

Compilation of Practices – Urban Services & Reforms in Indian Cities



Executive Summaries

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OUTLINE

The executive summaries of the Good Practices are organized as per the thrust areas and components of AMRUT as shown below:

1. Water Supply (6)
2. Sewerage (2)
3. Urban Transport (13)
4. Reforms (21)
 - i. E-Governance (2)
 - ii. Accounting Reforms (2)
 - iii. Municipal Tax and User Charges (4)
 - iv. Swachh Bharat Mission (13)

1. URBAN WATER SUPPLY

1.1 Governance and Institutional Strengthening

1.1.1 Nagpur - City-wide Public- Private Partnership for water supply

This case profiles the initiative of Nagpur Municipal Corporation (NMC) to implement a 25-year Public-Private Partnership (PPP) project for provision of continuous water supply on a city-wide scale. It offers vital lessons and insights for other cities seeking ways to transform their water supply service delivery by emphasizing the need for holistic planning and an integrated set of actions for implementing city-scale PPPs and highlights the need for institutional clarity, balanced contractual arrangements, political/administrative commitment, rigorous stakeholder engagement and consumer communication processes, and provides some insights for sequencing of tariff reform.

1.1.2 Surat - Formation of a Non-Revenue Water (NRW) cell

One of the pioneering initiatives of the Surat Municipal Corporation (SMC) was the setting up of an NRW cell as an institutional response for tackling non-revenue water. This case elaborates the activities and positive outcomes for creating accountability and early enthusiasm leading to the tangible results of leakage mapping exercise carried out by NRW cell of SMC. Following the initial leakage mapping exercise, the number of leakages was reduced by 30% annually in all zones.

1.2 Information and Efficiency Improvement

1.2.1 Pimpri - Chinchwad - SLB connect pilot

The case traces the implementation of a pilot project under the SLB Connect program in Pimpri-Chinchwad Municipal Corporation (PCMC) in collaboration with Water Sanitation Program (WSP), World Bank. The SLB connect pilot at PCMC provides a window into the possibilities of addressing the challenge of citizen engagement through use of ICT tools, provides a very replicable approach to effective citizen engagement and demonstrates that effective engagement can be achieved by leveraging the relatively high mobile tele-densities in Indian cities and use of the same to support both data collection and information dissemination.

1.2.2 Bangalore - Bulk metering with intelligent operating system

While some of the Indian water utilities have implemented stand-alone monitoring of

systems through facility level SCADA systems, initiatives to implement mechanisms for system wide control, analysis and monitoring have been limited. The case discusses the initiative of the Bangalore Water Supply and Sewerage Board (BWSSB) for implementing two related initiatives namely installation of bulk meters and development of a software application to capture and track information from these bulk meters for monitoring and regulating the water supply system.

1.3 Environment Sustainability and Technology Use

1.3.1 Pimpri-Chinchwad - Helium-base Leak detection pilot

For the Pimpri Chinchwad Municipal Corporation (PCMC), leakages and technical losses in its distribution system were a major constraint in shifting to continuous supply. With technical support from Suez Environment India Limited, PCMC initiated a pilot project in 2012 for a helium gas based leak detection program which identified 132 leaks in the 20 km pilot study. The leak detection program enabled PCMC to take a structured approach to address service delivery improvements in the pilot zone and demonstrate the potential for positive impacts when technology and use of external expertise are combined with a systematic and structured plan with clear objectives.

1.4 Financial Sustainability

1.4.1 Nagpur - Energy Audit Project for Water Supply

Energy cost for 2004-05 accounted for nearly 50% of Nagpur Municipal Corporation's (NMC) O&M cost of water supply and provided the trigger for NMC to initiate a study on potential for energy savings. Post the audit, actions undertaken and implemented led to considerable energy cost savings, estimated at Rs.2.8 lakh per day (at 2010 prices). NMC's experience shows that with a structured approach, specific investment funding and implementation of improvement actions in a time-bound manner helps achieve tangible savings.

2. SWERAGE

2.1 Sustainability and Technology Use

2.1.1 Jalandhar - Sewerage project

The Municipal Corporation of Jalandhar (MCJ) and Punjab Water Supply and Sewerage Board (PWSSB) implemented a sewerage project with funding under the Urban Infrastructure Development Scheme for Small and Medium Towns (UIDSSMT). This case profiled the first phase of Jalandhar's sewerage system implemented under UIDSSMT which resulted in the provision of 13,000 sewerage connections covering a population of 100,000 with safe sanitation and sewerage coverage and resultant implications of reduction in pollution load.

