

A tale of clean cities:

Insights for planning urban sanitation from
Ghana, India and the Philippines

Synthesis report



Front cover image: A view of the Safeda Basti slum, New Delhi, India.
Photo credit: WaterAid/ Adam Ferguson



Ricardo Manfuga Jr., ICFE

The Fishermen's Village in San Fernando, the Philippines, where Ecosan toilets are used.

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The research also includes:

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

A tale of clean cities: insights for planning urban sanitation from San Fernando, La Union, the Philippines.

A tale of clean cities: insights for planning urban sanitation from Kumasi, Ghana.

All the publications can be accessed at www.wateraid.org/ataleofcleancities

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Vacuum tankers providing sanitation services in Ghana.

Executive summary

Uncontrolled urbanisation and proliferation of slums makes development of urban sanitation a big challenge. To contribute to the efforts towards the Sustainable Development Goal (SDG) target of universal access to sanitation, the research *A tale of clean cities* aimed to learn from three cities that are performing well in sanitation: Kumasi, Ghana; San Fernando, the Philippines; and Visakhapatnam, India.

Findings showed substantial but uneven progress along segments of the sanitation chain, and that the urban poor and those who live in challenging areas are being left behind. Common drivers of progress were: sanitation champions at the municipal level; national political influence; economic considerations; and support from development partners. Progress resulted from emerging opportunities; city sanitation planning was not a key determinant.

However, planning exercises did make meaningful contributions, such as forging an aspirational vision of a clean city. These positive contributions were diverse, dependent on the level of development of sanitation in the city. The research suggests this development could be structured into three phases: piloting; consolidation; and city-wide expansion. Approaches to city sanitation planning could be tailored to these phases and to political opportunities to maximise their contribution.

On the basis of lessons learned, recommendations for development agents aiming to contribute to city-wide sanitation progress are to:

1. Nurture sanitation champions at the municipal level.
2. Influence national governments to improve financing and benchmark cities' performances.
3. Provide technical support for innovation, technical capacity building, monitoring, and learning.
4. Provide financial support that leverages further investments and catalyses change.
5. Be prepared to seize opportunities for change as they arise.
6. Contribute to building a wide-ranging platform for collaboration.
7. Promote city-wide political narratives that highlight universal access, ensuring inclusion of poor people.

Recommendations for city planners and others involved in city sanitation planning are to:

8. Promote local ownership of city sanitation planning, linking it to funding opportunities and budgeting processes.
9. Think of city sanitation planning as a process with many functions, including developing a common aspirational vision for the city.
10. Adapt their approach to planning to the city's phase of sanitation development and to political opportunities for change.
11. Approach city sanitation planning as an iterative learning process, with a long-term vision and a short-term actionable strategy that is regularly renewed.

1. Introduction

1.1 The urban sanitation crisis

More than half of the world's population lives in cities. Current urbanisation is unprecedented in scale and nature – many developing countries, most notably in Africa and South Asia, which have been rural for millennia are due to tip into becoming largely urban in the near future. And this growth is largely in informal settlements or slums.¹ One major challenge cities face that affects the public health of their entire populations, and indeed the world's epidemiological security, is the provision of water and sanitation services for the poorest households and slums. Sanitation services are especially patchy, in existence and standard, in most developing country cities, with large disparities between high-income and low-income areas. According to official figures, 82% of the world's urban population have access to improved sanitation, and 11% have access to shared sanitation.² But these statistics fail to

count many of the marginalised and itinerant communities in our 'slumising' world, and still less represent the dire conditions faced by many people living on the edge of survival. In addition, these numbers do not reflect the situation along the sanitation chain of services,³ – that is, all that happens (or rather doesn't happen) after 'business' is done: containment, emptying, transport, treatment, and disposal or reuse of wastewater or faecal sludge.

With urban population growth outpacing extension of sanitation services worldwide, urban sanitation emerges as a key challenge in the pathway towards the Sustainable Development Goals' (SDGs') Sanitation target of Universal Access by 2030. In the dynamic and complex environments that cities in developing countries represent, governments and development partners alike are grappling with how to deliver city-wide sanitation services that are sustainable and include poor people.



Vacuum tankers providing sanitation services in Ghana.



