



Environment

Water Community



Solution Exchange for the Water Community Consolidated Reply

Query: Developing City Sanitation Plans - Experiences; Examples

Compiled by [Nitya Jacob](#), Resource Person and [Sunetra Lala](#), Research Associate
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From [Pramod Dabrase](#), Urban Administration and Development Department, Government of Madhya Pradesh, Bhopal
Posted 12 March 2009

I work with the Urban Administration and Development Department, Government of Madhya Pradesh. The Department has launched an Integrated Urban Sanitation Programme in Madhya Pradesh with the goal to achieve totally sanitized and healthy cities and towns. The programme was launched on 13 February 2009 in Bhopal.

The importance of the programme is underscored by the fact that dignitaries including the Chief Minister, the Urban Development Ministers, Principle Secretary, Commissioner, Project Director, Padmashree Ishwarbhai Patel, Municipal Commissioners/Chief Municipal Officers of all the 338 urban local bodies, and civil society representatives were present at the launch.

As a part of the programme each city will have to prepare their City Sanitation Plan (CSP) and implement it. The programme is demand-based and has already been initiated in a few cities on pilot basis and all the cities in Madhya Pradesh will be covered over the next five years. The focus of the programme is on:

- Ending the practice of open defecation in cities and towns by constructing individual, community and public toilets
- Safe disposal of solid and liquid waste including human excreta
- Improve the quality of life for sanitation workers
- Encourage community, women in particular, and civil society participation in awareness generation, hygiene education and creation and maintenance of sanitation infrastructure
- Institutional arrangements and capacity building of municipal staff for effective programme implementation
- Encourage public private partnership wherever possible and feasible
- Bring inter-departmental coordination for effective outcomes.

I would like to seek suggestions from the members about their experiences regarding the development of City Sanitation Plans, keeping the above points in mind. Members are requested to share their experiences on the following:

- How can we develop Capital Investment Plans and what are the operation and maintenance expenditure forecasts?
- What are the sanitation based livelihood and entrepreneurship models available?
- What are the success stories on urban sanitation?

Your inputs will help us to help us to learn from the best practices in other states and to implement the Urban Sanitation Programme effectively.

Responses were received, with thanks, from

1. [Johnson Rhenius Jeyaseelan](#), WaterAid, India, Lucknow ([Response 1](#)) ([Response 2](#)) ([Response 3](#))
2. [Jasveen Jairath](#), Water Sector Professional, Hyderabad ([Response 1](#)) ([Response 2](#)) ([Response 3](#) *)
3. [Puran Singh Yadav](#), Haryana Institute of Rural Development, Karnal
4. [Pramod Dabrase](#), Urban Administration and Development Department, Government of Madhya Pradesh, Bhopal ([Response 1](#)) ([Response 2](#)) ([Response 3](#) *)
5. [Sejuti Sarkar De](#), Society for Natural Resource Management and Community Development (SNRMCD), Ghaziabad, Uttar Pradesh
6. [Subodh Kumar](#), Udyog Bharati, Ghaziabad ([Response 1](#)) ([Response 2](#))
7. [Ravi Nitesh](#), Mission Bhartiya, Lucknow
8. [S.N. Umakanth](#), ITC Limited, Secunderabad
9. [Latha Bhaskar](#), Ashoka Trust for Research in Ecology and the Environment (ATREE), Trivandrum
10. [A.V.Raghu Ram](#), Visakha Jilla Nava Nirmana Samithi, Narsipatnam, Visakhapatnam
11. [Sanjay Kumar](#), Deshkal Society, New Delhi
12. [Ajit Seshadri](#), The Vigyan Vijay Foundation, New Delhi
13. [Venkatesh P.](#), Department of Community Medicine, Medical College, Bangalore
14. [Harshad Gandhi](#), Excel Industries Limited, Mumbai ([Response 1](#)) ([Response 2](#)) ([Response 3](#) *)
15. [Rajesh Malhotra](#), Brotherhood, New Delhi
16. [Puran Bartwal](#), Centre for Development Initiatives (CDI), Dehra Dun
17. [Ramesh Jalan](#), UNIDO - South Asia Regional Office, New Delhi
18. [Vijayeswari](#), The Gandhigram Institute of Rural Health and Family Welfare Trust, Dindigul *

**Offline Contribution*

Further contributions are welcome!

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[Comparative Experiences](#)
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[Responses in Full](#)

Summary of Responses

Urban sanitation needs have to address collection and disposal of solid waste, landfill sites, sewage treatment and disposal, and open defecation in slums and unauthorized colonies. There are several initiatives, albeit on a small scale, from different parts of India that addressed some or all of these in urban India.

Capital Investment Plan

While the responses did not answer the process of developing capital investment plans (CIP), additional research shows the development of city-wide CIPs remains in the hands of the municipality concerned. These follow the formulation of the city development plan (CDP). CDP balances competing needs (roads, water supply, and housing) with sanitation and are drawn up in consultation with city planners. The plans are typically multi-year and take into account revenue generation forecasts from taxes (property tax, octroi, parking charges, groundwater tax, etc), as well as income from state and central government schemes such as Jawaharlal Nehru National Urban Renewal Mission (JNNURM).

For example, the [Rajkot](#) City CIP estimates the investments needed to implement CDP. It is based on an assessment of fiscal resources available, technical capacity for construction and operation and maintenance and priority of improvements. While preparing CIP, the municipality followed a multi-step process to analyse applicable norms, discuss and agree public priorities and provided a rationale for certain options. It prioritized investments for developed areas and building inter-service linkages based on an assessment of the city growth and infrastructure needs, reassigning priorities, rescheduling investments and detailed feasibility/engineering studies.

In [New Delhi](#), the government took a somewhat different approach, aligning itself with the submissions of JNNURM. It is accordingly divided into Sub-Mission-1 covering Urban Infrastructure and Governance and Sub-Mission-2, covering Basic Services to Urban Poor. It has identified the implementing authorities for projects in National Capital Territory of Delhi. To optimize life cycle costs, private sector efficiencies can be inducted in development, management, implementation, and financing of projects, through PPP arrangements where appropriate.

Sanitation Based Livelihood and Entrepreneurship Models

In several cities, the municipalities have outsourced collection of solid waste to NGOs in certain wards. These in turn employ rag pickers to segregate waste and manual scavengers to clean community toilets, as is being done in Latur, [Maharashtra](#). The rag pickers and scavengers have been trained and equipped for the work, and has freed up the children who now attend school. These are based on entrepreneurship models as they provide a source of income, along with the requisite training and equipment, for sweepers, rag pickers, and scavengers.