2.2 Financial Sustainability

2.2.1 Pallavaram - Sewerage project with user financing

Despite being a rapidly growing town, Pallavaram did not have a sewerage system and depended on 25,000 septic tanks. 7% of households were resorting to open defecation. Lack of a proper sewerage network, resulted in discharge of sewerage into open drains, unhygienic environmental conditions and breeding of mosquitoes. Pallavaram municipality implemented sewerage system with connection deposits from users (upto 30% of the projects costs) as part of the project's financing mix and fixation of user charges to meet 100% O&M cost recovery. The experience at Pallavaram in Tamil Nadu suggests that user financing is indeed a replicable idea for expanding waste-water treatment.

3. URBAN TRANSPORT

3.1 Urban Transport Management

3.1.1 Urban Transport Services for Medium and Small Size Cities, Karnataka

One of the primary intentions of forming an independent corporation was to cater to the demands of the local area under its jurisdiction. Along with inter-city operations, local city transport needs are also addressed by the corporation. The overcrowded autos and IPTs running on sharing basis, along with unstructured and high fare system were not able to cater to the transport needs of the cities. Hence, North Eastern Karnataka Road Transport Corporation (NEKRTC) was formed in the year 2000 after bifurcating from the Karnataka State Road Transport Corporation (KSRTC) with the objectives of popularizing the use of public transport as the preferred mode of transport against the personalized and other IPT modes at an affordable fare structure.

3.1.2 Any Time Rickshaw Service: G Auto

Name: G-Auto

City: Delhi, Ahmedabad, Gandhinagar, Baroda, Surat and Rajkot

Duration: The project was started in February 2009 in Ahmedabad, August 2011 in Baroda, July 2012 in Rajkot, June 2013 in Surat and February 2014 in Delhi.

Current Status: The project has been executed in Delhi, Ahmedabad, Gandhinagar, Baroda, Rajkot and Surat.

Brief Description: G-Auto is the first project in India to provide an innovative solution to organising the auto rickshaw drivers under one common umbrella brand to offer safer and reliable services to customer and to improve the lifestyle of auto rickshaw drivers. It has been using mobile technology to offer 'call an auto service' at passengers' doorsteps at a Government approved meter rate.

3.2 Technology in Transport

3.2.1 Mumbai Area Traffic Control System

In 2002, the Mumbai Metropolitan Regional Development Authority planned to introduce a centralised ATC system in Mumbai. The World Bank funded project involved complete installation of Fully Adaptive Traffic Control (FATC) System comprising 253 signal junctions; a leased fibre optic transmission network; Traffic Signal Control Equipment and Adaptive Traffic Control System. The FATC System and Data Transmission Network

Systems are to be fully integrated and centralized within the Traffic Police Headquarters Control Centre and in the Satellite Information Centre Room at the Mumbai Municipal Corporation Office.

3.2.2 Bangalore Traffic Improvement Project

Name: Bangalore Traffic Improvement Project

City: Bangalore, Karnataka

Duration: 2006 – 07

Current Status: Ongoing

Brief Description: B-TRAC is a “first of its kind” project in the country to address the issues of traffic congestion, safety etc. by utilising the latest traffic management technologies and techniques. This will give the much-needed scope for large infrastructure projects to be planned and implemented for improving the transportation system in Bangalore city.

3.3 Inclusive Transport

3.3.1 Alwar Vahini

Like many of the small and medium size cities, Alwar also had an informal public transport system operational through the means of shared auto-rickshaws, vikrams, tempos etc. which are highly polluting, totally unorganized, unsafe and passenger unfriendly. In order to tackle these problems, initiatives undertaken by the administration of Alwar city should be give due cognizance. The city authorities have shown the way forward by launching a project called “The Alwar Vahini” on 3rd December, 2011. Alwar Vahini is a passenger service (Euro IV complaint vehicles for about six to seven passengers) which has replaced the old polluting autos, tempos and vikrams with the joint efforts of various organizations such as Regional Transport Office, lead Bank (Punjab National Bank), Urban Improvement Trust-Alwar, Urban Improvement Trust-Bhiwadi and Deputy Registrar Co-operative with the District Administration playing the coordinating role.

