City-wide sanitation: the role of planning – SWWW 2016

**CASES**

In 2016 the World Water Week (WWW) brought together leading experts from around the world to discuss and share the latest experiences on planning urban sanitation in two sessions convened by WaterAid, UNDP-SIWI Water Governance Facility, GIZ SuSanA, and the World Bank. The convenors have compiled the different urban sanitation planning interventions, shared during these sessions. These may serve as a guide for practitioners to know what works, where, and how. Additional information and resources of the cases will be found in a link of the implementing organisation for each case.

   C:\Users\andresh\AppData\Local\Microsoft\Windows\Temporary Internet Files\Content.Word\WBG_Horizontal-RGB.JPG 

1. **Case studies summary table:**

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **City/Country** | **Population** | **Context** | **Brief/ Initial situation** | **Approach/ Tools to address situation** | **Drivers** | **Hindrances** | **More**  **Link/contact** |
| Dakar, Senegal | 2.47 million | Informal Settlements/ scaled up to city-wide | With approximately 140 FS[[1]](#footnote-1) Emptying trucks loosely organised into an informal association and numerous informal/manual service providers. There was an urge for improvement of the sanitation service chain (collection, transport, treatment, and re-use), rather than direct improvements on faecal sludge containment. | 1. Situational Analysis. | 1. Strong Institutional clarity. 2. Active private sector 3. Stakeholder involvement. 4. Market-based, self-sustaining mechanisms to drive progress. | 1. Weak political commitment and challenging economic context. 2. Limited financing and human resource capacity. | Pg.5 |
| Dar-es-Salaam, Tanzania | 4.36 million | Urban/ Informal Settlements | Being the 9th fastest growing urban area in the world, urban expansion is unmanaged. The supply of urban lands that is planned and serviced lags far behind the demand for housing and other urban functions. Paired with focus water supply and scarce attention to waste water management. | 1. City Sanitation Planning. | 1. Understanding of the sanitation situation through years of experience. 2. Piloting solutions and using lessons learned to understand most sustainable solutions. 3. Perspective that can be achieved through GIS mapping ability to utilize it to explore dynamics of urban spaces from an aerial perspective. | 1. The utility company has been in a restructuring process for a long time. 2. Many stakeholders involved, slows decision-making. 3. Lack of trained staff. 4. Low willingness to pay for sewerage network. 5. No resources in the municipality to run the treatment plants. | Pg.6  [www.citysanitationplannning.org](http://www.citysanitationplannning.org) |
| Kampala, Uganda | 1.5 million | Schools/  Informal Settlements | With less than 10% of the city connected to the sewerage system, leaving 90% of the population relying on on-site sanitation. This has inevitably affected schools where the pupil to stance ratio for public primary schools sanitation was 1:118, compared to the recommended standard of 1:40. The aim was to increase access to improved sanitation while addressing the entire FS management chain, including emptying, transport and treatment of the faecal sludge. | 1. Stakeholder engagement and resource mobilisation. 2. Baseline assessments. 3. Monitoring and evaluation of progress and functionality. 4. Regulation and enforcement of standards. | 1. Rapid urbanisation (most of which informal). 2. High population growth rates. | 1. Financing mechanisms. 2. Land ownership and space. 3. The wide range of conflicting interests from various stakeholders. 4. Procurement processes. 5. Political interests through aggressive lobbying. | Pg.7  [www.kcca.go.ug](http://www.kcca.go.ug) |
| Khulna, Bangladesh | 1.5 million | Peri-urban/ City-wide/ Informal Settlements | With 40% water supply and 99% basic sanitation access, with on-site technologies and at least 1% without toilets. Khulna City Corporation was the primary service provider of FSM[[2]](#footnote-2) services, lacking management and fleet capacity. Additionally, a community organisation offered vacutug-based emptying. However, manual emptiers with bucket and shovel were carrying out the 80% of the emptying jobs and releasing the sludge in the drains, rivers in the city. | 1. Revision of emptying fees. 2. Introduction of sanitation tax. 3. Developed an integrated information system to track and control monetary transactions and FS volume. 4. OSH and sludge spillage protocol. | 1. Scanty FSM-services that existed in Khulna and the overwhelming demand surrounding it. 2. Enthusiasm for the city and community leadership in introducing city-wide FSM | 1. Change of city leadership. 2. Difficulty to raise service fees for FSM. 3. Lack of relevant expertise in home and abroad about this emerging sector and businesses. 4. Tracking monetary transaction and determining the size of a total market. | Pg.8 |