ITC Limited has started a project, the [Andhra Pradesh](#) Wealth without Waste (WOW), a solid waste management initiative for dry recyclables (paper, packing material, plastics material like covers, pet bottles, tooth paste tubes, metal items, etc). Along with urban local bodies, the project supports segregation at source, door-to-door collection of dry recyclables, transportation, and processing. This has reduced garbage handling by 40 percent.

Gramalaya, an NGO in Tiruchirapally, [Tamil Nadu](#), runs a solid waste management project with the Thottiyam Town panchayat in Tiruchirappalli District. This and the plastic recycling unit are one of the viable models where the organic wastes are converted as vermi-compost. Here again, they have worked with residents to encourage waste segregation at source. The NGO has constructed 126 community toilets along with the city corporation that are maintained by

sanitation and hygiene education teams of the local self-help group. The team collects the user charges to maintain the toilets.

Urban sanitation plans have to provide for water while designing and locating toilets, else their use by communities drops over time, as has been the case in Gwalior, [Madhya Pradesh](#). However, the best performing community toilet in Laxmanpura was replicated in some parts of the city.

Open defecation remains a major problem in all cities, especially in slums and unauthorized colonies. In Visakhapatnam, Andhra Pradesh, the authorities have provided mobile toilets that are cleaned by tankers; the tankers dispose human excreta outside the town.

Success Stories on Urban Sanitation

A team at the Indian Institute of Technology Delhi has developed a waterless urinal that harvest urine; this can be used as a fertilizer. A team at [IIT Kanpur](#) has also developed a zero-discharge toilet. This separates solid and liquid matter; the solids are eventually converted into 'humanure' while the liquids are micro-filtered and used for flushing. The toilet uses a tenth of the water used by conventional toilets. It is suitable for use in congested localities and can be maintained by the local community. The 'humanure' is a potential source of income as are user charges.

Ecosan, as promoted in the Musiri Panchayat near Tiruchy, Tamil Nadu, is another option for providing sanitation on congested areas. However, as the [Uttarakhand](#) experience reveals stronger awareness generation is needed to ensure proper use of Ecosan toilets.

Solid waste management linked to greenhouse gas mitigation is a relatively new business model. One tonne of organic waste generates around 1.16 tonnes of carbon dioxide equivalent while decaying in a landfill. If this is processed using an accelerated composting process, it can save a significant amount of the CO₂ generated and qualify for carbon credits. The government can consider a budgetary allocation under the Carbon Fund to encourage city solid waste composting as an economically viable option. Two such projects are coming up in Delhi and have been registered under the Clean Development Mechanism. However, segregation at source is a must for these plans to succeed.

To conclude, the urban sanitation success stories have a few things in common, that can inform city sanitation plans. These are intensive awareness campaigns for households to encourage garbage segregation at source and separate collection and processing systems to handle segregated garbage. Slums need either community toilets or individual toilets that use little space and water. CDPs and their resultant CIPs have to prioritise both these activities; currently water supply and road building take the lion's share of most plans. What is also clear is the need to involve community organizations (self-help groups) and NGOs in planning and implementation for community by-in and sustainability.

Comparative Experiences

Andhra Pradesh

Wealth Without Waste (WOW) Project Helps in Recycling Household Wastes (*from [S.N. Umakanth](#), ITC Limited, Secunderabad*)

ITC Limited has initiated a solid waste management initiative for dry recyclables. Under this source segregation, collection, transportation and processing is being supported. Woven bags are provided to households for dry recyclables. ITC collects the dry recyclables and this is recycled

and used for manufacturing paper board. As a result, 40% load of the ULB's garbage handling has come down. ITC has initiated this project in 20 ULBs across Andhra Pradesh. Read [more](#)

Madhya Pradesh

Community Toilets Without Proper Drainage Systems Reinforces Manual Scavenging, Gwalior (from *Jasveen Jairath, Water Sector Professional, Hyderabad; [response 1](#)*)

The Municipal Corporation of Gwalior was involved in the construction of community toilets based on the pay and use principle. They were specifically opposed by citizen's forum unless water and flush systems were put in place. Despite persistent discussions by local communities no flushes and drainage systems were installed. This led to a concentration of excreta in one place with serious health problems. These are now rampant in Gwalior and reinforced manual scavenging.

Maharashtra

Solid Waste Management Programme Empowers Women and Children, Latur (from *Sejuti Sarkar De, Society for Natural Resource Management and Community Development (SNRMCD), Ghaziabad, Uttar Pradesh*)

CARE India and ACDI/VOCA implemented a solid waste management model in 15 municipalities. The municipalities outsource work such as door-to-door collection and clearing of dumps. Rag pickers and manual scavengers were employed for the job, who were trained and given proper outfits. The programme helped in women's empowerment and the former rag pickers started going to school. Latur Municipality as a result became a dustbin free municipality. Read [more](#)

Tamil Nadu

Womens' Self Help Groups Make Earnings as a Result of Community Toilets, Tiruchirapally District (from *Nitya Jacob, Resource Person*)

Gramalaya has initiated the concept of community toilets along with the Thottiyam Town panchayat in Tiruchirappalli District. These toilets are maintained by the sanitation and hygiene education teams of local womens' self hep groups. The toilets work on a pay and use principle, and user charges are collected by these teams. These toilets have been so successful that the NGO has constructed 126 community toilets along with the city corporation. Read [more](#)

Uttarakhand

Ecosan Toilets in Disuse Despite Training and Awareness Campaigns, Dehradun (from *Puran Bartwal, Centre for Development Initiatives (CDI), Dehradun*)

Sanitation was an issue with a scheduled tribe locality near Dehra Dun. To address this, CDI demonstrated the usefulness of ecosan toilets here, with proper training and awareness. The residents were briefed about the method and use of the toilet but after about 20 days they complained of foul odour in the toilet. It was found that due to their old habits some residents used water instead of ash, rendering the ecosan toilets unsuitable.

Related Resources

Recommended Documentation

Zero Discharge Toilets (from *Johnson Rhenius Jeyaseelan, WaterAid, India, Lucknow; [response 2](#)*)

Article; by Vinod Tare; IIT Kanpur; Kanupur;

Available at <http://www.solutionexchange-un.net.in/environment/cr/res12030901.pdf> (PDF; 2.69MB)

Describes the zero discharge toilets developed by IIT Kanpur, suitable for urban areas. A demonstration model for this has also been set up in the IIT campus

Excel's Initiatives on Integrated Municipal Solid Waste Management (from Harshad Gandhi, Excel Industries Limited, Mumbai; [response 2](#))

Project Note; by Excel Industries Limited; Mumbai; April 2009;

Available at <http://www.solutionexchange-un.net.in/environment/cr/res-25030901.doc> (DOC; 400KB)

Describes Excel Industries' decentralised solid waste management concept, involving stakeholders' participation in the implementation of decentralised waste management

JNNURM Project and Capital Investment Plan: Chapter 19 (from [Nitya Jacob](#), Resource Person)

Chapter; by; IL&FS Ecosmart Limited; Department of Urban Development, Government of India; New Delhi;

Available at

http://www.ccsindia.org/ccsindia/pdf/Ch19_Project%20and%20Capital%20Investment%20Plan.pdf (PDF; 688KB)

Explains the capital investment plans that have been prepared for specific sectors including water supply, sewerage and sanitation, storm water drainage, etc.

