

A tale of clean cities: Insights for planning urban sanitation from Visakhapatnam, India



Key learning points

- . Until 2014, most resources for sanitation in Visakhapatnam were directed towards sewerage and wastewater treatment to address water scarcity, while efforts to extend access to the poor – part of national or state-level poverty reduction programmes – remained far from the scale of the challenges.
- . Since 2014, the national missions ‘Swachh Bharat’ and ‘Smart Cities’ have boosted resources and political support for sanitation, leading to progress on faecal sludge management and roll out of an ambitious strategy to make the city open defecation-free, with a strong pro-poor orientation.
- . The leadership of the Municipal Commissioner, timely support from development partners, an enabling environment and wide stakeholder participation are key ingredients of the rapid success of the city.
- . Progress in sanitation has been guided by national programmes rather than by planning exercises. City sanitation planning efforts are underway in 2016, framed in a broader Smart City Plan.

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Research project

This case study is part of a research project by Partnerships in Practice for WaterAid to learn from sanitation planning processes of cities in developing countries that are making good progress in provision of sanitation services to all. The team focused on key drivers affecting progress, the role external agencies played in supporting this process, and the extent to which slums were included and the most vulnerable affected.

San Fernando in the Philippines, Visakhapatnam in India, and Kumasi in Ghana were studied. The specific insights captured in this report are also integrated in a broader synthesis report combining the case study learning with findings from literature and conversations with urban WASH experts. The three case studies and the synthesis report are available at www.wateraid.org/ATaleOfCleanCities.

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Front image: Ramakrishna beach, Visakhapatnam. Credit: Ravikiran Rao.

Summary

Once a small fishing village, 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 in the city's 793 slums, representing the highest rate in India.

Traditionally, sanitation was not a priority of the city, beyond investments in sewerage sanitation and wastewater treatment as a way to promote wastewater reuse for industry and respond to a perennial state of water scarcity. However, connection to the sewer network and use of existing treatment facilities are areas of concern. Moreover, a 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 need in the rapidly expanding slums, but 7% of the population still resort to open defecation.

With the launch of the Swachh Bharat Mission to eradicate open defecation and clean up public places and the wider Smart Cities Mission, 2014 marked a turning point in this trajectory. Sanitation has been considerably raised in the political agenda, an ambitious strategy to eliminate open defecation was developed and is being rolled out, and increased attention is being paid to faecal sludge management.

Beyond the missions, the leadership of the Municipal Commissioner – in a period devoid of political interference – has been crucial in this process. Timely donor-supported technical assistance has increased the Visakhapatnam's capacity to capitalise on this opportunity.

The city is reaping the fruits of this major push over the past two years, being named in 2016 as the third cleanest city in India and one of the most improved, which is contributing to maintaining the momentum for scaling up these successes. Progress has so far not been the result of thorough planning exercises, but the city is now preparing a city-wide sanitation plan as part of their Smart City Plan.

1. Context

With a population of 2.1 million – expected to double by 2030¹ – and an area of 567 km², Visakhapatnam is the largest city and financial capital of Andhra Pradesh. Once a small fishing village, then a municipality under the British Empire, the ‘Jewel of the East Coast’ became a municipal corporation in 1979, to finally emerge as Greater Visakhapatnam Municipal Corporation (GVMC) in 2005. In 2014, the bifurcation of Andhra Pradesh into Telangana and the residuary Andhra Pradesh state positioned Visakhapatnam as one of the biggest cities and growth corridors of the state.

Nestled between the Eastern Ghats mountain range and the Bay of Bengal, the port of Visakhapatnam is the only natural harbour on the east Indian coast. Its shipyard is the oldest in the country and the port is now the fifth busiest in terms of cargo handled. Visakhapatnam's economy is the tenth largest among Indian cities, with a GDP of US\$26 Billion.² It is the principal commercial hub of Andhra Pradesh, and contributes to its economy in many sectors such as heavy industries, tourism, industrial minerals, fishing, and information technology.

The geographical expansion of the city has been mainly driven by the development of economic activities. Urban planning has responded by adjusting to a rapidly evolving context. Irregular settlements mushroom rapidly,^a and notably on hill slopes where space remains available, if precarious. The city has the highest proportion of slum households (44%) in the country,³ totalling 195,000. Open defecation is practised by an estimated 15% of these.¹

Visakhapatnam faces new challenges as it expands. The last merger with two neighbouring towns was beset by a series of politico-administrative hitches, and urban local body elections have been on hold for more than two years as a result. With 5.3 million people, the Visakhapatnam Metropolitan Region is now the ninth most populous in India.⁴

Water scarcity is becoming an acute concern – water resources are not readily accessible locally and, under the twin pressures of economic and demographic growth, Visakhapatnam has to mobilise extra water resources, improve its supply and allocation across users, and enhance the levels of treatment and reuse. Cyclones are another major challenge. The high level of urbanisation and high density of the natural drainage system, the functionality of which is altered by dumped solid waste, make Visakhapatnam highly vulnerable to extreme precipitation events. Flooding is frequent, and public health risks increase in slum areas where improved sanitation facilities are lacking. The GVMC is headed by a commissioner with ten departments that deliver different social services. The departments of Public Health and Engineering are responsible for sanitation provision.

