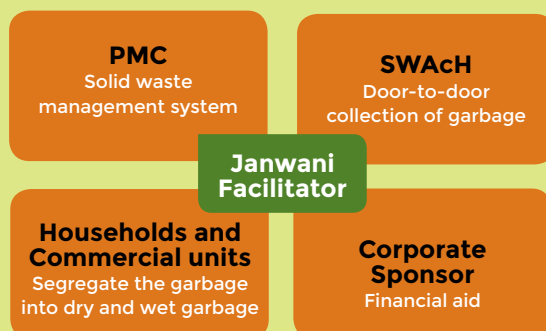
Presently, 2300 waste pickers collect garbage from 4,00,000 properties with an average of 174 properties per waste picker. The members of the cooperative collect user fees ranging between ₹10/- to Rs.30/- per household per month from the service users. Some waste pickers retain saleable dry waste materials to sell for additional earnings. They also provide composting services and biogas maintenance to citizens for additional fees. The advantages of the SWaCH model are that it helps PMC collect waste from the door step, is cost effective, leads to high-resource recovery, is labour-friendly by using existing workers and is a sustainable enterprise.

## REPLICATION OF THE ZERO GARBAGE MODEL



Another initiative of PMC is the Zero Garbage city. A pilot solid waste management project at Katraj ward No.141 was undertaken in association with the NGO, Janwani. The Zero Garbage Ward model at Katraj has resulted in cleaner streets, segregation at the primary collection center and increased the coverage of door-to-door waste collection. PMC collaborates with Janwani, the waste picker

cooperative SWaCH, Cummins India and others to develop and implement the model. Cummins India was the financial backbone of the project. PMC continues to perform its duties, including street sweeping and industrial waste collection. The Corporation banned open dumping in June 2010 and all disposals are done using scientific processing only. There are five decentralized waste processing plants across the city. PMC has activated a new mobile SMS alert system for timely and effective complaint redressal regarding garbage containers. The achievements of this project are (i) 100 percent households covered under door-to-door waste collection system; and (ii) 100 percent segregation of wet and dry waste at source. The sustainability of this system relied on household and commercial properties for the segregation of waste. The Zero



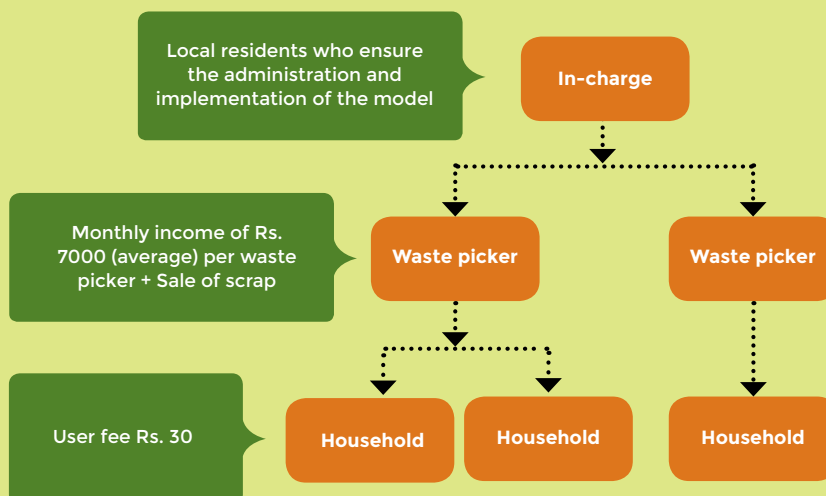
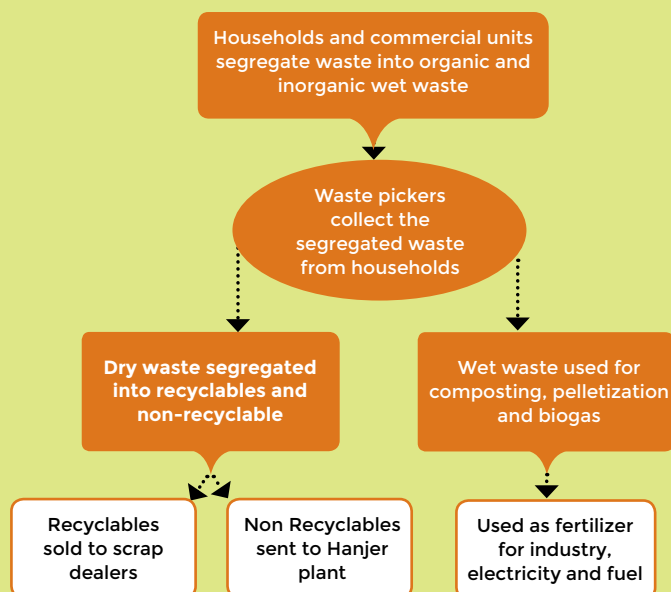
Garbage Ward Model project is the first waste management system in India that received ISO-certification for solid waste collection and transportation.