Recommended Contacts and Experts

Vinod Tare, IIT Kanpur, Kanpur (from Johnson Rhenius Jeyaseelan, WaterAid, India, Lucknow; [response 2](#))

Nankari, Kanpur 208016, Uttar Pradesh; Tel: 91-512-2597674, 91-9956711335; Fax: 91-512-2590465; vinod@iitk.ac.in; <http://www.iitk.ac.in/dofa/DOFA/currentfaculty.htm>

IIT Kanpur professor who developed a zero discharge toilet model, suitable for urban areas, a demonstration unit for which has been set up in the campus

Recommended Organizations and Programmes

IIT Kanpur, Uttar Pradesh (from Johnson Rhenius Jeyaseelan, WaterAid, India, Lucknow; [response 1](#))

Nankari, Kanpur 208016, Uttar Pradesh; Tel: 91-512-2597674; Fax: 91-512-2590465; doaa@iitk.ac.in; <http://www.iitk.ac.in/bsbe/>; Contact Vinod Tare; Professor; Tel: 91-9956711335; vinod@iitk.ac.in

A pioneering science and engineering institute located in Kanpur, which has developed a model for zero discharge toilets

From Jasveen Jairath, Water Sector Professional, Hyderabad; [response 1](#)

UN HABITAT, Tamil Nadu

UN-HABITAT Information Office, 5th Floor (East Wing), Thalamuthu Natarajan Building, (CMDA Building), Egmore, Chennai 600008, Tamil Nadu; Tel: 91-44-28411302; Fax: 91-44-28516273; unchssp@md2.vsnl.net.in; <http://www.unhabitat.org/categories.asp?catid=270>

Water and sanitation is a priority area of work for the UN HABITAT, and at Gwalior it initiated the concept of community toilets based on the principle of pay and use

WaterAid, Madhya Pradesh

E-7/846, Arera Colony, Bhopal 462016, Madhya Pradesh; Tel: 91-674-2531266;
wairoe@wateraid.org; http://www.wateraid.org/india/about_us/default.asp

An independent organisation, which enables the world's poorest people to gain access to safe water, sanitation and hygiene education and began working in India in 1986

From [Sejuti Sarkar De](#), Society for Natural Resource Management and Community Development (SNRMCD), Ghaziabad, Uttar Pradesh

CARE, New Delhi

27 Hauz Khas Village, New Delhi 110016; Tel: 91-11-26566060; Fax: 91-11-26564081;
info@careindia.in; <http://careindia.org/ManageProgramKey/VisitKeyFocusFeature.aspx>

Focuses on social development and humanitarian response programme across ten states in India, and implemented a solid waste management programme in Maharashtra

ACDI/VOCA, Rajasthan

D-45, Janpath, Shyamnagar, Jaipur 302019, Rajasthan; Tel: 91-141-2297403;
dmtaylor@gmedindia.org; http://www.acdivoca.org/852571DC00681414/ID/ourwork_india

Promotes economic opportunities for communities through application of sound business practice and implemented a solid waste management model in Latur Municipality

Jawaharlal Nehru National Urban Renewal Mission

Ministry of Urban Development, Government of India, Nirman Bhawan, Maulana Azad Road, New Delhi 110011; Tel: 91-11- 23061287; Fax: 91-11-3793672; www.jnnurm.nic.in

Programme for urban development, includes reforms in service delivery, including water and sanitation; and proposes cost recovery for urban services by Urban Local Bodies

Defense Research and Development Establishment, Madhya Pradesh (from Subodh Kumar, Udyog Bharati, Ghaziabad; [response 2](#))

Jhansi Road, Gwalior 474002, Madhya Pradesh; Tel: 91-751-2341550; Fax: 91-751-2341148;
director@desidoc.drdo.in; http://www.drdo.org/labs/drde/historical_background.html

A defence research institute, the technologies developed by DRDE are available for civil use as a spin off; it has developed a technology for disposal of human excreta

ITC Limited, West Bengal (from [S. N. Umakanth](#))

37 J. L. Nehru Road, Kolkata 700071, West Bengal; Tel: 91-33-22889371; Fax: 91-33-23454455;
Email; http://www.itcportal.com/sets/paperboards_frames.html; Contact S. N. Umakanth; Tel: 91-9989604190; snumakanth@yahoo.co.in

Has developed the Wealth Without Waste (WOW) Project in Andhra Pradesh, which involves communities for household segregation of waste that is later recycled

From [A.V. Raghu Ram](#), Visakha Jilla Nava Nirmana Samithi, Narsipatnam, Visakhapatnam

Sulabh International Social Service Organization, New Delhi

Sulabh Gram, Mahavir Enclave Palam-Dabri Road, New Delhi-110045; Tel: 91-11-25031518; Fax: 91-11-25034014; sulabh1@nde.vsnl.net.in; <http://www.sulabhinternational.org>

Provides sanitation services across India, and has built 1.2 million Sulabh Shauchalayas, which are used by 6 million people

Visakha Jilla Nava Nirman Samithi, Andhra Pradesh

Sivaram Nilayam, Behind RTC Bus stop, Narsipatnam, Visakhapatnam 531116, Andhra Pradesh; Tel: 91-8924-235285; <http://www.vjnns.org/water-hygiene-sanitation.html>

Works for promoting hygiene care and sanitation for under-developed communities; inculcating health care among tribals is its priority programme

Total Sanitation Campaign (TSC) (from [Sanjay Kumar](#), Deshkal Society, New Delhi)

Ministry of Rural Development, Department of Drinking Water, 247, A Wing, Nirman Bhawan, New Delhi 110011; Tel: 91-11-23010207; jstm@water.nic.in; http://ddws.nic.in/tsc_index.htm

Programme aimed at increasing awareness regarding sanitation among rural people, and so far 5.6 crore household toilets have been constructed across rural India under TSC

From [Ajit Seshadri](#), The Vigyan Vijay Foundation, New Delhi

United Nations Children's Education Fund (UNICEF), New Delhi

73 Lodhi Estate, New Delhi 110003; Tel: 91-11-24690401; Fax: 91-11-24627521; newdelhi@unicef.org; http://www.unicef.org/india/children_2357.htm