This report analyses the progress achieved on sanitation in the city since the 1980s. It describes how the historical preference of authorities for a sewered approach to sanitation has had limited impact on low-income communities, who still depend on very deficient faecal sludge management (FSM) services. Much emphasis is put on

^a The 2011 Census revealed a 352% expansion of slums since 2001.

the recent dynamic that the Swachh Bharat (Clean India) Mission has triggered, whereby authorities have committed to make the city open defecation-free by October 2016.

The findings presented draw from a review of the and from a set of site visits and interviews with key informants (Annexes 1 and 2) in March 2016. A stakeholder feedback meeting organised on the last day of the country visit allowed validating and refining of the preliminary findings.

2. Sanitation progress and gap areas

2.1. Current status of sanitation services

a) Preliminary observations

Service coverage, levels of service, and the progress achieved in the past two decades are heterogeneous within Visakhapatnam and vary significantly across the city centre, the newly merged municipalities and rural areas. This study mainly focuses on progress in the urban and peri-urban areas without drawing detailed comparisons across areas. Sanitation services span the whole waste management cycle and include solid waste management, liquid sanitation and drainage. Particular emphasis is put on liquid sanitation. The statistics presented, often approximate, mostly originate from conversations with GVMC officials or from the recent sanitation assessment by USAID.¹ Ongoing sanitation mapping efforts are expected to yield a detailed and comprehensive description of services in the near future.

b) On-site sanitation – household toilets

More than 8% of the population of Visakhapatnam lack access to toilets, with around 30,000 households reporting some practice of open defecation. This occurs mostly in 62 open defecation spots located near notified slums and non-notified slums.^b 32% of the population is connected to the sewer system, and 60% of households either have on-site facilities (septic tanks and pit latrines) or use illegal connections to open channels.¹

^b A 'notified' slum is an area officially designated as a 'slum' by State, Union Territory Administration, or local government. A 'non-notified' slum may fall into two categories: 'recognised' or 'identified', the former being similar to a notified area without the formality of notification, and the latter being a compact area of at least 60–70 households of poorly built tenements in an unhygienic environment, usually with inadequate infrastructure and lacking proper sanitary and drinking water facilities.³



Completed toilet built with Government subsidies.

Until 2014, progress in the coverage of household toilets in low-income areas resulted from the implementation of national and state pro-poor sanitation programmes, which have had limited impact on reducing open defecation. The national Swachh Bharat (Clean India) Mission and Smart Cities Mission^c have fostered a very different dynamic in the city since 2014. Declaring its ambition to become open defecation-free (ODF) by October 2016, the GVMC has implemented a vigorous strategy towards this goal. With support from the Water and Sanitation for the Urban Poor (WSUP) Advisory Cell, 16,000 household toilets have been constructed in compliance with standards in 12 wards. Complementary efforts have been made for community and public toilets. A ward-by-ward approach is being followed to strike a balance between the need to have rapid impact at scale and the need for quality and sustainability. The GVMC is aiming to make the entire city and its 72 wards ODF by October 2016.

This unprecedented push is intended to mitigate some of the significant disparities in service coverage and levels of service between the core and periphery of the city. Also, the GVMC and WSUP have noted the need to improve the standard design of toilets by adding basic features to meet the needs of people with disabilities and the elderly population.

c) On-site sanitation – community and public toilets

About 200 community and public toilets totalling 3,000 seats can be found in Visakhapatnam. Sulabh International^d manages 75% of these pay-per-use toilets under a delegated management model, and the remaining 25% are operated by community self-help groups. Marked contrasts in the levels of services provided in

^c Swachh Bharat Mission (Urban) is a national campaign covering 4,041 statutory cities and towns. It aims to clean the country and eradicate open defecation by 2019. Smart Cities Mission is an urban renewal and retrofitting programme by the Government of India with a mission to develop 100 cities to be citizen-friendly and sustainable.

^d Sulabh International is a social service organisation that promotes, among other things, environmental sanitation and waste management. With 50,000 volunteers, Sulabh is the largest non-profit organisation in India.

these toilets can be found between the low-end facilities in low-income neighbourhoods and high-end facilities in busy areas. The assessment by USAID in 2015¹ highlighted the poor maintenance and state of disrepair of most of these public and community toilets, noting the absence of performance criteria in the management agreements between the GVMC and Sulabh.



Visit of GVMC Commissioner and public health and sanitation staff to public toilets (E-toilets on the left, Sulabh toilet complex on the right).

Exchanges with the manager of WSUP Advisory Cell highlighted the recent efforts of the authorities to improve the level of these services – 85% of these toilets have been rehabilitated, new technologies (the E-toilets and the Bio-toilets^e) have been introduced, and work is done to ensure the design and management models of these public and community toilets are appropriate for local contexts. An estimated 1,000 seats are still needed to meet the needs of the population.

d) On-site sanitation – transport, treatment, reuse



Early-bird visit of GVMC Commissioner and GVMC staff monitoring the construction of a household toilet.