After the successful implementation of the Zero Garbage Model at Katraj ward, PMC has decided to replicate this model in 20 selected prabhags (electoral ward) in a phased manner. Janwani in association with PMC will act as a facilitator and work with various stakeholders involved in the SWM system and has proposed to include 10 more prabhags in 2015. Work on the implementation of the first phase has already begun. A major factor in both the sustainability and replicability of the new model is its reliance on the waste picker. Instead of turning its back on the informal sector, the Zero Garbage model incorporates it. The model enhances the quality of work of the waste picker, while also meeting demands for neighbourhood cleanliness and limiting garbage sent to landfills.

**Details of Transportation of Solid Waste**

Sr. No.	Vehicle Name	Nos.
1	Ghanta Truck	158
2	Compactor	12
3	Hotel Truck	20
4	Tractor	5
5	Dumper Placer	89
6	Bulk Refuse Carrier	65
7	Garden Waste	6

### How segregation helps create wealth out of waste



### PMC's Best practices to generate Wealth Out of Waste

- Integrating Informal Sector in Municipal Solid Waste Management.
- Pune's Trash Solution: A Zero Garbage City
- Biomethanation cum power generation plants
- Waste to Energy - Plasma gasification
- Sonia Gram Udyog Prakalp for plastic recycling
- Shredding and composting of garden waste
- Mandatory onsite disposal in post 2000 residential and commercial schemes
- Loknete Yashwantrao Chavan Pune City Cleanliness Drive and other cleanliness drives.
- Data collection for MIS using Mobile SMS
- ALERT G-Complaint Redressal through citizens participation
- Celebration of Ganesh utsav in Eco friendly manner

### Pune city generates about 1500 to 1600 MTD of waste. Processing of this waste is done in the following ways:

Composting	Disha Waste Management and Ajinkya Biofert located at Hadapsar Industrial estate having capacity of 100 TPD capacities each, Vermicomposting plants are working with their full capacity. Two OWCs of 2 TPD each are operational at Aundh and 5 tons per day capacity at Ramtakadi
Decentralized biogas plants	Total 90 to 110 MT. of organic waste is treated in 21 Biogas plants of 5 Tonnes capacity each & 15 more biogas plants are under construction phase and will be commissioned soon.
Rochem Separation System	The plant having capacity of 700 TPD is presently processing 300- 350 TPD
Scientific Closure of MSW Dump Site	Scientific closure and beautification of 30 hectares of dumping site at Uruli Devachi has been initiated in the year 2011 and is nearing completion





## Air-Conditioned Sulabh Toilet Complexes in Lucknow

Sulabh International has constructed Air-Conditioned eleven seat Sulabh Toilet complexes in 2008 on B.O.T. system at the important locations in Lucknow. Apart from installing two air-conditioners, these complexes have enough space for a lobby, a locker room, a special toilet for differently abled persons, with all required facilities such as 3 WCs for men, 3 WCs for Women, 2 WCs + bath for men, 2 WCs +bath for women, 3 wash basins for men (with mirror, soap and towel). 2 wash basins for women (with mirror, soap and towel), and a separate urinal block of 5 water-less urinals with wash basin. In addition, drinking water, ramp and dustbin have been provided for the users. The Uttar Pradesh State Road Transport Corporation (UPSRTC) allowed the organization to charge a fee of ₹5/- for use of WC., ₹10/- for use of bath and ₹2/- for use of urinal. On the same pattern, the Sulabh Toilet complex was constructed at Daya Nidhan Park, Lalbagh in 2010. The Nagar Nigam Lucknow provided land for this purpose. Local authorities are planning to construct more of such air-conditioned toilet complexes and the selection process for finding suitable sites is underway.