| Kumasi, Ghana | 1.7 million | Urban/ Informal Settlements | 60% of low-quality public toilet blocks in low-income communities. The access to individual household toilets or shared toilets was low, estimated at approximately 40% of low-income households and a very limited access to sewers consisting on three micro, low-cost sewerage catchments. | 1. Sanitation 21. 2. Clean Team, the business model for household toilets. 3. Design, marketing, Financial analysis, workshops with stakeholders. | 1. The commitment of key individuals by supporting the planning process. 2. A sound understanding by appropriate authorities of the current challenges. 3. The willingness of sanitation authorities to experiment with different approaches. | 1. Weak political commitment and challenging economic context. 2. Limited financing and human resource capacity. | Pg. 9  www.wsup.com/resource/improving-the-quality-of-public-toilets-in-kumasi/ |
| Maputo, Mozambique | 1, 78 million | Peri-urban / Informal Settlements | In 2012, an estimated 62% of the population in urban areas lacked access to improved basic sanitation. The majority of which lived in unplanned peri-urban communities surrounding Maputo. Approximately 90% of household use on-site sanitation and only 8-25% of total faecal waste is safely managed. The diarrheal disease was the third leading cause of death in Maputo, accounting for 10% of all deaths. | 1. MapSan. 2. Sani-path. | N.D. | 1. Understanding the limitations of the Sani-Path Tool in detecting changes due to sanitation interventions. 2. The scale of the response within the city, and the organisation of households into compounds, which required adaptation of the Sani-Path Tool protocols. | Pg. 10  [www.sanipath.org](http://www.sanipath.org) |
| Sawahlunto, Indonesia | 60 thousand | Peri-urban | Being a coal-mining town for over a century, sanitation was not a high priority in the community. Until recently, investment had been on onsite systems and communal septic tanks, with an inadequate desludging program. Latrines frequently discharged waste directly into waterways and the river. | 1. Environmental Health Risk. Assessment. 2. Focus groups. 3. Participatory workshops. | 1. United commitment to improving sanitation for positioning the city as a tourist centre. 2. Faecal contamination of the river flowing through the city (high E.coli levels measured). 3. External donor program for sewerage investment. | 1. Sanitation is viewed as stopping open defecation, leading to a focus on latrines and a household responsibility. 2. Accessing land from traditional owners for sanitation investment. 3. An unstable hilly topography limited technology options. | Pg.11 |
| Visakhapatnam, India | 2.1 million | Informal Settlements | Sanitation was not a priority of the city, beyond investments in sewer sanitation and wastewater treatment which having limited impact amongst the poor. Hence 44% of households –195,000 – are located in the city’s 793 slums. With a big proportion of the population relying upon on-site facilities, poor FSM services and a 7% still, resorts to open defecation. | 1. Sanitation mapping. 2. Smart City Plan. | 1. Water Scarcity: Rapid population growth. 2. Supporting National and State policies. 3. City Leadership. 4. Competitiveness. | 1. Limited geographic and thematic scope. 2. Low non-institutionalised stakeholder participation. 3. Weak monitoring system. 4. Poor coordination between municipal departments. | Pg. 12  www.wateraid.org/ataleofcleancities |
| Vitória, Espírito Santo, Brasil | 1.9 million | City-wide | Espirito Santo has a public state-wide water and sanitation utility, CESAN[[3]](#footnote-3), responsible for providing WSS[[4]](#footnote-4) services to all residents. Sewerage covered only 9% in 1994 and, with the Bank’s support, increased to 60% by 2012, yet 114,000 potential sewerage connections to this existing network had not yet been made by 2014 in RMGV.[[5]](#footnote-5) | N.D. | 1. A motivated state government. 2. Concern regarding the environmental pollution. 3. Planned approach. 4. Monthly targets that could keep pace with the civil works. | 1. Lack of awareness prevented connection to the network. 2. Lack of household funds for undertaking the necessary internal plumbing to allow a connection to be made. | Pg.13  www.wateraid.org/ataleofcleancities |



Dakar, Senegal Organisation: Bill & Melinda Gates Foundation

*“Focus on market-based, self-sustaining mechanisms to drive progress: information and competition can drive down prices”*