^e Bio-toilets convert human excreta into usable water and methane through a bacteriological degradation process.

Despite an increase from 23% to 32% in the proportion of households connected to the sewer system between 2011 and 2015, most of the transport of the excreta produced in the city needs to be done by truck. Officially, manual pit emptying (or manual scavenging) has been eradicated from the city, but there are no independent data to substantiate or disprove these claims. On-site facilities are emptied and serviced by a local septic tank-emptiers' association, which operates 20,000 litre capacity vacuum trucks. There are no records of service data, such as houses serviced, or number or size of tanks emptied.¹ Faecal sludge is disposed of in open drains, farmers' fields, or other convenient locations across the city.¹ Negotiations between the GVMC and the septic tank-emptiers' association explored the possibility of dumping faecal sludge in the sewage treatment plants, but the capacity of such facilities to co-treat faecal sludge and sewerage is questioned.¹ According to an informant, the lack of adequate disposal facilities and the fact that operators are only allowed to work at night are the reasons behind unsafe disposal. The septic tank-emptiers' association is not regulated by the GVMC or Andhra Pradesh Pollution Control Board but, reportedly, undertakes relatively strong self-regulation. New approaches and tools being introduced by the GVMC –which comprise a GPS-based monitoring system enabling the tracking of vacuum (and water supply) and a detailed sanitation map – are seen as an opportunity for greater accountability.

e) Off-site sanitation

Historically the city has favoured sewered sanitation services. Accordingly, much of the investment in the sector in the past two decades supported expansion of the sewer network^f and construction of sewage treatment plants. Compared with other cities in Andhra Pradesh and the rest of the country,⁹ the result is relatively good coverage of the sewer network – the GVMC reports that 32% of households are connected to it¹ – as well as high capacities and effectiveness of treatment.

The city is divided into 20 sewerage blocks, which are being developed in a phased manner, expanding westward from the city centre (see Annex 3). The GVMC aims to reach universal service coverage and increase the treatment capacity to 620 million litres per day (MLD) by 2044.¹ This effort is already well underway – the overall treatment capacity of the three sewage treatment plants in place, currently in the range of 106 MLD, will double after the commissioning of a new 108 MLD mega treatment plant. These facilities, vastly underused so far, only receive 65 MLD of the 244 MLD of sewerage that the city generates; the rest is typically discharged into open drains. Their functionality is affected by infrastructure failure and maintenance issues.¹

^f Now consisting of 317km of mainline pipes and 250 km of household service connections.

⁹ As per the census 2011, at country level, there is no drainage facility in 48.9% of households, and 33% of households have only an open drainage system.³



Juan Carlos Rodriguez, USAID

Sewage treatment plant in Visakhapatnam.

Wastewater reuse projects have been successful, in the past. A small fraction of the treated wastewater is reused as grey water by various industries, including the port and the golf course. Agricultural reuse of deactivated faecal sludge is also reported,¹ but the prevalence of this practice is unknown. 2015 saw the formalisation of a very ambitious design–build–finance–operate–transfer agreement between the GVMC and Visakha Water Reclamation Infrastructure Private Limited for a concession period of 26 years to produce tertiary treated wastewater for industrial reuse. Combining ultra- and nano-filtration processes, a new 63 MLD plant will convert secondary treated sewage supplied by the GVMC into high-quality water for industries, such as the port, steel and petrochemical industries, and the railways.⁵ This US\$25M public–private partnership (PPP) is a technological and institutional innovation at national level. It illustrates the capacity of the city to respond to an increased demand and escalating competition between water users in a context where mobilising extra water resources is expensive.

However, the under-use of the existing treatment facilities is a cause for concern, particularly given the lack of tangible strategy to ensure the progressive connection of all septic tanks to the sewer network, as legally mandated. It is a common practice to connect household sewer lines to open drainage channels instead of sewer main lines. Given the connection fee and subsequent monthly sewerage charges, there is minimal incentive for poor households to connect to the network in the absence of an enforcement mechanism.¹ Ongoing mapping efforts, which shall locate defaulters accurately, is a first step in addressing this issue systematically.

f) Solid waste management

Around 900 tons of solid waste is generated daily in Visakhapatnam, half of which originates from industries. The primary challenge for the city is to collect this waste and dispose of it safely. According to a local journalist and environmental activist of Visakhapatnam, solid waste collection has historically been poor and erratic, except

for a short period of time a few years ago when it was promoted by the authorities.

Informants concur that the situation has improved lately, and that the city looks very clean. Service provision is more regular and homogenous geographically. The rationalisation of waste collection and investments in workforce (sweepers) and tools and equipment (bins, collecting tanks or transfer stations, compactors) have already enabled the city to reach and sustain a record 91% collection rate for several months. Public awareness of the importance of solid waste management has increased, and attitudes are changing as the population gradually senses that this progress can last. More effective monitoring and sanctions are playing a key role too, for example the GVMC implemented a ban on plastic thinner than 40 micron and achieved a litter-free beach road.