## Tiruchirappalli Community toilets

Tiruchirappalli has demonstrated success in Operation and Maintenance (O&M) of community managed toilets by involving Self Help Groups (SHGs). Originally mooted by Gramaalaya, a local Non-Governmental Organization (NGO), the idea revolves around including SHGs in maintenance and involving the local community through effective door-to-door awareness campaigns. As the awareness campaigns gathered momentum, a number of SHGs showed willingness to operate and maintain community toilets as pay-and-use toilets. While Tiruchirappalli Municipal Corporation (TMC) provided land for construction, Gramaalaya with the help of WaterAid (an international non-profit organization) undertook construction of toilets in 8 slum areas including a toilet in Karuvapettai exclusively for children. When this initial project was successful, TMC decided to undertake a phased transfer of O&M of TMC's toilets to the SHGs. Gramaalaya, SEVAI and SCOPE were the first group of NGOs that assisted SHGs in undertaking the activity. The SHG members in a community jointly formed a Sanitation and Hygiene Education Team (SHE Team). The toilets were managed by the SHE teams on a rotational basis. SHG members also provide soap, shampoo sachets, oil etc., in the sanitary complexes, thus creating awareness among users regarding health and personal hygiene. The SHE team fixed the user charges on per-use basis and monthly card basis. Each SHE team opened a bank account for depositing funds collected from the community toilets. The monthly cash collection was deposited in a common bank account.



## Construction of Public Toilets- Case Study of cities of Tamil Nadu

The Directorate of Municipal Administration (DMA) of Tamil Nadu has designed the Namma Toilet (Our Toilet) to address the most basic needs of ventilation, natural light, safety and privacy. The Namma toilets are user friendly, durable and vandal resistant. The design of such toilets has taken into consideration the feedback received from households and experts through discussions. Based on this, standardized terms and conditions of the tender were prepared and sent to all ULBs in the state. Since the DMA did not receive response from sufficient number of the bidders, ULBs were advised to move ahead with the conventional method of construction through Engineering Procurement Contract (EPC).

The estimated cost of the toilet is ₹15 lakh per unit with 8 seats. Presented below is the progress:

- Total No. of sanctioned Namma Toilets till date: 531
- Completed toilets and put into use till date: 98
- Toilets in progress: 122
- Number of tenders cancelled and new tender called under conventional method: 330

The Namma toilets are being constructed through EPC. About 50 percent of the toilets are operated and maintained by the contractors and remaining 50 percent are being operated and maintained by the ULBs. The O&M cost of the toilets are borne by the respective ULBs. There is no user fee.



## Success stories in Solid Waste Management

In the year 2014-15, 100 percent door to door waste collection and transportation of waste was achieved in 329 cities of Delhi, Goa, Gujarat, Karnataka, Madhya Pradesh, Mizoram, Nagaland, Odisha, Sikkim, Tamil Nadu and Telangana. In Goa, the self help groups are involved in the door to door waste collection in the entire Margoa Municipal Council. It is proposed to implement 100 percent door to door waste collection and transportation of waste in 1000 cities and 100 percent waste processing in 100 cities for the financial year 2015-16.