UN agency working with the government to introduce sanitation and hygiene education in schools and has initiated projects to provide safe drinking water in schools

The Vigyan Vijay Foundation, New Delhi

H2, 2-5, Mahavir Enclave, Palam - Dabri Road, New Delhi 110045; Tel: 91-11-25058853; ajit.seshadri@vigyanvijay.org; <http://vigyanvijay.org/jaljagren.htm>; Contact Ajit Seshadri; Head-Environmental Wing; Tel: 91-9810460049; ajit.seshadri@vigyanvijay.org

Works on issues of water conservation, sanitation and eco-literacy, and in partnership with UNICEF is developing waterless toilets

From [Venkatesh P.](#), Department of Community Medicine, Medical College, Bangalore

SCOPE, Kerala

P/17, 6th Cross, Ahmed Colony, Ramalinga Nagar, Woraiyur, Tiruchy 620003, Kerala; Tel: 91-431-2774144; scopeagency86@sify.com; http://www.scopetrichy.com/First_ECOSAN_Village.asp

Focuses on ecological sanitation and has constructed over 2,000 Ecosan toilets on the banks of the rivers Ganges and Cauveri and the coastal villages of Tamil Nadu

WASH Institute, Tamil Nadu

Water, Sanitation and Hygiene (WASH) Institute Secretariat, "Ashwat Nivas", 5-296, Anandhagiri, 7th Street, Kodaikanal 624101, Dindigul District, Tamil Nadu; Tel: 91-4542-240881; Fax: 91-4542-240882; secretariat@washinstitute.org; http://www.washinstitute.org/about_institute_interventions.php

Provides both short and long-term courses with a focus on water supply and harvesting, sanitation, hygiene, integrated water resource management, etc

Hope Foundation, Tamil Nadu

First Floor, New No. 13, Old No. 7D, Sharath's Apartments, Nehru Nagar 1st Street, Adyar, Chennai 600020, Tamil Nadu; Tel: 91-44-24463394; hope_foundation@hopeww.org; <http://www.hopefoundation.org.in/visionandmission.aspx>

Provides sustainable, capacity-building health and education programmes, and as part of its disaster relief work provides water and sanitation facilities

Ministry of Environment and Forest, New Delhi (from [Harshad Gandhi](#), Excel Industries Limited, Mumbai; [response 1](#))

Paryavaran Bhavan, CGO Complex, Lodhi Road, New Delhi 110003; Tel: 91-11-24361669; Fax: 91-11-24363962; envisect@nic.in; <http://www.envfor.nic.in/>

Nodal agency of the Central Government of India for the planning, promotion, co-ordination and overseeing the implementation of environmental and forestry programmes

Gramalaya, Tamil Nadu (from [Nitya Jacob](#), Resource Person)

No.12, 4th Cross West, Thillainagar, Tiruchirappalli 620018, Tamil Nadu; Tel: 91-431-402156; gramalaya@airtelmail.in; <http://www.gramalaya.in/community.php>

Assisted in the construction of community toilets, along with local authorities in Tiruchi City Corporation, which are maintained by Sanitation and Hygiene Education teams

Recommended Portals and Information Bases

Excel Industries Limited, Maharashtra (from Harshad Gandhi; [response 1](#))

www.excelind.co.in/cat.htm; Contact Harshad Gandhi; Consultant; Tel: 91-9829330187; hvgandhi84@excelind.com

Describes the organic waste converter, which converts waste to compost, provided the organic waste is segregated at source

Related Consolidated Replies

Cost-effective and Financially Sustainable Urban Water Supply and Sanitation Services, from Tushaar Shah, International Water Management Institute (IWMI), Gujarat (Comparative Experiences). Water Community, Solution Exchange India,

Issued 16 June 2005. Available at <http://www.solutionexchange-un.net.in/environment/cr/cr-se-wes-16060501.htm> (HTML)

Provides examples and experiences in context of cost-effective approaches for urban water supply and sanitation services

Solid Waste Management in Urban Settings, from Nidhi Prabha Tewari, Sanket Information and Research Agency, New Delhi (Advice). Water Community, Solution Exchange India,

Issued 16 August 2005. Available at <http://www.solutionexchange-un.net.in/environment/cr/cr-se-wes-16080501.htm> (HTML)

Highlights successes and failures of recycling and revenue generation potential of solid wastes through case studies

Ecological Sanitation, from S. Janakarajan, Madras Institute of Development Studies (MIDS), Chennai (Examples; Experiences). Water Community, Solution Exchange India,

Issued 30 June 2007. Available at <http://www.solutionexchange-un.net.in/environment/cr/cr-se-wes-05060701.pdf> (PDF, Size: 180KB)

Details members' experiences in promotion of ecosan across India, sharing their understanding, analysis of current problems and suggestions for scaling up the same

Responses in Full

[Johnson Rhenius Jeyaseelan](#), WaterAid, India, Lucknow (*response 1*)

IIT Kanpur has developed a zero-waste technology community toilet. In this the waste water and the faeces are processed, recycled and reused. The urine and water is recycled and reused. The faeces, through a certain process, is recycled and used as manure. They do have a prototype in their campus in Kanpur and have a demonstration unit in Aligarh too. It will be a good livelihood option as one family is needed for operation and maintenance of the same. Please do contact Professor Vinod Tare for more information about the same.

[Jasveen Jairath](#), Water Sector Professional, Hyderabad (*response 1*)

I have limited experience of being involved in an urban Watsan governance project in Gwalior for a couple of years to establish a city based Jan Tantra Samvad Manch based on Mohalla Samittees - my comments are in that capacity. City Watsan plans are a very welcome step per se but who makes them and through what process (transparency /consultation of citizens, finally through what forms of accountability will they be implemented are very serious questions. Without clarity on these issues it will fail to excite us.

The Municipal Corporation of Gwalior was involved with UNH/Water Aid/ citizen's forums in the process of construction of community toilets on pay and use principle. They were specifically and repeatedly exhorted by citizen's forum NOT to make any common toilet unless water, drainage and flush systems were put in place as it has implications for efficient maintenance of toilets by safai karamcharis (sweepers/cleaners who are doing manual scavenging even today as part of their official GOVT duty). Despite persistent prior discussion and facilitation of proposals by local community, etc no flushes have been installed on the ground of "*paani kahan se layengay?*" If there is no provision of water then creation of public/community toilet leads to concentration of excreta in one place with serious health and other problems these are rampant in Gwalior as is apparent to any casual visitor. Secondly, this reinforces manual scavenging through recent developments so why does the GMC do this?? Will they listen to citizens through the sanitation plan or stubbornly continue their indifferent attitude and persist in creating problems in the name of solving them.