Comparatively, very little progress has been witnessed in waste disposal and treatment. The 880 tons of waste collected daily are currently discharged in a 40 hectare dumping site in Kapuluppada, north of the city. This low-tech dumping site is 70% filled, and its phasing-out is planned – in 2016 the GVMC signed a PPP agreement for implementation of a 15 MW waste-to-energy plant. The authorities' exclusive focus on energy production has seemingly led to disregard of value generation approaches based on waste segregation.

g) Drainage

Visakhapatnam does not have a separate underground storm water drainage system, relying instead on a network of open drains. As noted, the connection of households to open storm drains is a rampant problem. A visual inspection of open channels in any part of the city shows contaminated wastewater and clogging from solid waste. Many storm water drains have been encroached on by new illegal settlements, causing 'narrowing' of the original channel,¹ increasing the likelihood of flooding, and the associated public health risks.

In October 2014, Visakhapatnam and neighbouring districts were hit by Hudhud cyclone, which caused extensive damage estimated at US\$3.4 billion. Several informants stressed how effective authorities have been in recovering the functionality of the drainage system following the devastation.

2.2. Steps towards city-wide sanitation

Since the 1980s, efforts to improve pro-poor sanitation services have been more or less directly supported by a series of pro-poor interventions.^h Collectively, these state and national programmes have aimed to enhance the access of low-income

^h This includes: the Urban Community Development Programme (1979), UNICEF's Mother and Child Welfare (1982-85), DFID-funded Slum Improvement Project (1988–1996). From 2000 onwards, DFID-funded Andhra Pradesh Urban Services for the Poor programme (APUSP, 2001–2008) and the Government programme Jawaharlal Nehru National Urban Renewal Mission (JNNURM, 2005 onwards) have promoted inclusive and sustainable urban growth with a focus on slum dwellers and the urban poor. The recent Rajiv Awas Yojana pro-poor housing initiative (2013–2014), and the Mission for Eradication of Poverty in Municipal Areas (MEPMA), which has been strengthening women's self-help groups and community-based organisations since 2007, are worth mentioning too.

communities to household, community and public toilets, attempting to help the city cope with a rapid growth of slum areas. However, historically local sanitation-related efforts have focused on developing centralised sanitation systems. The expansion of the sewer network and development of the wastewater treatment capacity is likely to benefit an increasing share of the population in the years to come. But the outcome of these capital intensive sanitation projects has remained quite limited so far for a good part of the population, including low-income communities, who have kept depending on very deficient faecal sludge management services.

2014 marked a turning point, as Prime Minister Modi launched the Swachh Bharat Mission to eradicate open defecation, build toilets and clean up public places. The issue of sanitation was considerably raised on the political agenda. The launch of the Smart Cities Mission in 2015 reinforced this dynamic, further stimulating the development of urban sanitation services. In Visakhapatnam, this period has seen a major push on all fronts – the emergence of a vision, strategy and comprehensive plan to address gaps in service delivery and bottlenecks in the enabling environment (e.g. monitoring, institutional capacities), as well as to increase public awareness and foster behaviour change. The progress in the past couple of years marks an unprecedented acceleration in Government actions to develop city-wide sanitation services.

2.3. Unpacking success

a) Celebrating progress

Visakhapatnam is becoming an inspiration for Indian cities. In January 2016, as part of the Swachh Bharat Mission, Visakhapatnam received two awards – it ranked fifth (moving up from 39th in 2015) in the survey commissioned for 73 cities by the Ministry of Urban Development, and emerged among the top ten that have substantially improved their rank, and the only one from South India. Besides the city of Surat, Visakhapatnam is the only city to have ranked in the top ten in both the Smart Cities and Swachh Bharat rankings. This achievement is particularly outstanding given that the Smart Cities survey conducted in 2014 ranked Visakhapatnam 235th biggest of 476 cities with a population over 100,000. According to the chief commissioner of Visakhapatnam: “It’s the same manpower then and now. The results have been achieved by motivation, planning, mobilisation and execution.”⁶

Smart Cities rankings not only reflect improvements in the quality of services provided to citizens (e.g. transportation, water supply, sanitation with a focus on solid waste management, energy supply, housing, and safety), but also the relevance of the vision and the quality of the strategies developed as part of this challenge. The participatory nature of these visioning processes is also rated – i.e. the extent to which citizens are involved in shaping the vision and goals, the relevance and effectiveness of the engagement strategy and means of engagement, and the incorporation of citizen inputs in overall vision.

b) Introducing stakeholder engagement processes

Under the Smart Cities competition, Visakhapatnam obtained the maximum score for planning the strategy to achieve ODF status and integrated solid waste management. This outcome reflects both the relevance of the strategy and the quality of the stakeholder engagement processes involved in its development. Several informants concurred that the recent attention paid by the authorities on participatory planning is rather novel. For example, the Smart Cities competition pushed the GVMC to undertake a vast public consultation, followed by planning and implementation stages involving a much wider range of stakeholders than usual. Also the ODF strategy builds upon participatory processes, and the sanitation mapping exercise initiated by the city is highly participatory; it is expected to result in more robust outputs while allowing engagement with stakeholders who will play a key role in sustaining behaviour change.