Initial Situation: The engagement of the organisation started on 2011 with a goal to support the ONAS[[6]](#footnote-6) to improve FSM[[7]](#footnote-7) sanitation service chain in two poor neighbourhoods of the city (Pikine and Guediwaye). However, the intervention was scaled up through the city. The responsibility for providing FSM services rested clearly with ONAS. ONAS had institutional clarity but poor enforcement encouraging illegal dumping. Furthermore, the existing infrastructure for sanitation consisted on 3 FSTP[[8]](#footnote-8), (drying beds) owned and operated by ONAS and located within the city. The FSTP received roughly 400 sludge dumps per week and had a very limited re-use of treated faecal sludge.

A detailed situation analysis was conducted in advanced of the intervention. Revealing the critical segments of the Faecal Sludge Value chain that required support starting by the service providers. The latter consisted of approximately 140 faecal sludge-emptying trucks, which were loosely organised into an informal association and numerous informal-numerous service providers. There was also a poor information flow between households and service providers because households had to search for providers. Furthermore, service providers did not have access to finance and could not invest in equipment to upgrade and improve their practices. Therefore the organisation acted as a fund provider but also acted as a convener, bringing together the different key stakeholders: service providers, consultants, researchers, governmental institutions, etc.

**The city sanitation plan consisted on:**

* Strengthening the enforcement capacity through an improved legal framework and incentives for compliance, formalising the association of service providers, and the association used for self-enforcement.
* Changing the FSTP operating structure from owned and operated by ONAS to owned by ONAS and outsourcing operation to the private contractor.
* Development and implementation of a call centre, as an information sharing mechanism to reduce search costs and generate competition, creating a spot market and auctions to allocate jobs efficiently.
* Development and implementation of a loan guarantee fund specifically for sanitation service providers.

**The progress made:**

There was a 50% increase in the volume of sludge received by the FSTP, increasing the revenue generation by USD 25,000 per year, including the increased revenue from the sale of treated FS for agriculture. The price in emptying reduced in 10% enabling more people to access the service and avoid manual emptying and illegal dumping. The operators purchased fourteen-second hand trucks through loans.

Dar es Salaam, Tanzania Organisation: Bremen Overseas Research and Development Association (BORDA)

*“Main challenges to translate learning’s from GIS/city sanitation planning into real action”.*

Initial Situation: Dar-es-Salaam is ranked the 9th fastest growing urban area in the world. The population is estimated at 4.36 million with a projected addition of 226,000 new urban dwellers per year. Various sources predict annual population growth rates ranging from 4.39% to 8%. Urban expansion (outward growth of cities) is unmanaged. The supply of urban lands that is planned (properly laid out with a street network) and serviced (with water supply, drainage and other infrastructure) lags far behind the demand for housing and other urban functions. Thus, housing comes up in a haphazard manner; provision of services becomes a complex challenge. Despite the main focus from relevant authorities is water supply little attention is paid to the management of the increasing amount of water used (increased health impacts such as malaria, dengue, etc.). The most important part of the planning exercise what the analysis of the existing situation. Analyses guided by understanding that rapid urban growth requires two parallel courses of action, with strong policy on the prioritisation of implementation strategies:

* Broad development plans with comprehensive guiding principals and application strategies.
* Flexible and incremental implementation solutions that provide immediate benefits.

The city sanitation plan consisted on:

A website “citysanitationplannning.org” was created in response to the need for a simple, fast and flexible tool for determining “which sanitation solutions go where”. This tool is a GIS[[9]](#footnote-9) developed as a part of cooperation between BORDA, DAWASA[[10]](#footnote-10) DAWASCO[[11]](#footnote-11) and Hamburg Wasser uses selected demographic, physical and economic characteristics for systematically assessing the demand-supply gap for sanitation. The tool identifies opportunities for decentralised interventions and groups them into typologies that can be addressed in similar ways. The tools used included remote sensing, database creation and analysis, stakeholder consultations and schematic engineering design for pilot projects. Institutional and policy analysis were also crucial elements in formulating the pragmatic approach for sanitation project implementation. The tool is also meant to support immediate decision-making.