Finally such poorly conceptualized public toilets have very low utilization levels. Can local users give their evaluation on this rather than hired consultants? Two pit toilets leach type are still being encouraged in congested areas where ground water bores are a major source of domestic water and there is no regulation of spacing of such two pit toilet. Drainage provision does not include management of grey water even plans to handle this are not in place. As a result 6-7 major open "nallas" flow throw Gwalior that carry a slush of solid and liquid waste while GMC officials claim at conferences that 70-80% of the city is covered by sewerage systems! Will such blindness to ground reality be pre-empted through such planning process or will it be a run of the mill government exercise? Is the government willing to consult citizens through a public process and act on their suggestions? If that is the case please let it be known so that the government can begin the exercise by preparing a white paper on the history of developments in urban Watsan in the particular city, the present scenario and process of take off, a diagnostics of past mistakes in managing waste water should be accepted so as not to repeat it in future. There is a need for transparency about financial investments - so that there can be a public watch on "contract work".

Puran Singh Yadav, Haryana Institute of Rural Development, Karnal

I would like to know if the Zero Waste Community Toilet referred to by [J. J. Jeyaseelan](#) is also appropriate for use in rural areas. I would also like to know the contact address of Professor Vinod Tare for more information.

Pramod Dabrase, Urban Administration and Development Department, Government of Madhya Pradesh, Bhopal (response 1)

I am responding to the concerns raised by [Jasveen Jairath](#). The process we are following in preparing the sanitation plans include: community consultation, involvement and consultation with NGOs, sanitary workers and business associations in the ULBs. They are all part of the city sanitation committee that is formed where the process has initiated. The City Sanitation Plans would be prepared only if we have arrangements for implementation, thus it is not mere a planning exercise. In fact, the planning also includes planning for financial arrangements,

through integration of various schemes and programme so that the various sources of funds (centre, state, ULBs, community, PPP, etc) can be capitalized and systematically utilized. Secondly, selection of the cities and towns is demand based; which means that, the cities that show willingness and pro-activeness would be given priority and meanwhile demand generation through IEC would be done in other ULBs.

About Gwalior example: I would like emphasize that I was part of the WaterAid programme and wherever WaterAid has promoted community toilets, it was done only after community agreements and only when individual toilets were not possible. In fact, Gwalior has demonstrated one the best community managed sanitation complexes in Laxmanpura, which has been scaled up in the city.

If there are any gaps, they may be looked into as a part of this programme. The programme however has seriously taken the issue of eradicating the practice of manual scavenging, if noticed and improving living conditions of the sanitary workers. Various activities including training, technological up-gradation, etc are already being considered.

Other issues Jairath raised may be discussed further, but I would like to convey that the sanitation situation in the state and country is grim and that is the reason we are all working to resolve the issue. Government alone may not be successful until they get support form all the concerned stakeholders including community. Let's accept the challenge and try to fight the problem rather than criticizing it.

Sejuti Sarkar De, Society for Natural Resource Management and Community Development (SNRMCD), Ghaziabad, Uttar Pradesh

The initiative that you have planned is appreciative. Regarding the entrepreneurship model, I would like to mention the Solid Waste Management model, which we implemented in 15 municipalities while I was working for CARE-India and ACDI-VOCA programme. We encouraged the municipalities to outsource the works like door-to-door collection, clearing of roadside dump, night sweeping, etc. to private bodies specially the small private contractors and local NGOs. The NGOs and contractors, in turn, were employing rag-pickers and manual scavengers for the job. They were trained, given proper outfits and equipments. The programme helped in women empowerment and also the children who were formally rag-pickers were going to school. The programme was most successful at Latur Municipality in Maharashtra, which became a dustbin free city.

Similar model can be implemented for sanitation especially in small municipal towns of MP. The works like clearing of drain sewage, construction of low-cost sanitation pit, etc. can be outsourced to small contractors and local CBOs/NGOs who will employ the manual scavengers. This will ensure less expenditure and less manpower involvement for the municipalities and also rehabilitation for the scavengers.

We have done 'Impact Assessment for Low-Cost Sanitation programme under JNNURM in 15 states and have observed that without proper sensitization and awareness programme; the sanitation models cannot be successful.

Johnson Rhenius Jayaseelan, WaterAid, India, Lucknow (response 2)

I had visited IIT Kanpur and have seen the demonstration model. The model needs space and also a team of 2 to 3 people. It is better suited in urban areas than rural. I am attaching a PDF doc written by Dr. Vinod Tare, please visit <http://www.solutionexchange->

un.net.in/environment/cr/res12030901.pdf (PDF; Size: 2.69MB) for the same. I have also contacted him to contribute to the discussion. Dr. Vinod Tare Email is: vinod@iitk.ac.in and mobile number is 09956711335.

Jasveen Jairath, Water Sector Professional, Hyderabad (*response 2*)

I would like to clarify some points made by [Pramod Dabrase](#). Community Toilets are required - no one can disagree. But they should have water provision, drainage and flush systems. Otherwise they create centres of excreta collection that is actually a health hazard.

Laxmanpura toilet is only one toilet that is working with a degree of success and please note, that it has a flush system. The 20 new community toilets installed with I think with UNH support, correct me if I am wrong, and are newly constructed ones with no flush system despite of local Samities asking for it, hence my skepticism that local government may not listen to voice of citizens. Very efficiently designed flush systems that use 3-4 litres of water for excreta flushing have been designed and are available - this is practically similar amount of water as that used by throwing of the bucket and that too by a Safai Karmchari. Manual scavenging is rampant in Gwalior – I challenge anyone to contest this at an independent public platform, that is independent of government and donor supported NGOS.

The effectiveness of interventions made for improving the lot of safai karamcharis is rather weak. We can show trainings conducted, etc but it is a drop in the ocean in terms of brining about structural change in government systems and also community attitudes - the gap remains too wide. That is why there is need for an **independent** voice of citizens - that is independent both of govt., NGOs and Donors for a realistic assessment of needs priorities/problems faced by community as also those that are created by citizens through their anti -social and uncooperative behavioural patterns. The government and citizens both need to be accountable to each other as of now this is a far cry. There is strong reluctance by the government to listen to criticism of its past and present policies and constructive suggestions - unless we recognise the need to correct this, the domination of government decisions on citizens will continue.

Since you have mentioned demand based sanitation plans exercise - please let us know how this demand can be communicated and may be the citizen's platform that has been recognised by the Commissioner /local government can convey the same to you that as of now citizens group does not know about this very positive opportunity. We can publish this in their Newsletter for wider dissemination.

As of now the condition of Gwalior remains as dismal as that of most towns - this is not in any way a comment on Water Aid or any other donor - only to highlight the gravity of the situation. It is interlaced with 7-8 open nallas in which RAW sewerage, grey water and solid waste is carried. It also has remnants of an abandoned drainage project; crores worth of money received and not accounted for.