3.3.2 Access Audits of Delhi Metro Infrastructure as a part of Promotion of user-friendly PT Systems in Delhi -Implementation strategies

Name: Access Audits of Delhi Metro Infrastructure as a part of Promotion of user-friendly PT Systems in Delhi

City: New Delhi

Duration: Access Audits of the Delhi Metro stations started from inception of the first station - Welcome Station in 2002 and is still ongoing with each new corridor/stations that are

coming up

Current Status: Delhi Metro has started including the recommendations of the audits in all upcoming stations. Retrofitting is also undertaken in an existing station.

Brief Description: The initiatives by Samarthyam involve evaluation, development and promotion of universal accessibility in built and outdoor environments, transportation systems etc. The foundation has undertaken rigorous accessibility audits of the Delhi Metro infrastructure and provided suggestions to improve accessibility for all.

3.3.3 Access Audits of Bus and Bus Shelter as a part of Promotion of user-friendly PT Systems in Delhi -Implementation Strategies

Name: Accessibility of Buses and Bus Shelter - “Research Study on Promotion of user-friendly Public Transport Systems”

City: Delhi

Duration: 2006

Current Status: Operational

Brief Description: Samarthyam with a mission to promote ‘Mobility for All’ (including persons with disabilities) conducted a research study on “Promotion of user-friendly Public Transport Systems - Buses & Bus Shelters” in India to provide user groups’ perspective on existing bus shelters & Low Floor Buses (LFB) and upcoming BRTS introduced by the Delhi Government. During the course of the research study on accessibility of buses and Bus Q Shelters (BQS) conducted in 2005, Samarthyam had suggested to various concerned departments to make the bus shelters universally accessible. In 2006, the entire route of 620 buses (on which the Low Floor Buses are plying) i.e. from Hauz Khas terminus to Shivaji Stadium terminus has been selected for the same. Drawings and sketches with universal designs of BQS are being implemented by both DTC (225 BQS) and NDMC (197 BQS). Samarthyam is monitoring the construction process and Delhi NCR and other adjoining cities have similar designs of accessible bus shelters.

3.4 Green Low Carbon Transport

3.4.1 Fazilka Ecocab (Punjab)

Ecocabs were conceptualised and introduced so as to strengthen the existing unorganised network of cycle rickshaws and to promote it as an affordable means of sustainable urban transport especially for shorter distances. An attempt has been made to improvise the various aspects of the cycle rickshaw industry including accessibility issues, quality of service, welfare of associated traction men, rickshaw itself and the society at large.

3.4.2 Inclusion of NMT related Infrastructure by redevelopment of major roads in Nanded

Name: Inclusion of NMT related Infrastructure by redevelopment of major roads in Nanded

City: Nanded, Maharashtra

Duration: DPR approved 25/10/06; most works completed by Sept 2008

Current Status: Under Operation

Brief Description: Under JnNURM, Nanded Waghala City Municipal Corporation (NWCMC), has developed 28 km of cycle tracks and achieved the aim of segregation of slow and fast moving traffic. Construction has been completed and 95% of the work has been completed and commissioned.

3.5 Community Engagement

3.5.1 Alternative Mobility Solutions and Pedestrianisation of Existing Neighborhoods: 'AAPKI SA DAK'

Aapki Sadak is an urban design project that addresses alternative mobility solutions and pedestrianization of existing urban neighborhoods in Delhi. Using art as a medium for communication and exchange, Aapki Sadak facilitated several community based initiatives that address local children as well as the older residents. Street art/stenciling, dance/theater and social networking sites such as word press and Facebook, are the key media being used to engage the community and raise awareness about mobility in the neighborhood. The project looked towards the improvement of neighborhood level mobility and accessibility within a typical urban precinct of South Delhi. It is a community engagement led process with detailed surveys and technical design support to arrive at practical solutions.