The engagement of existing community structures such as resident welfare associations, self-help groups, and slum-level federations also stands out.ⁱ Efforts were made to build the capacities of these groups, who actively supported community mobilisation in urban poverty pockets. The GVMC understood that engaging such stakeholders from needs assessment onwards is critical to meet its ODF target. It is perhaps rare to see authorities implement such participatory processes where pressure to deliver very quickly usually discourages stakeholder engagement.

The current progress on sanitation across the city thus results from an unprecedented level of participation, which nonetheless remains fragile and might be difficult to sustain (see section 3.2.b).

c) Pro-poor approaches and inclusive progress

Visakhapatnam has the highest rate of slum dwellers in India, and sanitation in slum areas is a perennial challenge due to land tenure issues related to encroachment on vacant areas. As noted, the poverty reduction programmes of the past decades helped the authorities progressively increase access to sanitation in slums as they were rapidly expanding. But sanitation for the poor was never a focus area, as exemplified by the absence of individual toilets in the houses built by the GVMC in Indiranagar slum.¹ Conversations with several officials even suggest that the project proposals prepared by the GVMC following the Smart City guidelines put relatively little emphasis on slum development.

However, the current period foresees a much greater focus on pro-poor sanitation. The ambitious ODF aim the city set for itself, and the ward-by-ward approach it has adopted, leads to efforts in all low-income areas, regardless of whether they have 'notified slum' or 'non-notified slum' status.^j Andhra Pradesh's strong support of the

ⁱ GVMC includes 22,810 self-help groups organised in 883 slum-level federations.

^j Urban Management Centre is currently leading sanitation mapping efforts to help the GVMC become ODF.

Swachh Bharat Mission makes it possible for the city to subsidise construction of household and community toilets at substantial levels.^k Also, ongoing sanitation mapping efforts shall strengthen decision-making processes and help channel resources to where needs are greatest. The development of a strategy to improve faecal sludge management reflects the authorities' willingness to tackle the toughest aspects of urban sanitation, which is very likely to benefit the poor.

The work by the GVMC to put in place management models for community toilets tailored to each context, and the attention paid to inclusive toilets design, are yet more signs of the city's current efforts to meet the needs of the urban poor. However, stark gender discrepancies have been noted in the access to community toilets^{l,1} which will certainly require additional efforts to address.

3. Driving factors

3.1. Success factors

a) Water scarcity: a key driver

Water scarcity has been a perennial problem in the city. With a rapidly growing population heavily relying on groundwater abstraction and urbanisation reducing groundwater recharge, Visakhapatnam has witnessed the depletion of groundwater levels and the intrusion of saline water. Despite the availability of several major reservoirs, water shortages are frequent in summer.

The city supplies 64 million gallons per day of water against an estimated demand of 85. This deficit is chronic, and is in context of rising industrial demand, which can be partly satisfied through the provision of lower grade water. Such circumstances constitute an economic reason for authorities to invest in a sewer network and treatment plants enabling significant flows of sewerage to be treated and reused. The prospect for water reuse at a significant scale suggested by a series of small projects is now fully confirmed by the recently signed PPP project, which will see a tertiary treatment plant supply up to 16 million gallons per day to industries.

b) National and state policies and programmes

The Swachh Bharat Mission and Smart Cities Mission have been pivotal in accelerating progress since 2014, and both are enjoying a high level of political support. According to several informants, Swachh Bharat is well resourced and

^j 286 of the 793 slums are notified slums. Failure of the authorities to update this list as slums upgrade and new slums appear has been an obstacle to effective pro-poor targeting.

^k Government assistance for an individual household toilet is Rs 15,000 (4,000 from the Government and 11,000 from the Government of Andhra Pradesh). Assistance for a community toilet is Rs. 65,000 per seat (26,000 from the Government and 39,000 from the Government of Andhra Pradesh). Public toilets are privately funded.

^l GVMC data show a disproportionate number of community toilet facilities for men, including the new eToilets that are exclusively for males. Stakeholder interviews revealed that women do not regularly use community toilets, except to deposit used menstrual hygiene products, because of safety concerns or lack of cleanliness.¹

provides states and cities with significant support to implement high-impact interventions focused on eradicating open defecation and fostering a clean city. The Smart Cities Mission rewards merit and provides significant financial support to help the 20 top-scoring cities concretise their ambitions. The 20 cities selected in the second stage of competition are provided with central assistance of US\$30 million each, followed by \$15 million per year during the next three years. Additional funds come from the states, urban bodies and the consortium they form with corporate entities. 10% of budget allocation will be given to states as an incentive based on achievement of reforms during the previous year.

Both programmes represent valuable opportunities for decision makers at state and city levels to demonstrate their leadership. Receiving a high ranking helps gain visibility and attracts investors, as performance on such challenges implies a certain quality of governance and good engagement of the population. Both initiatives contribute to heightened public awareness of sanitation issues and favour stakeholder engagement.

c) Political and administrative enabling factors

2014 saw the bifurcation of the state of Andhra Pradesh into Telangana and the residuary Andhra Pradesh state.^m This territorial reorganisation positioned Visakhapatnam as one of the biggest cities and growth corridors of Andhra Pradesh. Supporting the growth and prosperity of the city and making it a more autonomous metropolis have since become strategic objectives for the state. In this context, state authorities have seen the Swachh Bharat and Smart Cities programmes as good opportunities to promote Visakhapatnam as a model city regarding sanitation services and as a metropolis capable of forging an ambitious future.