My plea is - let's face the truth.

Subodh Kumar, Udyog Bharati, Ghaziabad (*response 1*)

Is it possible to use these IIT Kanpur toilets on a large scale in our country? Is there a SWOT analysis possible of this technology? What is the average cost of a domestic toilet for a family of 6 toilet using members? What are the experiences of using biodegradation biomethanation digesters for human excreta/sewage disposal in India?

Ravi Nitesh, Mission Bhartiya, Lucknow

In fact the model suggested is quite good. We have to also think about household waste from semi-urban and rural area. In fact we have not implemented procedures of waste collection in most of our cities. For this to happen, first we have to make sure that people are ready for change.

Subodh Kumar, Udyog Bharati, Ghaziabad (response 2)

The DRDE (Defense Research and Development Establishment) at Gwalior is reported to have developed a technology for disposal of human excreta. The Indian Railway is going in for trials in long distance train toilets. It is said that a number of private entrepreneurs have also been given licenses for commercial installations. Can anybody give an account of the performance and working of these systems?

IIT Kanpur model: What are the pathogen levels in the 'humanure' from the IITK installations? What are the recurring costs of bacteria replenishments? The pathogens in humanure have been a cause of concern and impose restrictions on use of this fertilizer.

Is there any system available in India for degradation of human waste in biodigesters, getting biogas as a byproduct and safe water and fertilizer out puts to operate unconnected with electric supplies, at best utilizing their own biogas?

S.N. Umakanth, ITC Limited, Secunderabad

I work with ITC Limited for the Andhra Pradesh Wealth without Waste (WOW) project. WOW is a solid waste management initiative concerned with dry recyclables. Under this project we have joined hands with ULBs and we support source segregation, door-to-door collection of dry recyclables, transportation and processing. We are providing IEC material to households to encourage source segregation and we are also providing woven bags to every household so that they can put dry recyclables such as paper, packing material, plastics material like covers, pet bottles, tooth paste tubes, etc. and metal items such as tins, lids, etc. This bag is used exclusively for dry recyclables and existing bin are used for wet waste. By this method wet and dry waste are source segregated. ITC collects the dry recyclables from door-to-door by paying price per kg to the households and this material is brought to the godown where we sort, handle and transport the materials to our mills where we recycle and manufacture paper board. Thereby, 40% load of the ULB's garbage handling has come down.

The merits of WOW are:

- The environment is protected
- Many Trees will be saved
- Valuable raw material for industries is recovered
- Municipal Solid Waste Rules are adhered to
- The city will be clean and green
- 40% burden of garbage handling will come down for ULBs.
- The saved amount can be utilised for civil amenities by ULBs
- ULBs can apply for ISO 14000.

At present ITC has initiated this project in 20 ULBs across Andhra Pradesh and metro cities such as Hyderabad, Coimbatore, Chennai and Bangalore.

[Latha Bhaskar](#), Ashoka Trust for Research in Ecology and the Environment (ATREE), Trivandrum

Whatever sanitation strategy and model we plan, it needs to be 'safe sanitation', ensuring that our nearest water bodies are not polluted. We need to have appropriate technology choices suitable to each locality, to ensure that excreta do not reach the water bodies, at any cost. In fact the whole idea of latrines emerged to ensure safe disposal of excreta, besides ensuring privacy. Later we shifted to sophisticated super structures forgetting the safety aspects and with the increase in the latrine coverage statistics, the sewage load of water bodies also increased.

Thereafter, we spend money to treat this water and ensure safe drinking water or often suffer from water born diseases adding to our morbidity/mortality statistics. It is a vicious cycle. Good models are available around the world to convert this waste into harmless manure and return to the land as fertilizer, etc (avoiding chemical fertilizers). It is high time we concentrate on appropriate sanitation policies and shift to such approaches. Only when government policies and schemes are changed, such changes can be brought out. So let us focus on new sanitation policies, appropriate area specific technology options and integrated approaches rather than continuously discussing sanitation coverage. Let us ensure that our water bodies are not polluted further. This in fact should be the focus of sanitation now.

[A.V. Raghu Ram](#), Visakha Jilla Nava Nirmana Samithi, Narsipatnam, Visakhapatnam

During our staff review meeting at Visakha Jilla Nava Nirmana Samithi there was a question raised regarding preventing open defecation. There were several ideas, one out of which was mobile sanitary toilets. There are several such tankers now in smaller towns and rural areas. Through this (without much manual labour and bad odour) the stored human excreta is pumped with the help of motors into a tank and is carried away from towns.

At present the villages and outskirts are full of human excreta and the weekly market days add to the waste disposal. Therefore, there is a need to have appropriate infrastructure at such locations, such as mobile toilets. The concept is already being practiced for sophisticated buses and vehicles. But there are no such facilities in public places. The Sulabh complexes are already in place (pay and use concept) and the use of mobile toilets also will be very useful. However, the appropriate technical aspects for this need to be worked out.

[Sanjay Kumar](#), Deshkal Society, New Delhi

While endorsing TSC, we need to launch a campaign to have cities with public urinals, since cities such as Delhi have several places where people use sidewalks for this. Open defecation is still prevalent in slums where adequate number of MCD bathrooms has not been constructed. It is important to involve faith-based organisations in this regard as they have presence in all areas. Support from faith-based leaders is the best means of persuasion for preventing open defecation and urination. Cooperatives could be built in slums and villages for running public utilities along with promotion of culture of cleanliness. Restoration of dignity for sanitation worker through cooperative building also needs to be ensured.

[Ajit Seshadri](#), The Vigyan Vijay Foundation, New Delhi

I appreciate the points made by member [Sanjay Kumar](#), and I would like to take the inference forward:

1. Need to launch a campaign to have cities with public urinals:

This is very much needed. IIT-Delhi is in the process of developing Water Less Urinals (WLUs). This is a UNICEF project and is being developed in partnership with our NGO, the Vigyan Vijay Foundation. Existing toilets/urinals can also be modified to harvesting urine. City planners ought to plan for all these services with shelter bus-stops, etc, in order to bring order, thus reducing the need for using sidewalks and lanes to release oneself.

2. Open defecation in slums:

This cannot be avoided unless facilities are provided for slum-dwellers. We work in slums and have tried a concept of controlled open defecation like defecating on narrow-lanes on one side for two weeks and the other side for the next two weeks. When open-defecation occurs on one location for a period and is then stopped, this gives the waste handlers time and space to keep clean and also there is privacy for the users. We are not endorsing the habit of open-defecation in urban areas, but there is no other alternative.