Jacques-Edouard Thibertien

Sanitation mapping in Visakhapatnam, India, to identify specific issues and open defecation hot-spots.

1.2 Planning urban sanitation

Since the 1980s, bilateral and multilateral development agencies and research institutions have been developing different urban sanitation planning strategies and approaches (see Annex 1 for a full account of approaches¹), following changes in planning theory and practice.

During the 1980s and 1990s the approaches promoted by international development agencies stressed the importance of planning through demand-responsive and participatory processes, and the adoption of appropriate technologies. The guidance developed in the past 20 years underscores the need to understand and improve the enabling environment (notably to ensure better cooperation among stakeholders and boost their engagement in service delivery), and to envision sanitation planning as an iterative, ongoing process.

Recent research⁴ identifies four theoretical traditions.

1. The rational comprehensive theory, in which the planner is seen as an objective expert who needs to choose between options using rational criteria based on facts, and come up with a comprehensive plan.
2. The pragmatic theory, in which the planner is seen as a leader or facilitator, acting on ideas that make sense and helping others to act; options are assessed drawing on experience and intuition, finding compromises and getting things done, even if in a patchwork-plan way.
3. The collaborative theory, in which the planner is a moderator seeking agreement through dialogue between the different stakeholders; interpersonal dialogue and mutual learning should lead to a consensus for action.
4. The advocacy tradition, inspired by principles of social justice, in which focus is on defending the interests of the less powerful in a normative debate that results in several plans rather than a single one.

¹ Available at www.wateraid.org/ataleofcleancitiesannexes

Research⁴ suggests that the rational comprehensive planning approach is the most common, blended with aspects of collaborative planning.

Although city sanitation planning is viewed as crucial, the process does not always effectively contribute to progress towards better service delivery. Actually, evidence suggests that what happens on the ground is often not informed by the sanitation plan.^{4,5,6}

And beyond these analytical dimensions, the main problem is the low priority given to urban sanitation, particularly when it comes to meeting the needs and rights of marginalised and excluded people. In most developing countries, citizens' demand for sanitation services is weak, and politicians tend to prioritise other, more visible sectors.⁴ Moreover, governments still regard sanitation as a household responsibility, or one that can be covered through international aid.



Feedback meeting with San Fernando officials and water board.

Ricardo Marfaga Jr., ICLEI

As a result, sanitation planning is often driven by donors or by national governments, treated as a tick-box exercise with little buy-in and commitment at local level.^{4,5} The resulting plans are rarely owned by the city departments in charge of sanitation. There is often no formal mechanism for linking city sanitation plans to city master plansⁱⁱ or to budget planning. Financing is typically structured by national governments rather than disbursed directly to cities. Previous research

found that the absence of budgetary manoeuvre reduces the interest in 'owned' planning activities or in setting a city-wide strategy.⁷

The inherent complexity and difficulty of delivering urban sanitation also plays a part in the lack of effectiveness of planning and policy responses, and reinforces the small appetite for addressing it. Rapidly urbanising and changing cities,⁷ with high rates of growth in unplanned and informal settlements,⁸ make extremely complex ecosystems. Different approaches are needed to suit the characteristics of different neighbourhoods.⁹ Many stakeholders with potentially conflicting interests will be affected by the plan, and participation may not be enough to address the power imbalances involved.

Sanitation is also a multifaceted issue, where the mandates for delivering services are generally fragmented across several city departments, creating competing interests and coordination challenges and affecting capacity to plan for sanitation delivery systems. Plans often end up being prepared by (external) sanitation experts with no expertise in urban planning, or by urban planners who do not focus on sanitation issues or may lack the knowledge to do so. Experts tend to create excessively sophisticated plans that do not reflect the local reality and constraints. This is related to a lack of understanding of the context and some of the power imbalances in the urban domain.⁴ Technocratic solutions often promote technical approaches and underplay the political economy factors, with the result that plans do not get sufficient traction within the institutions they target. This would help explain and address, for instance, the common bias towards development of sewerage sanitation systems, which only benefit a small, wealthy part of the urban population,¹⁰ while most residents rely on on-site sanitation operating within a regulatory void for faecal sludge management.