The progress made:

A combined integrated and decentralised sanitation service, which provided quick solutions and many advantages, including the following:

* Quick implementation: by facilitating the mobilisation of local financial and in kind resources.
* Low-cost construction: Using locally available materials and local workforce.
* Low-tech solutions: Requiring little or no outside energy input.
* Localised management of wastewater and solid waste: no need for extensive infrastructure or mechanisms to transport contents long distances to the point of disposal.

Kampala City, Uganda Organisation: Kampala Capital City Authority (KCCA)

*“Investment in public primary school sanitation can accelerate access to improved sanitation in vulnerable urban poor communities.“*

Kampala is the capital city of Uganda, with a resident population of 1.5 million estimated to almost double during the day. Over 60% of the city population lives in informal settlements characterised by unplanned infrastructure and inadequate access to key social services, including sanitation. Less than 10% of the city is sewered, leaving over 90% of the population relying on on-site sanitation, most of which is unimproved (simple unlined pits). The most vulnerable population concerning poor sanitation services are children living in informal settlements who also dominate the public primary schools of Kampala City since they offer education free of any charges. Consequently, over the past five years, KCCA in collaboration with development partners focussed on increasing access to improved sanitation in public primary schools, which mainly serve the urban poor. When KCCA started this programme in 2012, the pupil to stance ratio for public primary school sanitation was 1:118 compared to the recommended standard of 1:40. This since turned around to a current ratio (2016) of 1:53. It is envisaged that by 2017, the 1:40 target will be achieved.

Since the main challenges Kampala is facing come from the fact that most developments were (and still are) informal and unplanned, KCCA puts an increasing emphasis on city planning approaches. With regard to the different sectors, there are varying approaches and processes; in terms of sanitation, the Kampala Water and Sanitation Master Plan is the primary planning instrument for larger sanitation developments. Overall, the plan is to increase access to improved sanitation, especially for the urban poor. While the responsibility of National Water and Sewerage Corporation is water supply and the sewerage system, KCCA is mandated with all on-site sanitation issues and hence, the urban poor mainly fall under their responsibility. Planning is more than simply following a written and agreed-upon strategy or plan, it has a lot to do with stakeholder coordination and constant prioritisation.

**The city sanitation plan consisted on:**

KCCA established the KWSF[[12]](#footnote-12) in 2012. The KWSF has been established to streamline the coordination of stakeholders in order to develop an integrated WASH[[13]](#footnote-13) approach for the city. Through collaborative exploration of prevailing challenges and identification and efficient allocation of available resources, opportunities for synergies and learning networks are being enhanced. The prioritisation to focus on public primary schools and their sanitation improvement first was born out of this forum. The programme was hence prioritised for all public primary schools of Kampala, aiming at improving their access to improved sanitation while addressing the entire faecal sludge management chain, including emptying, transport and treatment of the faecal sludge. The rationale for this approach included:

* Increasing access to safe and improved sanitation and hygiene to vulnerable children from the urban poor communities.
* Enhancing behavioural change regarding WASH in communities by working with children as change agents.

**The progress made:** Using school sanitation projects as hotspots for demonstrating sustainable technological solutions and best practices, which can be scaled up in communities, institutions and households on a citywide scale.

Khulna, Bangladesh Organisation: Netherlands Development (SNV)

*“Government support through policies to introduce pro-poor sanitation and scaling up the sludge treatment from existing 2% to 100.”*

Khulna is a city of 1.5m people, with 40% water supply and 99% basic sanitation access. The vast majority of adopted sanitation technology is on-site, mostly comes with septic tanks but few with soak wells. Households without a toilet are numbered at less than 1%. At the start of the project in early 2014, KCC[[14]](#footnote-14) was the primary service provider of FSM services, lacking both management and fleet capacity with two old vehicles that often remained non-functional and needed repair. Another service provider in Khulna was CDC[[15]](#footnote-15), a community organisation who was offering vacutug-based emptying services with a fleet of three 1000 litre capacity vacutugs donated by UNDP[[16]](#footnote-16) in selected wards but the management was severely suffering from lack of business acumen. The overwhelming 80% of the emptying jobs were being carried out by manual emptiers with bucket and shovel, posing serious risks of community health and environmental pollution through hazardous disposal and spillage at the emptying site. All of these emptiers were releasing the sludge in the drains, rivers and the ditches in the city.