3. Association of faith-based and youth based organizations:

This can provide more concentrated efforts for both the above facilities.

4. Waste water reuse and composting:

Sufficient scope exists on treating waste water and re-use of water for horticulture, and for reducing groundwater extraction. We have also been associated with campuses for conversion of bio-wastes to compost manure. We have observed that whenever the waste from one path is evolved into usable resource, then the initiatives however difficult gets sustained. By using appropriate technology the communities also make financial gains.

Venkatesh P., Department of Community Medicine, Medical College, Bangalore

I have witnessed the problem of open defecation and unsanitary practices mentioned by [A.V. Raghu Ram](#). I cannot provide solutions but am making an attempt to redress some part of it by asking you to peruse the ECOSAN initiatives taken up by the communities in Tamil Nadu and Karnataka especially in Musiri Panchayat near Tiruchy. This has been taken up by SCOPE and is being used by the community. I had attended a training programme on the said initiative by WASH Institute, Kodaikanal. Some of the members were part of the training from Andhra Pradesh. They were from HOPE in Tirupati. Do contact them for more details.

Harshad Gandhi, Excel Industries Limited, Mumbai *(response 1)*

The existing practice of organic city solid waste disposal in India contributes to green house gas emission at land fill sites and causes adverse climate change. In addition, long haulage of waste to far-off landfill site adds to vehicular pollution. Apart from environment deterioration/pollution present system causes serious concern about public health hazard and unhygienic condition.

If organic waste is segregated and processed into compost at source of generation using organic waste converter (www.excelind.co.in/cat.htm) by waste generating communities or bulk waste generators such as hotels, hostels, hospitals(from kitchen), corporate house canteen, commercial kitchen etc then it will have impact not only in terms of improving community health & hygiene but also mitigate GHG emission at landfill site as well as reduce vehicular pollution. Further the concept of "Garbage to Garden" can also be structured within the objective of the Urban Poverty Alleviation Programme.

Delhi generates about 6000 tons of garbage per day; nearly 50% of such waste (say about 3000 ton/day) is organic in nature. 30% to 40% of such waste (say about 1000 ton/day) is generated by bulk waste generators in organized sector. If 1000 OWC Systems spread across Delhi is

created then the ill-effects of these waste in terms of GHG emissions and public health hazards can be reduced to a great extent.

Since this activity envisages decentralized small scale operation service, capacity building of micro-entrepreneurs can be visualized. The missing link is institutionalization of micro-entrepreneur service and appropriate legislation to pass onus of waste treatment at source by bulk waste generators on themselves preferably in-house or at the nearest OWC service provider in the neighbourhood.

In addition, financial and fiscal support will be required for the first 100 to 200 OWC system installations by micro-entrepreneurs. The Environment Department of the Government of Delhi NCT has evaluated the functional utility of such a system. If Municipal Corporation of Delhi (MCD) or New Delhi Municipal Corporation (NDMC) takes some initiatives to legislate and enforce a Decentralized Waste Management Strategy then it can become a mass movement and a way of life that can make the city of Delhi cleaner, greener, and healthier before Common Wealth Games in 2010.

[Johnson Rhenius Jeyaseelan](#), WaterAid, India, Lucknow (*response 3*)

In any sanitation intervention water is used for flushing, cleaning toilet and for usage of toilet by a person and thus is water intensive. Also the water in use in such cases is municipality supply or groundwater and the wastage of water is high.

Even if we use mobile toilets the question is where the faeces will be disposed? The best option is to promote Ecosan or zero waste technology that puts less stress on water and also on the environment. In a few community toilet models DEWATS have been implemented but still where do the faeces go? It goes back to the rivers and nalla, and the municipalities spend crores to filter and treat this water and supply the water for drinking. The cost of zero waste technology/Ecosan interventions is more but then the future costs and hidden costs are less.

In sanitation we forget the cost of hidden costs such as medical costs, coping costs and also economic cost on account of time (travel from home to open defecation site and back). In urban areas, especially in slums space is a constraint and hence even Ecosan toilets may not be sustainable and only community managed toilets will be successful. Last but not the least, as a very short term intervention let us motivate people to cover their faeces with mud after defecation in open areas.

[Rajesh Malhotra](#), Brotherhood, New Delhi

I would like to second the suggestions made by [Sanjay Kumar](#). It is sad though true, that even our capital city, Delhi has miserably failed in providing it people with something as basic as urinals. While uncontrolled and unplanned human migration is being allowed by the government, provisions of basic hygiene and sanitation facilities are being conveniently ignored or sidelined. Not only is there an urgent need for providing adequate public facilities, its maintenance and upkeep over the years is an equally vital need if not more. Often it is found that a couple of years into its construction and opening, these grossly inadequate public utilities become unusable. Their poor upkeep leads to this situation and soon it is back to square one. Adequate water supply clubbed with skilled manpower and frequent supervision drives can save the situation.

[Puran Bartwal](#), Centre for Development Initiatives (CDI), Dehra Dun

I agree with the suggestions made by Johnson Rhenius Jeyaseelan, WaterAid, India, Lucknow that all sanitation intervention are water intensive and the use of Ecosan toilet is the best option.

I want to share my experience of demonstrating Ecosan or zero waste toilets in a village near Dehra Dun, Uttarakhand. We demonstrated Ecosan toilet with proper training and awareness with a scheduled tribe (Boxa) family in the area. All the family members were properly briefed about the method and use of the toilet but after about 20 days they complained that there was a smell in the toilet and some of the family members were not using the toilet. After investigation it was found that due to their traditional habits some family members used water instead of ash. It shows that even the use of Ecosan toilet will need appropriate mechanisms of technology transfer.

[Pramod Dabrase](#), Urban Administration and Development Department, Government of Madhya Pradesh, Bhopal (response 2)

The idea suggested by [Harshad Gandhi](#) seems good and is a likely solution to the SWM problems, especially in larger cities. Such approaches may be tried while implementing the City-wide Sanitation Plans. There are examples within India; Ranchi for instance, where municipal solid waste from households and commercial institutions, etc is being effectively managed. In Andhra Pradesh, ITC is involved in recycling dry waste.

Since Harshad Gandhi has raised issues of GHGs, I am curious to know if there are any examples where a link between municipal solid wastes has been established with the GHG emission and the municipalities benefiting in terms of Carbon Credits from such initiatives. Can Carbon Credits be a source of revenue for municipalities?