### Waste to Energy plant at Ghazipur, New Delhi

East Delhi Municipal Corporation (EDMC) in association with IL&FS Environment is setting up a Waste to Energy (WtE) plant on Public Private Partnership (PPP) framework. The plant will initially process 1300 TPD of MSW and generate 12 MW of Green Power. It has a built in capability to process 2000 TPD and an elaborate pre-processing facility which will prepare the waste to ensure a high calorific value (3000 kcal/Kg) for the Refuse Derived Fuel (RDF) produced. This will feed into the State of the Art boiler to ensure proper combustion. Continuous Emission Monitoring Systems (CEMS) along with Visitor's Gallery to enable online viewing of key emission parameters is also being installed. This will be India's first WtE plant compliant with stringent Euro norms for emissions. The plant will also help in saving scarce land resources in addition to numerous environmental and health benefits to the society. The plant will mitigate 8.2 million tons of Greenhouse Gases (GHG) over the life of the project, thus combating global warming. This is equivalent to removing all the cars from the roads of Delhi for 100 days in terms of reduced GHG emissions. The facility uses recycled sewage water in its operations – thus fully complying with the 4R (*Reduce, Reuse, Recover, Recycle*) principle of waste management. The RDF section of the plant is already commissioned and is receiving waste.

## Individual Household Toilets in Jabalpur

The Jabalpur Municipal Corporation (JMC) has taken several initiatives under the Swachh Bharat Mission for the construction of individual toilets. In this context, the Corporation has made a comprehensive work plan to make Jabalpur an Open Defecation Free city. The objective of this plan is not only to construct the toilets but also eliminate the open defecation practice. With this background, an Information, Education and Communication (IEC) exercise is being done through participatory approach to increase awareness among the urban poor. About 8000 household toilets units have been constructed in slum areas where even 100 percent open defecation was prevalent among slum dwellers.

The JMC has constructed the household toilets under SBM in four slums of Jabalpur, namely Shanti Nagar, Tedineem, Gaji Nagar and Badhai Mohalla near Madan Mahal Railway Station and has thus promoted them to the status of Open Defecation Free Slums in the city.



### Individual Household Toilets in other cities of India

Under the Swachh Bharat Mission, a target of 5.08 lakh seats has been set for construction of community/public toilets by 2019. During 2014-15, 1222 seats of community/public toilets were made functional in the states of Andhra Pradesh, Delhi, Gujarat, Karnataka, Madhya Pradesh, Nagaland, Odisha and Puducherry. In the financial year 2015-16, a total of 1 lakh community/public toilet seats are to be constructed.



## Door to Door Waste Collection in Surat

Surat has initiated a door to door waste collection system by a private operator in 2004 that has exhibited success. The following write-up walks us through the basics facets of this success story.

### Collection and Transportation of Municipal Solid Waste (MSW)

There are six transfer stations in Surat from where the private operator collects municipal solid waste and ensures its safe transportation and disposal into a final disposal site at the outskirts of the city in a place called Khajod. This has been done through a PPP model with 10 years concession period. Seven agencies have been engaged in seven zones of the city to collect waste twice daily - between 7 a.m. to 2 p.m. and from 5 p.m. to 10 p.m. About 60 percent of total municipal solid waste is being collected and transported by the private operator by using 310 vehicles in the respective zones. The operator uses closed body vehicles equipped with vehicle tracking system. Payment to the operator is made on per MT base of waste brought to transfer station with provision of 5 percent escalation on base unit price every year. The tenure of the private operator is usually seven years. Every vehicle is operated with time place movement (TPM) chart wherein time and route is clearly mentioned.

### MSW Processing

Surat has opted for multiple waste processing technologies for treatment of MSW. The incoming heterogeneous waste is first segregated and further converted into compost and RDF pellets. The waste-to-energy plant gives an output of 13 MW. It is a completely sealed storage unit with no smell and no oxidation/burning of waste.

The Surat Municipal Corporation has entered into an agreement with a private agency to treat 1400 TPD of MSW to produce RDF, compost and power purely on PPP basis. The Corporation has provided land on token rent and all other investment is made by the agency. Presently, the area of final disposal site is about 200 hectare at village Khajod and authorization has been obtained from Gujarat Pollution Control Board (GPCB). A private agency has been awarded a contract for leveling of disposed MSW. There are two sanitary landfill sites with the capacities of 1.25