3.5.2 Raahgiri Day: Our Streets - Our Freedom

Name: Raahgiri Day

City: Gurgaon, Haryana

Duration: Every Sunday starting from 17th November, 2013

Current Status: Being implemented on every Sunday. This initiative is now operational in other Indian cities as well (Delhi, Ludhiana and Navi Mumbai)

Brief Description: Temporary closure of a network of streets to cars so that they become “open” to people, Raahgiri Day is a weekly road event which started from 17th November 2013 and takes place thereafter on every Sunday

3.6 Land-use & Transport Integration

3.6.1 Prahladnagar Town Planning Scheme (Ahmedabad)

The Town Planning Scheme Mechanism in Ahmedabad is seen as a participatory and equitable means of acquiring land owners on the urban fringe. A form of land readjustment, it allows local authorities to acquire a proportion of all the land parcels in a defined area on which to build public roads, parks, and other amenities. The authorities return remaining land to the original land owners in the form of reconstituted parcels which have increased value due to the improvements. The landowner pays half of this increase in land value to the Government as a betterment charge, which helps the government while also expanding urban infrastructure. Proponents often claim that the TP Scheme mechanism is a ‘win-win’ proposition.

3.6.2 Pimpri Chinchwad Municipal Corporation Transit Oriented Development Initiative

Name: TOD around BRTS corridors in Pimpri Chinchwad

City: Pimpri Chinchwad Municipal Corporation

Duration: Three Phase Project: 1) 2010-2014, 2) 2015-2019 and 3) 2020- 2024

Current Status: PCMC has constructed BRTS infrastructure along 1 corridor and construction on other 3 is in progress.

Brief Description: In this TOD, PCMC is promoting high-density development next to high capacity transportation system. PCMC has identified 100 m on either side of the BRT corridors as the BRT influence zone. PCMC provides 80% higher FSI of 1.80 in the BRT influence zone. PCMC’s model allows loading of TDR into the BRT influence zone.

4. REFORMS

4.1 e-Governance

4.1.1 e-Governance Reform in Nashik Municipal Corporation (NMC), Maharashtra

The state of Maharashtra played an important role in motivating the ULBs in progressing towards achievement of e-Governance vision of ‘transforming governance and enriching lives through the power of ICT’. Module-wise initiatives of Nashik Municipal Corporation (NMC) consists of 1) Property Tax Module; 2) Accounting Module; 3) Water Tax Module; 4) Birth and Death registration; 5) Online Citizen Grievance and Redressal System; 6) Tracking of Waste Collection Vehicles (through GPS); 7) Digitization of Records; 8) Personnel Management System and 9) Computerization and Enterprise Resource Planning (ERP). The direct impacts of e-Governance reform in NMC are as follows:

- The overall ease in day-to-day functions
- Centralization of database
- Reduction of load on each staff (property tax and water tax are now merged, the same person delivers bills and is in-charge of collecting both water and property tax)
- Better monitoring resulted in increase in demand (tax) and collection (tax)

4.1.2 e-Governance Reform in Rajkot Municipal Corporation, Gujarat

Rajkot Municipal Corporation (RMC) Municipal e-Governance Design Document (MeDD) was prepared based on the National Design Document and as per the guidelines of the NMMP on e-Governance. RMC administrative reforms include computerization of municipal work. Reform in citizen interface consists of a) Mechanisms People’s Participation; b) City Civic Centers; c) m- Governance and d) Citizen’s Grievance Monitoring. Under the NMMP on e-Governance, 12 modules were being implemented in RMC. Important achievements of e-governance reforms are as follows:

- Augmentation in collection ratio of property tax has increased.
- By linking the water charges with property tax collection and by computerizing the tax calculation and payment option, RMC had generated huge demand and revenues.
- At the time of submitting the filled-up form, the software automatically generates the queries based on General Development Control Regulation (GDCR) rules and gives provisional permission
- All projects procurements above Rs 10 lakhs are done through e-procurement.

- All the formats with regard to various licenses are available on the website. The fees for same can be deposited at any civic center. Online licenses are also being issued in RMC.
- Birth and death certificates were issued from the civic centers on the same day of the application
- The e-Governance module of RMC uses various data-base for promoting social welfare schemes, for instance the birth data is being used to send out vaccination-related SMSs to the citizen.

4.2 Accounting Reforms

4.2.1 Municipal Accounting Reform in Bijapur City Corporation (BCC), Karnataka

Bijapur City Municipal Council (BCMC) of Karnataka adopted the DEAAS as part of the JnNURM reforms in line with National Municipal Accounts Manual (NMAM), in 2008. The implementation of DEAAS involved mapping of the existing system, reengineering of information flows, computerization of accounts of works, documentation of assets, verification of payrolls etc. In the following paragraphs, the process of implementation is discussed in two parts: facilitation at state level and implementation at ULB level. For effective implementation of this new system, professional accountants and accounting consultants were appointed at the ULBs through Karnataka Public Service Commission (KPSC). During the development of the new accounting system, periodical conduct of administrative workshops, trainings, meetings were carried out for the accountants, accounting consultants and other staff of the ULBs by the Administrative Training Institute (ATI), Mysore, MRC and the SIUD.