ⁱⁱ The city master plan provides a long-range vision for the built environment of a community. It guides the appropriate use of lands within a municipality in order to protect public health and safety and to promote general welfare.

1.3 The research

Urban sanitation is one of the crucial challenges of the SDG era. Looking at existing approaches and experiences of planning urban sanitation, it seems that the sanitation sector needs first to figure out how best to plan and deliver city-wide sanitation services.

This research sought to contribute to filling this knowledge gap by learning from successful experiences. Instead of using sanitation planning as an entry point, we approached the topic from a more open perspective, asking ‘What can we learn from cities in developing countries that are making good progress?’, and then looking into the contribution that sanitation planning exercises made to this progress.

Initial desk-based research entailed the review of 64 articles and semi-structured conversations with 12 key urban sanitation experts. Combined with input from an advisory group – a team of experts who provided multi-disciplinary insights and guidance throughout the research – this work helped design of the analytical framework and identification of three case study cities: San Fernando, the Philippines; Visakhapatnam, India; and Kumasi, Ghana. These cities presented complementary profiles and had been successful in expanding access to sanitation across the city and in improving sanitation services along the sanitation service chain. Field research took place in March and April 2016, involving field visits, more than 50 key informant interviews, and stakeholder feedback meetings to validate preliminary findings. The three resulting case study reports can be accessed at www.wateraid.org/ataleofcleancities. This synthesis report is the result of a final phase of integration of the findings from both processes. See Annex 2ⁱⁱⁱ for greater detail of the methodology.

Section 2 provides an overview of each of the case studies, section 3 draws together the findings, and section 4 provides some final reflections and recommendations.

To summarise, the aim of the research was to identify key lessons from the experiences of cities in developing countries that are progressing in the provision of sanitation services for all. This involved:

- i. Exploring the context of these cities and understanding the drivers and the enabling and disabling factors that shaped progress in the delivery of sanitation services, paying special attention to the inclusion of poor neighbourhoods and slums.
- ii. Analysing the influence of sanitation planning exercises and the role of external agencies and NGOs in these processes.



Toilet built under the Swachh Bharat Mission in Visakhapatnam, India.

Jacques-Edouard Tiberghien

ⁱⁱⁱ Available at www.wateraid.org/ataleofcleancitiesannexes

2. Case studies

2.1 Visakhapatnam, India



Context

With a population of 2.1 million – expected to double by 2030¹¹ – Visakhapatnam is the largest city in Andhra Pradesh since the state split and Telangana was created in 2014. With 793 slums it has proportionately the highest rate (44%) of slum population in India. The city's economy is the tenth largest in the country, and its port has become the fifth busiest in terms of cargo handled.

32% of the population is connected to the sewer system, and 60% either have on-site facilities (septic tanks and pit latrines) or are connected to open channels. 8% of the population of Visakhapatnam lack access to toilets, which represents 30,000 households resorting to open defecation. There are about 200 community and public toilets, 75% of them managed by Sulabh International on a pay-per-use basis while the rest are operated by community groups. Assessments have shown problems with poor maintenance and with the quality of service varying sharply between the low-end facilities in low-income neighbourhoods and the high-end facilities in busy areas.¹¹

Compared with other cities in India, the coverage of the sewerage network is high and the wastewater treatment plants can treat high loads effectively. Commercial reuse of treated wastewater, for example by the port and a golf course, is planned to expand through a project for tertiary treatment of wastewater for industrial reuse. Visakhapatnam has no separate underground storm water drainage system and relies on a network of open drains. Despite a rising rate of connection to the sewer system, most of the excreta in the city is emptied and transported by a non-regulated septic tank-emptying association through vacuum trucks, generally disposing of their load in open drains, farmers' fields, or other unsafe locations. Until recently, solid waste collection was poor and erratic.

Evolution

Traditionally, sanitation was not a priority in the city. Investments focused on sewerage and wastewater treatment and neglected faecal sludge management, so most of the population saw little impact. Since the 1980s, sanitation coverage expansion has been driven by wider supra-municipal pro-poor interventions that included components for household, community and public toilets, and helped the city cope with a rapid growth of slums.