Visakhapatnam receives much political support from the state. An alliance between political parties ensures the state's unwavering support of the national flagship programmes. In support of Swachh Bharat Mission, the Swachha Andhra Corporation was established to achieve ODF status in all urban areas by October 2019, and the recently launched Smart Village - Smart Ward programme includes a sanitation component.

Historically Andhra Pradesh has been a pioneer state on urban WASH and city-wide sanitation planning, and its excellent track record has influenced USAID in selecting Visakhapatnam to pilot a new method of technical support to Indian cities on sanitation (i.e. the so-called 'WSUPⁿ Advisory Cell' – see section 3.4). The Chief Minister, Sri. Nara Chandrababu Naidu, has long championed sanitation and has instructed the city commissioner to engage in an ambitious ODF campaign, supporting the city with unusually high financial backing to complement subsidies from the Government of India (see section 2.4.c)

^m Hyderabad was established as the capital of Telangana and Amavarati, located in the vicinity of Vijayawada, is expected to become the new capital of Andhra Pradesh.

ⁿ Water and Sanitation for the Urban Poor.

The geographic expansion of the city in the past decade brings a series of challenges and opportunities. In 2005, the Municipal Corporation of Visakhapatnam, then spanning 111 km², merged with the adjoining Gajuwaka municipality and 32 villages, creating a 533 km² Visakhapatnam. In 2013, a new merger with Anakapalle and Bheemili municipalities expanded the area of Visakhapatnam to 620 km². The broader administrative jurisdiction of Visakhapatnam implies new obligations and challenges regarding the delivery of sanitation services, and the disparities in sanitation services between the core of the city and the periphery will need to be addressed.

Yet, potential economies of scale can also be expected. In the short term, political consequences are felt, both positive and negative. The last merger, opposed by Anakapalle and Bheemili, has been beset by a series of politico-administrative hitches, slowing down the integration process. As a result, urban local body elections have been on hold for more than two years in Visakhapatnam, potentially depriving the city of politicians championing sanitation. On the positive side, these circumstances have enabled the GVMC to foster a powerful dynamic around sanitation in a context virtually free of local political interference.

d) City leadership

The Municipal Commissioner, Sri Pravin Kumar, is the chief of the GVMC administration. A sanitation champion, he has an impressive technical understanding of the city's current sanitation needs.¹ According to WSUP representatives, his capacity to listen and learn about state-of-the-art sanitation approaches from the WSUP Sanitation Advisory Cell and other stakeholders has enabled the development of a strong strategy to meet the ODF target. Sanitation interventions typically focus on infrastructure provision at the expense of software components,^o which are time-consuming but fundamental to the sustainability of services. In this case, the Municipal Commissioner has accepted a trade-off between the need to achieve impact at scale very quickly and the importance of ensuring quality and sustainability through often lengthy processes.

The Municipal Commissioner is putting much emphasis on empowering mid-level city officials and field workers through mobilisation and training activities. Many informants concur that his leadership, which also manifests in a strong commitment and very active support to the various phases of the work, is a source of inspiration for city officials. For instance, his daily early-bird visits across the city reflect a willingness to learn from the field, show support to stakeholders, and ensure effective implementation, notably by keeping contractors and officials on their toes.

e) A competitive municipal corporation

Under this leadership, Visakhapatnam has performed better than other Indian cities in cleanliness and sanitation rankings. Its Clean City ranking as part of the Swachh Bharat Mission improved from 39th to 5th in one year. The city also behaves

^o e.g. stakeholder engagement, training, awareness raising, behaviour change, work on management models, etc.

opportunistically, for example in hosting the Partnership Summit and the International Fleet Review in January and February 2016, it further polished and showcased its performance as a top-ranking Clean City and Smart City. This capacity to capitalise on success is paying off – several informants noted that the population feels more pride for their city, sanitation-related activities have gained popularity, and the connection between being a clean city and harvesting economic opportunities has been highlighted. This suggests that the confidence and the vision held by people in authority are permeating throughout the city.

The competitiveness of the city has been manifest in the capacity of the GVMC to plan, mobilise resources, and implement work to perform on all Smart Cities indicators in record time, as noted by a representative of WSUP. The work on the sanitation component was not handled as a tick-box exercise to comply with formal requirements of the competition, but rather coincided with ongoing efforts, such as the development of the ODF strategy with the WSUP Advisory Cell. This made the participation in the competition especially meaningful.

The success achieved on the Smart Cities Mission has raised the ambition of Visakhapatnam and is fuelling a dynamic – the new goal is to be one of the top three cleanest cities in India. The financial support granted to Visakhapatnam as a result of its performance on the Smart Cities Mission provides the city with the means to achieve its ambition, and to transform the Smart City ‘homework’ into a much more ambitious development plan.