**The city sanitation plan consisted on:**

Planning and capacity development went hand in hand. The project started its planning during the formulation phase in 2013 when the partners and key stakeholders were involved in discussion about the major project components and year-round activities. This included workshops and an exchange visit. It was followed the preparation of first of its kind city-wide baseline on FSM[[17]](#footnote-17) services after the inception of the project and the introduction of GIS-based planning and information system shortly after. The city councillors play a significant role in city-wide sanitation solution and introduction of service and business modelling which has been traditionally priced at much below the cost of offering the services. Since councillors are involved in a range of social as well as income generating activities, it is a challenge to block sufficient time from them. To respond to this, the project arranged a special distant location workshop with 41 city councillors of KCC and the mayor and key staff at the health and conservancy team to update and plan FSM-related activities in Khulna including FS collection and transportation, public toilet operation, councillors' support in awareness campaigns and other activities.

**The progress made:**

SNV-managed FSM programme ran a city-wide campaign on safe desludging (November 2014 and November 2015) with the direct involvement of the city mayor to promote mechanised services. This was followed by the publication of a vacutug manual and training drivers to reduce accidents and repairs (December 2015). Digging of trenches for sludge disposal and support for construction of a new sludge treatment plant to treat sludge produced by the city population was held between March 2014 and April 2016.

In January 2015, a first of its kind Occupational Safety and Health manual for emptiers and training to the emptiers initiated. From August 2016 forward support was given for future licensing of independent emptiers to control both sludge management and contribute to decent payment for independent emptiers, which was endorsed by KCC. This demonstrated block desludging to plan and manage emptying demand in a locality through ward-level local campaign (September 2015, May 2016). A partnership between KCC and CDC owned vacutugs (September 2015) and construction of a mobile sludge transfer station (July 2016). Finally, the most recent intervention was initiated in November 2015 were the GIS-based city sanitation mapping and integrated information system (July 2016) for city-wide planning and FSM control. Paired with the introduction and collection of sanitation related taxes and tariffs, 250,000 additional people (approx. 57,000 households) will have access to improved sanitation facilities (environmentally safe); 1 million people (approx. 240,000 households) will have an improved living environment and access to FSM services.

Kumasi, Ghana Organisation: Water and Sanitation for Urban Poor (WSUP)

*“Designing and implementing a strategy for improving access to toilets in households.“*

The City of Kumasi had a prolific presence and high usage (60%) of low-quality PLBs[[18]](#footnote-18) in low-income communities. With a low access to individual household toilets or shared (compound) toilets, estimated at approximately 40% of low-income households. The city had very limited access to sewers with three micro, low-cost sewerage catchments. A planning exercise (Referring to the Compound Sanitation Strategy) was crucial to help get all those involved brought into the future vision. There was an existing annual plan in place named MESSAP.[[19]](#footnote-19) However, it was too broad in its scope. The Compound Sanitation Strategy essentially puts into operation and provides details on implementation for one aspect of the MESSAP – household toilets. Most interventions were citywide, with local ‘testing’ / piloting, and then scaling up across the city.

**The city sanitation plan consisted on:**

* Mapping, inspection and scoring of public toilets.
* Introduction and implementation of a compound sanitation strategy.
* Training vacuum tanker operators on improved services.
* Strengthening the financing of faecal sludge treatment.

All interventions included or focused particularly on low-income households, with the compound sanitation including consideration for vulnerable populations. While the interventions spanned the sanitation service chain, these were based on priorities identified within the MESSAP, but without any particularly detailed operational plan put in place except for the Compound Sanitation Strategy.

**The progress made:**

WSUP supported the KMA[[20]](#footnote-20) preparing a framework for Adopting Sanitation 21 planning process, linked to the existing MESSAPs planning process, mapping and financial analysis of PBLs to support cost recovery fees in 2011. Followed by trailing new designs and management frameworks for PLBs in 2012. On 2013 a business model for household toilets named Clean Team was introduced (Container based sanitation). In the following years, support was given to KMA and PPIAF in designing investment packages and frameworks for PBL. Trailing and scaling up KPI´s scoring and awards for PLBs. In 2014 the preparations started to launch a compound sanitation strategy. A year later vacuum tanker operators were trained on improved services paired y supporting KMA in increasing and ring-fencing a dumping fee to cover operational costs. Finally in 2016 KMA was able to rehabilitate the faecal sludge treatment site.