4.2.2 Municipal Accounting Reform in Indore Municipal Corporation (IMC), Madhya Pradesh

Keeping in view of the inefficiencies in the accounting system, IMC conceived, initiated and carried out the reform process on its own without any technical or financial assistance from any organization and took some specific measures towards accounting system reforms during 2000-01. The changes with respect to accounting and budgeting systems were in the areas of computerization of accounting system and process, conversion of accounting system from single-entry cash-based to double-entry accrual-based system of accounting, and separation of the capital account from the revenue account. IMC, with its technical partner, developed a new tailor made accounting software package in order to computerize its accounting

processes. With these initiatives IMCs' accounting system improved many fold.

4.3 Municipal Tax and User Charges

4.3.1 Property Tax Reform in Greater Vishakhapatnam Municipal Corporation (GVMC), Andhra Pradesh

Reforms in mapping of properties include a) Creating Database using GIS technique and b) attributing the data by field work. This was supported by improvements in the management of the system. As a result in 2013-14, the total number of properties in GVMC's assessment register was 414123. This number was 100% to the total number of properties in the city, in other words the coverage ratio was 100%. Total number of new assessments during the stated financial year was 41761, which was 11% increase from the previous year. GVMC reached 85% coverage ratio in 2006-07, 90% in 2010-11 and 100% in 2012-13. During 2007-08, there was an increase of 54% of assessed properties due to the GIS mapping. Overall, collection performance for current demand and current arrears for 2013-14 stands at 85%.

4.3.2 Property Tax (PT) Reform in Bruhat Bengaluru Mahanagara Palike (BBMP), Karnataka

Bangalore has been increasingly raising revenues through PT after the implementation of PT reform as summarized below:

- As per the latest Appraisal report of March 2014, the coverage ratio in the core area of BBMP had increased from 89.1% in 2012-13 to 95.8% in 2013-14. In the expanded BBMP area the coverage ratio had increased from 84.4% to 87.55% in the same period.
- In 2013-14, total number of properties assessed in the core area was 7,12,206 of which 6,82,429 have paid property tax (91.8%). In BBMP area the total number of properties are 16,17,400 out of which tax was collected from 14,16,089 (87.5%).
- The collection ratio from PT in the core area had increased from 90.8% to 91% whereas the collection ratio of BBMP as a whole had decreased from 75.5% to 73.5% during 2012-13 to 2013-14.
- In 2013-14, in the core area, against the tax demand of Rs.852 crore, and the tax collection was Rs.775.5 crore (91% collection against demand). In the same year in the entire BBMP area, the tax demand was Rs.1800 crore and the collection was Rs.1323.2 crore (73.5%).

4.3.3 User Charges Reform in Surat Municipal Corporation (SMC), Gujarat

Surat Municipal Corporation (SMC) has initiated a slew of reforms namely a) legal reforms,

b) administrative reforms and c) Reforms in citizen interface mechanisms and d) other reforms like adoption of service level bench marks. The time line to achieve 100% recovery of O&M costs from user charges stated in the MoA was 2011-12. SMC has not only met the deadline, it has surpassed the target by recovering 100.03% of the O&M cost in 2012-13 (table-5). In 2013-14 (till 28th February 2014), the total recovery of user charges was 126% of the total O&M cost. The collections in the form of ‘water charges, water tax and sewerage charge, sewerage tax’ covers the O&M costs entirely, as a result in MCGM the ‘Water Supply and Sewerage’ services are completely self-sustaining.

4.3.4 User Charges Reform in Municipal Corporation of Greater Mumbai (MCGM), Maharashtra

MCGM installed AQUA is a water billing software for calculating demand, based on metered consumption in 2005-06 in all the wards. It raises bills pertaining to water charge, water tax, sewerage charge and sewerage tax. Online payment gateway is available to citizens with internet facility through a portal to pay water bills. Also an Online Complaint Management System (OCMC), a web enabled browser based complaint management system.