Sanitation efforts are now reframed in the Smart City Plan, which is supported by increased capacities for planning and fundraising. Authorities are putting a lot of effort into strengthening local capacities and ensuring a clear distribution of roles and responsibilities, as well as the operationalisation of objectives for each department and official. This leads to greater buy-in and convergence of efforts among various line departments within the GVMC.

Funds are spent in a way that enables stakeholders to fulfil their duties. For instance, regarding solid waste collection, communication campaigns have been implemented to raise public awareness, and equipment (e.g. bins, collection tanks, and compactors) procured to ensure that users and sanitary workers keep the city clean. Law enforcement appears to be more effective, and according to several informants the fines and penalties applied to citizens and officials are effective deterrents.

3.2. Hindrances

a) Institutional hindrances

The mandate for sanitation is fragmented across a number of departments. The wealth of information accumulated over the years on sanitation schemes is dispersed in different pockets of the GVMC.¹ Coordination mechanisms are lacking: Solid Waste Management, Underground Drainage, (Surface) Drainage, and Public Health departments tend to address their own facets of sanitation separately, supported by the Planning and Projects departments. Although the Urban

Community Development Department is the leading agency for slum improvement projects, it appears to be insufficiently engaged in sanitation efforts.

Improved coordination, strengthened capacities and commitment across key departments will be critical to lead the city to sustainable ODF status. Sanitation champions need to emerge from these departments to fuel the momentum. Such champions may also arise from the next elections among politicians, but it is important that the administration keeps demonstrating a strong resolve to achieve its objectives. The ideal circumstances that Visakhapatnam has recently enjoyed – from powerful support from the state to an inspired Municipal Commissioner achieving in a city free of political fights – might not last forever.

Another important institutional obstacle to developing sanitation services relates to the constrained capacity of the GVMC to step back and learn critically from its interventions. Several senior officials thus underscored how their agenda focused on action leaves little time for joint reflection. Such learning is crucial given the complexity of developing sanitation services citywide. Tailored pro-poor or poor-inclusive approaches have to be tested and refined for a complex mix of formal and informal spaces⁷ which are often changing at a rapid rate.⁸

b) Stakeholder engagement

The capacity to scale-up and sustain this success will depend on the capacity of the GVMC to further engage stakeholders. The participatory nature of many processes related to sanitation and Smart Cities Mission work is commendable and unprecedented in Visakhapatnam; such processes need to be tailored to the city and institutionalised. Local NGOs have a role to play, but their capacities in urban WASH are generally low¹; the GVMC has not sought to engage them significantly so far, and there have been no efforts to nurture them, help them acquire the necessary expertise, or to provide them with opportunities to be more of a legitimate interface with slum communities, who often consider them outsiders. Also, the development of a monitoring system tracking progress on community capacity, ownership and engagement would help UCDD and the other departments focus their efforts where needed and build on the success of model neighbourhoods and the sharing of the experience of high-performing community groups.

c) Monitoring

Improvement of sanitation-related monitoring systems is critical. As noted, ongoing mapping efforts are expected to yield a much-needed comprehensive and detailed picture of services, analysing levels of access, functionality and use, and gaps etc. thus providing a robust baseline. The capacity of sanitation champions (whether officials or politicians) and the relevance of sanitation planning will partly hinge on the capacity of the GVMC to build on this baseline and establish the monitoring processes and tools needed to maintain a detailed and up-to-date profile of its sanitation services.

3.3. The influence of city sanitation planning

The past 50 years have seen successive efforts towards a systematic development of Visakhapatnam. In 1970, an Initial Development Plan, carried out as part of the General Town Planning Scheme, promoted balanced physical and social development across different parts of the city. In 1989, the growing economic activity and demographic growth fuelled by the mega steel plant and ancillary units pushed Vishakhapatnam Urban Development Authority to develop a master plan, which was revised in 2004 with greater emphasis on sustainable and equitable development.

In 2005, a city development plan was prepared under the Government programme Jawaharlal Nehru National Urban Renewal Mission. It focused on basic service delivery and citywide slum upgrading. Through the National Urban Sanitation Policy (NUSP), each state must develop a State Sanitation Strategy, and cities are tasked with creating a City Sanitation Plan. In 2014, the Dutch Royal Haskoning group was commissioned by the Ministry of Housing, Urban Development and Poverty Alleviation to prepare a city sanitation plan covering all of Visakhapatnam.⁹ This project, affected by the considerable shock caused by the Hudhud cyclone in October 2014, did not progress as expected.

So far, much of the development of sanitation has resulted from planning efforts embedded in national flagship programmes, such as Jawaharlal Nehru National Urban Renewal Mission, Andhra Pradesh Urban Services for the Poor programme, or Swachh Bharat Mission. The performance on the Smart Cities contest has allowed Visakhapatnam to increase its planning capacities, and city sanitation planning is thus being reframed in the broader Smart City Plan. The outputs of the city sanitation planning process, in combination with the sanitation strategy design with the support of the WSUP Advisory Cell, are likely to provide very helpful guidance to the city for the next ten years at least.