Maputo, Mozambique Organisation: Centre for Global Safe WASH at Emory University

*“The SaniPath work in Maputo can help us understand the applications of tools for monitoring and evaluation.”*

Maputo, Mozambique is a rapidly urbanising city on the south-east coast of Africa. It is estimated that by 2050, two-thirds of Mozambique's population growth will be in urban areas. In 2012, an estimated 62% of the population in urban areas lacked access to improved basic sanitation resulting diarrheal disease and high infant mortality. The majority of urban residents who lack access to basic sanitation live in unplanned peri-urban communities surrounding Maputo. Approximately 90% of household use on-site sanitation and between 8-25% of total faecal waste is safely managed. Additionally, a 2001 WHO report showed that diarrheal disease was the third leading cause of death in Maputo, accounting for 10% of all deaths. The Mozambican government has included improvement of urban sanitation as a goal in their poverty reduction strategy. Additionally, the Maputo Municipal Council (CMM) has included sanitation improvement in their decentralisation plan to improve basic services in peri-urban areas.

**The city sanitation plan consisted on:**

The SaniPath Tool was deployed alongside an on-going study called the MapSan Study in Maputo, Mozambique. The MapSan study is a controlled, before-and-after trial to estimate the health impacts of a shared latrine interventions in Chamanculo, an informal neighbourhood in Maputo, Mozambique. The intervention led by the World Bank's Water and Sanitation Program and Water and Sanitation for the Urban Poor consists of a planned 31 communal sanitation blocks and 159 shared latrines to be constructed across 11 neighbourhoods that meet certain criteria (e.g. susceptibility to flooding, relative poverty, important water and sanitation infrastructure access, etc.). The anticipated number of people to be served by the Community Sanitation Blocks is between 3000 - 4000 and is 3000 – 5100 by the Shared Latrines. The SaniPath Tool was used before and after the latrine intervention to assess changes in exposure to faecal contamination- focused specifically on the shared latrine interventions in a sub-set of compounds receiving the intervention. The intervention consisted of the construction of private pour-flush latrines with septic tanks that were intended to be shared by multiple households in compounds or household clusters. A successful program in these neighbourhoods could serve as a model for further decentralised sanitation solutions in Maputo City by WSUP or the municipality.

**The progress made:**

The results of the pre/post-intervention SaniPath Tool results in Maputo could be used in conjunction with results from the MapSan study to improve upon the WSUP intervention or plan for future, similar, interventions. Furthermore, results from the SaniPath Tool from different environmental exposure pathways could help influence city-wide sanitation plans by highlighting potential dominant pathways of exposures (i.e. open drains vs. shared latrines vs. drinking water, etc.). This can be of particular influence in planning sanitation programs in low-resource areas of the city. The tool was used before and after the latrine intervention to assess changes in exposure to faecal contamination. The pre-intervention assessment occurred in March-April 2015. The post-intervention assessment took place in May 2016. SaniPath in Maputo differed from a traditional SaniPath deployment in several key ways. We adapted the SaniPath tool for our collaboration with the Mapsan study to help answer the question of "Will improved shared latrines reduce exposure to faecal contamination in the environment within low-income urban neighbourhoods?" Since the Sanipath Tool is designed for assessment at the neighbourhood level, we also adapted the data collection for the primary unit of analysis to be the compound level.

Sawahlunto, Indonesia Organisation: Institute for Sustainable Futures

*"An output-based aid program is catalysing the local government to take responsibility for sanitation services rather* than passing on that responsibility to households and communities”

Sawahlunto was a coal-mining town for over a century until the industry was shut down in 2013, leading to an economic downturn. The local government and local parliament have been on a united mission to turn the city's mining history into tourism asset to re-invent the city. Sanitation has historically not been a high priority in the community. However, the local government signed up to the national PPSP[[21]](#footnote-21) Programme to develop a comprehensive multi-year CSS[[22]](#footnote-22) under a common national sanitation-planning framework. Gaining access to sanitation funds was the local government's primary driver when this was undertaken (2012-2013). The sanitation working group meets regularly to strategies and monitor progress towards reducing open defecation. The local government is now investing in a small sewerage network not part of the CSS. The local government has now decided and committed budget to re-visit the planning exercises and revise their CSS to guide strategic investment, instead of the ad hoc process they have followed in practice.