As per the MoA signed on October 07, 2006, MCGM was required to revise user charges in such a manner that by the year 2012, income from user charges of a particular service recovers the full cost of O&M of the service. As per the latest Appraisal report of 2014, MCGM had achieved the expected outcomes from user charges reform as per timeline.

4.4 Swachh Bharat Mission

4.4.1 Trichy - Community managed toilet complexes

Tiruchirappalli Municipal Corporation's (TMC) focus on leveraging support of Self-Help Groups (SHG) to build local ownership and involve local community in addressing the challenge of universal sanitation coverage is noteworthy. The case documents the successful transformation of 213 slums out of a total of 285 slums into Open Defecation free slums in its efforts to meet its goal of becoming Open defecation free by 2015.

4.4.2 Nanded - Community-led Total Sanitation

Following the City Sanitation Plan, Nanded-Waghala Municipal Corporation (NWMC) with poor sanitation facilities and over 20% of its population resorting to open defecation, initiated a Community-led Total Sanitation (CLTS) project that sought to put communities in charge and accountable for the process and use their capacity to improve the status of sanitation. With a spending of less than 1% of its budget on sanitation, NWMC managed to achieve

fairly positive impacts through its community led approach.

4.4.3 Involving waste-pickers to improve door-to-door collection, Pune

The Alliance of Indian Waste-pickers (AIW) estimates that there are close to 15 lakh waste-pickers in India who make their living by recovering, sorting and selling recycling materials such as paper, plastic, glass and metal. By reducing, reusing, and recycling municipal waste, they play a vital role in ensuring environmentally sustainable solid waste management practices. Yet, their contribution often goes unrecognized. With little support from local authorities, they often face harassment, suffer from low social and health status, and continue to live and work in unsanitary conditions. Pune is at the forefront of these initiatives, and has been successful in integrating waste-pickers in front-end waste management services. The case study documents the SWaCH-PMC model of door-to-door collection which has been operational in the city since 2008.

4.4.4 Vrindavan Kuda Prabandhan Pariyojana: A program by Friends of Vrindavan - Community led initiatives in sustainable waste management, Vrindavan

Vrindavan Kuda Parabhandhan PariYojana (VKPP) was developed as a pilot model under the Religious Eco cities programme in the year 2005. The Central Pollution Control Board funded the program under its project for improving solid waste management in the ecocities namely “Achieving Action in Waste Management (AaWAM).” The Friends of Vrindavan (FoV) introduced door-to-door collection of segregated waste in two wards of the city based on user charges. Waste pickers in the city were trained and employed by FoV as safai mitras in the door-to-door collection process. The waste pickers or safai mitras were organized into a cooperative society (Vrindavan Bandhu Cooperative Society) to encourage training, capacity building, skill building activities and enable the waste pickers to access alternative livelihoods.

4.4.5 Promoting decentralized waste management by involving waste pickers in waste recovery and processing

The Parisar Vikas Program (PVP) is a program initiated by Stree Mukti Sanghatan (SMS) in Mumbai. PVP encourages societies, institutions and office parks to become zero-waste campuses, by employing trained women waste pickers called Parisar Bhaginis for waste collection, handling and processing by using compost pits and bio-gas plants. Under the program, waste picker women are organized, trained and involved in decentralized waste management. They provide waste management services to housing societies and campuses

under the Advanced Locality Management (ALM) scheme of Municipal Corporation of Greater Mumbai (MCGM).

4.4.6 Waste-to-Energy from segregated vegetable market waste

The Koyambedu wholesale market complex was conceived and implemented by the Chennai Metropolitan Development Authority (CMDA) to decongest the central business district of Chennai city and to facilitate trading of perishable items like vegetables, fruits and flowers. The market is spread over nearly 290 acres, and has about 3,200 shops. The market complex is visited by about one lakh people daily and receives 700 trucks every day. The market generates annual revenue of Rs.4 Crore through collection of entry fee. About 150 MT of organic waste is generated every day. A biomethanation plant with a capacity of 30 MT per day was established in 2006 in the Koyambedu Wholesale Market as a unique national level demonstration project in order to utilize the organic waste generated from the market for power generation.