[Ramesh Jalan](#), UNIDO - South Asia Regional Office, New Delhi

I have a few comments on the issues raised by [Pramod Dabrase](#):

1. The MSW in Ranchi from the households and commercial institutions, etc., is proposed to be effectively managed based on the city-wide Solid Waste Management plan having been prepared for them. At present the MSW from the above sources is not at all effectively managed.
2. Regarding the Clean Development Mechanism and MSW projects, linkages have been established and two projects coming up in Delhi have even been registered by UNFCCC. These are of Timarpur Okhla Waste Management Co. Ltd. being implemented by Jindal Urban Infrastructure Limited and the other one is of Ghazipur in Delhi being implemented by GMR. Both these projects would be producing power from MSW by segregation of the combustible fraction as RDF and then after combustion of RDF, power will be generated.
3. In order for the OWC system to succeed, segregation at source, particularly at the household level is essential and can be done only through sustained and concerted public awareness campaigns very frequently and for long durations of say even a year and beyond. However, at present in Delhi the organic waste is not segregated at source.

[Harshad Gandhi](#), Excel Industries Limited, Mumbai (response 2)

I thank [Ramesh Jalan](#) for his comments & suggestion about OWC System. Mr Jalan says, "In order for the OWC system to succeed, segregation at source, particularly at the household level is essential and can be done only through sustained and concerted public awareness campaigns

very frequently and for long durations of say even a year and beyond. However, at present in Delhi the organic waste is not segregated at source.”

We agree voluntary segregation is an issue which is difficult merely by motivation. However, all ULBs are finding it extremely difficult to find space for landfills. In additions, some ULBs, e.g. Pune and Mumbai, have made waste segregation mandatory. Once decentralized waste management services using OWC systems are installed by ULBs on their own or through CBO/micro-entrepreneurs, ULBs would hopefully be able to enforce waste segregation rule to reduce the quantity of organic waste going to landfill site, thereby reducing GHG emission at landfill site while providing a livelihood to the urban poor.

The OWC System is evaluated by Environment department of the government of Delhi. If RWAs are willing to take the initiative, the government is willing to consider promoting it under the Bhagidari Scheme. It would be nice if UNIDO can find some role to promote a decentralised waste management strategy. We are sending herewith Project Idea Note (<http://www.solutionexchange-un.net.in/environment/cr/res-25030901.doc>, Word, 400 Kb) to explore stakeholders' participation in the implementation of decentralised waste management strategy.

Harshad Gandhi, Excel Industries Limited, Mumbai (*response 3*) *

I would like to respond to [Pramod](#)'s query. As per IPCC guideline it is estimated that one ton of municipal solid waste based on waste composition in India would emit about 1.16 tCo2e during organic decaying cycle at the landfill site under Business-as-Usual (BAU) scenario. Although, composting process mitigate GHG emissions on completion of accelerated composting cycle & the project can qualify as CDM projects, the methodology provided by Meth Panel & Executive Board of UNFCCC, the Certify Emissions Reduction (CERs) entitlements are issued on CERs calculation following First Order Decay (FOD) method which means organic decaying cycle of over 20 years at the landfill site under BAU scenario in absence of the project activity. Thus although GHG emission is mitigated at the end of accelertaed composting cycle, the CERs revenue accrues over a period of several years.

It is high time that Govt. of India consider budgetary allocation under Carbon Fund to encourage City Solid Waste Composting Activity as CDM Project. 5161 cities in India generates about 40 million ton of municipal solid waste (msw) annually. Of total annual msw generation about 50% is organic in nature which would mitigate potential GHG emission of over 40 millions CO₂ as per IPCC guidelines and also provide about 8 million tons of compost as soil builders to rejuvenate wasteland in India.

If State Urban Administration Dept takes up the matter with Government of India - Ministry of Environment & Forest - CDM Cell as well as Ministry of Finance then we do visualize that MSW Composting Projects can provide economically sustainable waste management solution for improving Urban Environment, alleviate burden of disposal on ULB and increase the life of existing landfill site. We would be very glad to associate with State Urban Administration and Development Department on the subject.

Vijayeswari, The Gandhigram Institute of Rural Health and Family Welfare Trust, Dindigul *

I agree public facilities for water needs to be cared. If Government goes on caring everything what is their ole of the community. Why they are not uniting to keep it safe and maintain. We

should not allow the public to rely always on government they also should share the responsibility.

As for sanitation facilities I have come across many projects that succeed at the time of implementation. After the project is withdrawn it loses its total functioning. It is only such experiences that make me blame the community members.

They should participate to utilize the facilities provided in the real sense of the term. Unless this happens there is no end to our water and sanitation problem.

[Jasveen Jairath](#), Water Sector Professional, Hyderabad (response 3) *

As a representative from the government Pramod can you propose that we begin the process of city sanitation plans by requesting the ULBS to prepare a white paper on the recent history of sanitation infrastructure - money allocated and spent on what structures, performance of those structures leading to current analyses of the problem. This can then become a starting point of planning exercise.

We have requested this from Gwalior ULB on many occasions but silence is the only response. I expect most ULBs will respond in a similar fashion which is not very conducive for an open and transparent dialogue.

This is important because many initiatives in the past have been unaccounted for - without any financial and technical monitoring. Where is the guarantee that all this new effort may also not follow the same path. It is important to restore faith and confidence in our ULBs through an honest and upfront diagnosis of the past.

[Pramod Dabrase](#), Urban Administration and Development Department, Government of Madhya Pradesh, Bhopal (response 3) *

Many thanks for all your responses and interesting inputs. The inputs are of good help in sharpening our planning exercise. The responses received so far mostly highlighted the technological advancements in sanitation sector, need for Ecosan approaches, PPP models in SWM, need for inclusive and integrated approaches and community initiatives and problem of systemic failure.

The discussion however has not been able to touch much upon how cities and towns have been able to develop financially viable sanitation plans and implement them, how the finances were raised to meet the gap and meet O & M costs, etc.

Experiences suggests that Users Charges are the best, most effective and reliable way to meet finances for operation and maintenance of sanitation infrastructure, but depend on levels of services and collection efficiency. Municipalities and the Government do not have funds for creating new infrastructure. In such a situation mix avenues for finance, including raising finance from market, attracting private sector involvement (e.g. PPP in SWM, emptying septic tanks and treatment of fecal sludge, operation and maintenance of the Sewage treatment plants, Maintenance of sewer networks, etc), community contributions, etc seems to be the possibilities. But financial market is not easy for smaller municipalities and therefore it is difficult to raises finances. I would like members to share their experiences on these and related issues, if any.

Further, I would also like to assure the community members that I would be in a position to share initial lessons in this context in about six month period, from the cities where we are preparing city sanitation plans and would implement them subsequently.

**Offline Contributions*

Many thanks to all who contributed to this query!

If you have further information to share on this topic, please send it to Solution Exchange for the Water Community in India at se-wes@solutionexchange-un.net.in with the subject heading "Re: [se-watr] Query: Developing City Sanitation Plans - Experiences; Examples. Additional Reply."

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