3.4. The contribution of development partners

Visakhapatnam's sanitation development trajectory has been supported by many partnerships involving various national, bilateral, and multilateral organisations. This section focuses on the contribution that such partners made in the recent acceleration of progress, and notably in relation to sanitation planning efforts. From this perspective, the partnerships forged between Visakhapatnam and USAID are very relevant.

USAID previously made investments to support Visakhapatnam's urban development, and provided financial and technical support to the city in the aftermath of the 2014 Hudhud cyclone. The sanitation assessment carried out in early 2015 by Tetrattech, with support from WSUP and USAID funding, came in response to the signing of a memorandum of understanding (MoU) between USAID, the Bill & Melinda Gates Foundation, and the national Ministry of Urban Development to advance the Swachh Bharat Mission.

In this MoU, USAID plans to:

- i) Assist the Government in the exchange of knowledge and identification and sharing of best practices.
- ii) Provide targeted, demand-driven technical assistance.
- iii) Promote PPPs, notably in the context of public and community toilets, by helping establish an enabling environment for such institutional set ups.¹⁰

The MoU specifies that the technical assistance component shall focus on Visakhapatnam.^P The WSUP Advisory Cell is the instrument put in place to achieve this objective, and its support to the GVMC is planned to last three years, ending in May 2018. After less than one year of activity, the contribution of the WSUP Advisory Cell is already significant – WSUP supported the preparation of Visakhapatnam’s Swachh Bharat agenda, and notably the development of a draft behaviour change communication strategy and ODF strategy. It helped the city form a sanitation task force to monitor the deliverables and gave much impetus to the training of officials at various levels.

The WSUP Advisory Cell brings considerable urban WASH expertise through a structure well embedded in the GVMC. The team operates as part of the administration, yet it can tap into local knowledge and coordinate technical inputs from national and international sources. It represents a key learning instrument – a valuable asset when considering the observation by senior officials that their time is fully spent in action, leaving hardly any space for learning and sharing.

In February 2016, the United States Trade and Development Agency signed an MoU with India’s Department of Municipal Administration to bring support to Visakhapatnam on the Smart Cities Mission. As part of this, a consortium of three US companies (IBM, KPMG and AECOM) have partnered with the city to prepare a master plan. Synergies have already been created and are likely to expand between the support provided by USAID on Swachh Bharat through WSUP and on Smart Cities through this consortium.

Thanks to these very timely partnerships, Visakhapatnam can leverage a rich pool of skillsets and significant national, state and bilateral financial resources to boost its development and become the model sanitation city it aspires to be.

^P USAID aims to provide a broad spectrum of technical support to demonstrate a fully functional sanitation system encompassing containment, collection, transport, treatment, reuse and safe disposal of faecal waste in the city.

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Annexes

1. Key informants

Mr Yuvaraj, District Collector, Visakhapatnam.

Mr Praveen Kumar, Commissioner, GVMC.

GVS Murthy, Additional Commissioner (General Administration), GVMC.

Mr Mohan Rao, Additional Commissioner (Projects), GVMC.

D Venkataratnam, Chief City planner, GVMC.

Prof. Balaprasad, Professor of Environmental Engineering, AU College of Engineering, Andhra University.

K Rammohan Rao, Executive Engineer, UGD, GVMC.

SS Varma, Additional Commissioner (Finance), GVMC.

D Srinivas, Project Director, UCDD.

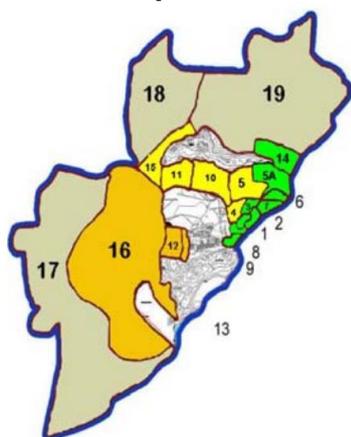
Uday Singh Gautam, City Project Manager, WSUP.

Pramod Dabrase, Training and Capacity Building Manager, WSUP.

2. Meetings and workshops

Date	Process	Remarks
14/03/2016	Meeting of IBM, KPMG and AECOM on benchmarking as part of preparation of city master plan	Participated in multi-stakeholder meeting
15/03/2016	Visited Division IV and Durgapuarmlum slum	Along with the commissioner GVMC
15/03/2016	Sanitation mapping workshop of USAID and WSUP	Participated in the meeting attended by officials
16/03/2016	Organised consultation with select NGOs	Attended by eight NGOs
17/03/2016	Organised stakeholder consultation meeting	Attended by 26 participants, including officials and NGOs

3. Visakhapatnam sanitation blocks¹



Legend	Status	Sanitation Blocks Covered
	Completed	1, 2, 3, 5A, 6, 7, 8, 9, 14
	In progress under the Jawaharlal Nehru National Urban Renewal Mission (JNNURM)	4, 5, 10, 11, 15
	Designs submitted	12, 13, 16
	Designs under preparation	17, 18, 19