**The city sanitation plan consisted on:**

The formal CSS development process is designed to lead to a citywide sanitation strategy. It involves undertaking an extensive Environmental Health Risk Assessment, and preparation of a Context Analysis (‘White Book') to prioritise sanitation investment for the areas of highest risk. The CSS wasn't implemented as such, but the sanitation-working group and health department appear to work at a village/ward level to address open defecation. Until recently, investment has been on on-site systems and communal septic tanks, and it is unlikely there is a strong dislodging program to address the sanitation service chain. Latrines frequently discharged waste directly into waterways and the river. The CSS included a plan to construct 2000 household toilets for the poor. A ‘1000 toilets' program was implemented but ran into some difficulties. It is unclear how inclusive the sanitation programs are in practice.

**The progress made:**

The plan mainly focussed on household level sanitation (with LG investment in faecal sludge management) and limited community-managed communal facilities. The LG has committed to an aid-assisted program to build and operate a 350-connection sewerage system in the town centre, which was not in the CSS. The LG has recognised the value of better planning for better investment, hence the decision to revise and use their CSS instead of ad hoc planning.

Visakhapatnam, India Organisation: WaterAid

*“Historically, resources for sanitation in Visakhapatnam were directed towards sewerage and wastewater treatment to address water scarcity; efforts to reach the poor were far from the scale."*

Once a small fishing village, today Visakhapatnam has a population of 2.1 million and is the financial capital of the state of Andhra Pradesh, India. 44% of households –195,000 – are located in the city's 793 slums. Traditionally, sanitation was not a priority of the city, beyond investments in sewered sanitation and wastewater treatment. The large proportion of the population relies on on-site facilities and does not receive adequate faecal sludge management services. National poverty reduction programmes including a sanitation component helped meet some of the sanitation needs in the rapidly expanding slums, but last surveys show 7% of the population still resort to open defecation. With the launch of the Swatch Bharat Mission to eradicate open defecation and clean up public places, 2014 marked a turning point. Sanitation has been considerably raised in the political agenda. Earlier relevant efforts were focused on sewered sanitation and had limited impact on the poor. There were though a series of pro-poor interventions that included sanitation and helped slum dwellers access urban sanitation.

**The city sanitation plan consisted on:**

An ambitious strategy to eliminate open defecation was developed and is being rolled out, resulting in increased attention to faecal sludge management. The current period foresees a much greater focus on pro-poor interventions that included sanitation and helped dwellers access urban sanitation. The ambitious ODF aims the city set for itself, and the ward-by-ward approach it has adopted, leads to efforts in all income areas, regardless of whether they have ‘notified slum' or ‘non-notified slum' status. Andhra Pradesh's strong support of the Swachh Bharat Mission makes it possible for the city to subsidise construction of households and community toilets at substantial levels. Also, on-going sanitation mapping efforts shall strengthen decision-making processes and help channel resources to where needs are greatest. The last 7% is being targeted through the Swachh Bharat Mission and 16,000 household toilets have been constructed, covering 12 wards (out of 72 wards) as a result.

**The progress made:**

The city was named in 2016 as the third cleanest city in India and one of the most improved. Rather than from city-wide sanitation planning exercises, the development of sanitation in Visakhapatnam has mostly resulted from efforts embedded in state and national programmes with limited geographic and thematic scope. This was the case with the Jawaharlal Nehru National Urban Renewal Mission and Andhra Pradesh Urban Services for the Poor programme (APUSP) in the past, and also with the more recent Swachh Bharat Mission, focussed primarily on open defecation. However, in the framework of a broader Smart City Plan, wider sanitation planning efforts are underway in 2016

Vitória, Brazil Organisation: World Bank

“*Build sewers and they will come*’ does not work as an approach to citywide urban sanitation, especially in cities where there are high numbers of informal settlements and poor households.”

Vitoria is the capital city of Espírito Santo State, in Southeast Brazil. The MRGV[[23]](#footnote-23) has a population of 1.9 million divided between five municipalities, representing 48% of the state’s total population. Espírito Santo has a public statewide water and sanitation utility, CESAN[[24]](#footnote-24), responsible for providing WSS[[25]](#footnote-25) services to all of the 1.9 million residents of MRGV. The organisation has been engaged with CESAN, through the State Government of Espírito Santo, for over twenty years, during which time it has implemented a series of investment programs totalling US$220 million; and still, has a US$225 million investment operation under implementation with CESAN. These programs have supported and continue to support, the utility over this period on working towards universal water supply coverage and universal sanitation, as well as on the utility's overall efficiency improvement. Sewerage coverage in RMGV[[26]](#footnote-26) was at only 9% in 1994.