Rahul Bhadane

### Modernization of Refuse Transfer Stations

Number of transfer station	All six transfer stations are operational
Facility at transfer station	Collected waste is transported to transfer stations through private vehicles and finally sent to the disposal site for the waste disposal.
Concept of modern transfer station	<p>Primary collecting vehicles sent to the Elevated Platform through Ramp.</p> <p>Ramp facility is provided to facilitate uploading of vehicles. and the dumper places containers directly into a large container at the transfer station.</p> <p>Chutes are provided at elevated platform to receive the MSW from where it is unloaded by the primary collection vehicles;</p> <p>MSW unloaded from primary collection vehicles is transferred into the closed container provided with compactor system;</p> <p>The chute portion of transfer station is covered on the top with FRP sheet and whole structure is kept closed with concrete louvered blocks;</p> <p>Containers are fully closed with leak proof door opening system.</p>
Results Achieved	<p>MSW is received through closed vehicles and is dropped into closed containers without secondary handling;</p> <p>Covered leak proof containers prevents spillage of waste on the road;</p> <p>No permanent or temporary storage at transfer stations, thus averting the nuisance of flies and animals at transfer stations;</p> <p>Separate leachate collecting system is provided.</p>

lac tons and 6.25 lac tons respectively. These landfill sites are designed as per the CPHEEO standards and CPCB guidelines. An Environment Monitoring System has been set up at the final disposal site.

Following is a snapshot of the forthcoming MSW Projects in Surat

- Work is in Progress for a 1000 TPD MSW Power Plant
- Tendering for 500 TPD MSW-to-Power Plant is on going

- Work has been awarded for a Plastic waste collection, transportation and treatment unit
- An E-waste management facility project is under approval
- Tendering for an organic waste and textile waste collection and treatment facility is on going
- Tendering for the construction and demolition of a waste management facility is on going

## Composting Plants in Karnataka

### 1. Bruhat Bengaluru Mahanagara Palike (BBMP):

The Karnataka Compost Development Corporation Limited (KCDC) (a Govt. of Karnataka organisation) established a composting plant at Bangalore city in 1975. The KCDC plant receives 200 TPD of MSW everyday and produces around 30 TPD (15% yield) of compost by following windrow composting and vermi-composting. The company is selling the mechanical compost at the rate of ₹3.80/Kg and vermi-compost at ₹4.05/Kg. The KCDC has a contract with Department of Agriculture (through tender) for selling of city compost.

**2. Mysore City Corporation:** Mysore City Corporation has entrusted IL&FS with the O&M of composting facilities in 2008 on land lease & royalty basis. The plant receives 150 TPD of waste and produces 18 TPD (12-13 percent of yield) of compost by following windrow composting method. The company has tie-ups with Coromandel, Zuari, SPIC, KRIBCO etc for selling of city compost at a price of Rs. 2500 – 3000 per ton of compost.

**3. Mangalore City Corporation:** Mangalore City Corporation has entrusted M/s Unique Waste Management Pvt. Ltd with the O&M of composting facilities in 2013 on tipping fee basis. The plant receives 290 TPD of waste and produces 30 TPD (10-12% of yield) of compost through windrow composting and vermi composting methods. The company supplies compost to IL&FS, Kozhikode, Kerala on bulk basis and sells the compost at a price of Rs. 4.25/ Kg of compost (bagged) and Rs. 3.0/Kg for un-bagged compost on bulk basis.

**4. Belagavi City Corporation:** The Belagavi City Municipal Corporation entered into an agreement with M/s Ramky Enviro Engineers Ltd., Hyderabad in 2007, for establishment of scientific processing & disposal facilities on BOT basis. At present, the plant receives an average of 150 TPD of Municipal Solid Waste. The MSW is composted by windrow aerobic method of composting.

As per the agreement the compost is sold to local farmers and industries at the rate of ₹3.50 and approximately 450 tons per month (15 TPD) of Compost is generated.

The company has entered into an



agreement with Godavary Gold Fertilizers, Krishak Barati Cooperative (KRIBCO) Ltd, Balaji Agro Agencies, Coromandel International Ltd, Vardhaman Agro agencies and Local dealers for selling its compost.