4.4.7 Converting an open dump site into a scientifically engineered landfill, Srinagar - Moving Towards Scientific Waste Disposal

The initiative to improve the Achan dumping site was undertaken by J&K Economic Reconstruction Agency (ERA) with financial and technical guidance of The Asian Development Bank (ADB). ERA is a special purpose vehicle formed in 2004 to implement externally aided projects in the State. The scientific landfill meets all pollution control standards including those of air quality, ground water quality as per the guidelines of J&K State Pollution Control Board. In order to control the odour at the Achan landfill site, 8.60 metric tons of an anti-odour chemical has been used. The regular application of this odour control agent, on the waste has shown encouraging results and the bad odour has been minimized significantly. As part of the project, a permanent facility for regular monitoring of the landfill has also been established.

4.4.8 Planning for improved solid waste management, Ahmedabad

AMC is a signatory to the International Partnership for Expanding Waste Management Services of Local Authorities (IPLA) declaration launched at United Nations Commission on Sustainable Development in May 2011. Thus it became one of the first metropolitan cities from the developing world to adopt a zero waste goal. The AMC initiative highlights, that leveraging international platforms to initiate policy level decisions can prove advantageous for the ULBs. The signing of the zero-waste city declaration by the Ahmedabad

Commissioner not only brought significant attention to the city, it also allowed AMC to bring together a variety of stakeholders on one platform and tap into the technical expertise of national and international experts. AMC was able to sustain the momentum that was generated and follow up with other city-wide initiatives. This case study documents in detail, the planning and enforcement processes adopted by the Ahmedabad Municipal Corporation towards making Ahmedabad a zero-waste city.

4.4.9 Involving community in solid waste management, Bangalore

The Wake-up Clean-Up initiative was conceptualized as a waste management exposition to bring together all stakeholders including government agencies, bulk generators, corporate houses, NGOs and environmental organizations, solid waste experts, service providers and citizens at large on one platform and build large-scale consensus around sustainable waste management practices. The one-week expo was organized by BBMP in February 2013, in association with the Federation of Karnataka Chambers of Commerce and Industry (India) FKCCI and Bangalore City Connect Foundation (BCCF). This case study documents the zero-garbage program initiated by the BBMP with an emphasis on the Information Education and Communication (IEC) activities that were started and continue to be undertaken to inform and educate citizens about waste segregation and make them active stakeholders in the waste management processes.

4.4.10 Reaching out to school students to generate awareness about Solid waste management, Gangtok

The 'Engage 14' outreach initiative was launched in January 2014 by the GMC in collaboration with 24hours Inspired, a personality development and leadership enhancement firm that facilitates workshops and leadership programs in schools, colleges and corporate firms. GMC and 24hours Inspired have designed a program to engage school students from classes 4 to 12 in the process of understanding aspects of waste management.

4.4.11 Generating awareness about sustainable waste management through creative campaigns, Warangal

The Clean Cities Championship (CCC) was designed as an intensive one week campaign where teams from various municipalities in the State would participate in a solid waste collection and management drive in the host city and demonstrate correct methods of segregating, recycling, dumping and composting municipal solid wastes in line with the MSW Rules, 2000. Fifty seven municipalities from the northern part of the State agreed to

participate in the 7 day event and nominated a team of one sanitary inspector accompanied by two staff.

4.4.12 Door-to-door collection, transportation and waste processing services by Exnora Green

Pammal - Using PPP to establish sustainable waste management system in small towns

Pammal town is situated on the periphery of the city of Chennai in southern India. The grave condition of waste in the area made a resident take initiative to form an informal group and start creating awareness about waste management among local residents. Their efforts began to pay off when they started collecting user fees and involved some waste pickers to clean their area. Once they got noticed, they were funded by PepsiCo and registered themselves as Exnora Green Pammal and initiated several activities to deal with solid waste in Pammal town. Their journey from a few hundred households to their reach of 75,000 households currently, speaks of success from 1994 to 2014.

4.4.13 Nidan Swachhdhara Pvt. Ltd (NSPL): A sustainable model for a fully privatized waste collection and management system, Patna

Nidan was formed in 1996 to work with the poor working in informal sectors. It helped establish self-help-groups amongst the urban poor and supported these groups with micro finance and micro credit. Nidan facilitated the ‘Chakachak Patna’, initiative undertaken by the PMC in late 2002. The goal of the project was to demonstrate a sustainable system for solid waste collection and disposal by involving the waste picker community.