**The city sanitation plan consisted on:**

114,000 potential sewerage connections to this existing network had not yet been made in 2014 in RMGV23 (with 356,000 connections having been made to the network). To reverse this situation and connect the 114k potential customers, CESAN launched a pro-connection campaign in 2012 called ‘Se Liga na Rede’ *(*Get Linked to the Network). Between 2012 and 2014, the State Government provided CESAN with a subsidy (by exempting them from paying taxes on their energy bill) of about R$43 million (US$14 million) to subsidise sewer connections for low-income households. CESAN does not charge for the household to get connected – so the connection costs are related to the reconfiguration of the internal plumbing that needs to be done at the household level. The subsidy was used to finance the Se Liga na Rede program, which made 90,000 new connections to existing sewerage networks between 2012 and 2014. In 2015, although the subsidy from the state government was no longer available, CESAN continued its campaign efforts and was able to make an additional 40,500 connections.

**The progress made:**

Many lessons were learnt, and adaptations made to the program throughout its implementation:

* Charging households for a sewerage service if a sewer was already laid in their street initially proved to be a disincentive for getting households to connect.
* Between 2012 and 2014 when the subsidy was in place, CESAN managed two contractors: one for civil works and another for social mobilisation and design of the internal household changes. Since 2015 CESAN has only done the social mobilisation and each household has had to finance its own costs.
* CESAN works directly with municipalities to advance/promote connections since it is the municipalities who can fine households for non-compliance with environmental regulations if they do not connect to the available sewerage services. The municipalities send letters to the households (targeting those of middle and high income) informing them that they are infringing on the environment and could potentially be subject to fines if they do not connect.
* With the Bank's support, the sewerage system increased to 60% by 2012. However, coverage does not equal wastewater collection! Therefore, since 2015 the World Bank has also been supporting CESAN, through a US$225 million investment operation, with the construction of new wastewater treatment plants and operational efficiency improvements of existing plants, not only one. Hence it is not a centralised system.

1. Faecal Sludge. [↑](#footnote-ref-1)
2. Faecal Sludge Management. [↑](#footnote-ref-2)
3. Companhia Espírito Santense de Saneamento. [↑](#footnote-ref-3)
4. Water and Sanitation Service Chain. [↑](#footnote-ref-4)
5. Region of Greater Vitoria. [↑](#footnote-ref-5)
6. 6 National Sanitation Office. [↑](#footnote-ref-6)
7. Faecal Sludge Management. [↑](#footnote-ref-7)
8. Faecal Sludge Treatment Plant. [↑](#footnote-ref-8)
9. 9 Geographic Information System. [↑](#footnote-ref-9)
10. 10 Dar es Salaam Water and Sewerage Authority. [↑](#footnote-ref-10)
11. 11Dar es Salaam Water and Sewerage Corporation. [↑](#footnote-ref-11)
12. Kampala Water and Sanitation Forum. [↑](#footnote-ref-12)
13. Water, Sanitation and Hygiene. [↑](#footnote-ref-13)
14. Khulna City Corporation. [↑](#footnote-ref-14)
15. Community Development Committees. [↑](#footnote-ref-15)
16. United Nations Development program. [↑](#footnote-ref-16)
17. Faecal Sludge Management. [↑](#footnote-ref-17)
18. Public Toilet Blocks. [↑](#footnote-ref-18)
19. Municipal Environmental Sanitation Strategic Action Plan. [↑](#footnote-ref-19)
20. Kumasi Metropolitan Authority. [↑](#footnote-ref-20)
21. Settlement Sanitation Development Acceleration Program. [↑](#footnote-ref-21)
22. City Sanitation Strategy. [↑](#footnote-ref-22)
23. Metropolitan Region of Greater Vitoria. [↑](#footnote-ref-23)
24. Companhia Espírito Santense de Saneamento. [↑](#footnote-ref-24)
25. Water Supply and Sanitation. [↑](#footnote-ref-25)
26. [↑](#footnote-ref-26)