**5. Shimoga City Corporation:** Shimoga City Municipal Corporation entered into a

contract with M/s Ramky Enviro Engineers Ltd., Hyderabad in 2008, for the establishment of scientific processing and disposal facilities on BOT basis. At present, the plant receives on an average, 90 - 100 TPD of Municipal Solid Waste. The MSW is composted by windrow aerobic method. The compost generated is only 10% to 12% on MSW Receipts (9-10 TPD). M/s. Ramky Enviro Engineers Ltd. sells the city compost to the farmers in their own brand namely, Ramky Shakthi and also are selling the organic manure to some agro and fertilizer agencies like., Kribhco Pvt Ltd., Coromandel International Limited, and Balaji Agro Agencies. The price of compost is ₹3.00 to ₹4.00 per kg and it may vary depending on the placement of order.

Overall, from the five major plants mentioned above, around 103 tons of compost (103 x 250 days = 25,750 tons / annum) is being produced every day. In the rest of the cities, considering the yield of 10%, the compost produced is around 70 \* tons per day (70 x 200 days = 14,000 tons / annum). Thus the total compost produced / annum is 39,750 tons /annum (i.e. 25,750 + 14,000).

**One bold idea. One bold step. That's all it takes.**



Unorthodox thinking and commitment to the cause is essential to overcome open defecation and ensure safe sanitation in our country.

Through this newsletter, we encourage you to tell us your story about how you contributed to this cause. It could be your jingles about using latrines and washing hands that positively influenced the hygiene practices of communities, or how you rose through adversities to lead a campaign against open defecation in your neighborhood, or a toilet enterprise with innovative partnerships.

We wish to dedicate this section of this newsletter to our "Sanitation Ambassadors" or "Swachhta Doots" for their inspirational work and to recognize your outstanding efforts and achievements in sanitation in India.

Please send your success stories, anecdotes and pictures (high resolution) to: [pdey@niua.org](mailto:pdey@niua.org) and [ssingh@niua.org](mailto:ssingh@niua.org)



## STATUS OF SWACHH BHARAT MISSION (URBAN)

AS ON 21.05.2015



S. No.	State	HOUSEHOLD TOILETS		COMMUNITY TOILETS (NO. OF SEATS)		PUBLIC TOILETS (NO. OF SEATS)	
		Applications received	Sanctioned	Identified/ Sanctioned	Completed	Identified/ Sanctioned	Completed
1	Gujarat	356497	324497	1175	0	3000	0
2	Madhya Pradesh	393930	279944	650	400	330	100
3	Uttar Pradesh	82164	16908	400	0	0	0
4	Haryana	46137	0	0	0	0	0
5	Meghalaya	800	0	0	0	0	0
6	Nagaland	9330	0	235	0	0	0
7	Kerala	0	0	0	0	0	0
8	Uttarakhand	22410	18010	102	0	0	0
9	Punjab	5186	0	0	0	0	0
10	Puducherry	6590	6590	20	3	20	0
11	Tamil Nadu	0	0	0	0	0	0
12	Delhi	1117	0	4585	3984	1145	1120
13	Arunachal Pradesh	0	0	0	0	0	0
14	Andhra Pradesh	258000	46	461	0	0	0
15	Chhattisgarh	241548	153092	8870	1750	0	0
16	Sikkim	1050	40	0	0	0	0
17	Bihar	80000	80000	30	0	32	0
18	Telangana	112000	30411	110	0	434	73
19	Manipur	7105	196	0	0	0	0
20	Goa	980	270	7	0	0	0
21	Rajasthan	40000	5000	1100	0	0	0
22	Karnataka	250000	65000	246	0	0	0
23	Mizoram	96	96	4	0	5	0
24	Chandigarh	0	0	0	0	0	0
25	Andaman & Nicobar Islands	0	0	0	0	0	0
26	Maharashtra	0	0	0	0	0	0
27	Odisha	621250	0	420	0	1810	510
28	West Bengal	12200	12200	0	0	0	0
29	Jharkhand	30555	30555	415	0	375	0
30	Assam	97331	0	0	0	95	0
31	Tripura	0	0	0	0	0	0
32	Daman & Diu	0	0	0	0	0	0
Total		2676276	1022855	18830	6137	7246	1803