2014 saw the launch of the national Swachh Bharat (Clean India) Mission – aiming to eradicate open defecation, build toilets and clean up public places – and marked a turning point in Visakhapatnam. There has been a major push on all fronts, with the emergence of a vision and a strategy to address gaps in service delivery and bottlenecks in the enabling environment, as well as to increase public awareness and foster behaviour change. An ambitious strategy to eliminate open defecation was developed and is being rolled out, and the city is now paying increased attention to faecal sludge management.

The city has been reaping the fruits of this major push during the past two years, being named in 2016 the third cleanest city in India, which is contributing to maintaining the momentum for scaling up these successes and developing city-wide sanitation services.

Key drivers

The perennial state of water scarcity in Visakhapatnam has historically driven sanitation efforts. In a context of a rising industrial demand for water, authorities have strived to develop sewers and treatment infrastructure that enable water reuse. Nevertheless, as mentioned, for many years progress was relatively slow and more patchy than city-wide.

The increased prioritisation of sanitation in the political agenda and awareness among the public brought about by the Swachh Bharat Mission were important drivers of recent progress. The launch of the Smart Cities Mission in 2015 made further resources and financing opportunities available for the development of urban sanitation services, and represented a drive towards building a more comprehensive strategy.

One of the reasons why these national missions are having such a catalytic effect in Visakhapatnam, compared with other cities, is the territorial reorganisation of Andhra Pradesh in 2014 that positioned Visakhapatnam as the economic capital of the state, since which municipal and state authorities have wanted to promote the city as a vibrant metropolis and model on sanitation. Moving up in the clean and smart cities rankings has become a priority and a source of pride for the city.

Linked to that, the Municipal Commissioner – the highest administrative authority within the Greater Visakhapatnam Municipal Corporation (GVMC) – has been displaying strong leadership, with the backing of the Chief Secretary of the State. Because local elections have been on hold for two years since the last merger with surrounding municipalities, he has been able to champion the sanitation agenda without having to negotiate the process with local political leaders. Beyond making it a priority for the city, he has personally progress-chased the implementation of the programmes and forged fruitful partnerships with different stakeholders.

This includes Water and Sanitation for the Urban Poor (WSUP), which has set up an advisory cell to provide technical assistance to the GVMC.

This advisory cell is supported by USAID, which selected Visakhapatnam – with its reputation as a WASH pioneer – to pilot this new support modality within the context of the Swachh Bharat Mission.

The combination of strong leadership and highly specialised technical support has led to the design of a strategy that strikes a balance between the need to quickly achieve impact at scale and the longer process required to ensure quality and sustainability.

Making the connection between being a clean city and harvesting economic opportunities and promoting stakeholder engagement have been important ingredients of these efforts, and support for sanitation-related activities is increasing.

Although some of the gains are impressive, some obstacles persist: sanitation is fragmented across several departments; the Urban Community Development Department is insufficiently engaged in sanitation efforts; and coordination mechanisms are lacking. The participatory exercises conducted as part of Swachh Bharat and Smart Cities missions are more ad-hoc events than systematised institutional processes. Local NGOs, who have an important role in promoting participation, have low urban WASH capacities.¹¹

The role of planning

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 the Andhra Pradesh Urban Services for the Poor programme 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.

2.2 Kumasi, Ghana



Context

Kumasi is a key transport hub and vibrant commercial centre located in the Ashanti Region in south-central Ghana. Migrants make up one third of its 2.4 million population, almost double the proportion in 2000.¹² It is the second largest and the fastest growing city in the country, with marked expansion of low-income settlements and high population density.

Compared with other cities in Ghana, Kumasi has a very low rate (3%) of open defecation; 58% of the population use private sanitation, in most cases shared between several households. 39% of the population still rely on its 359 privately managed public toilets. There are strong disparities in service quality between public toilets in high-income and low-income areas.

Septic tanks, the most popular sanitation technology, are consistently emptied by privately operated vacuum trucks that offload the sludge at a faecal sludge treatment plant, with a less consistent treatment performance. Sludge from dry toilets is either abandoned in the pits or manually emptied.¹² Solid waste is effectively collected, transported and disposed of in a sanitary landfill site, with full-cost recovery

of operation and maintenance. A few hundred households are served by three small schemes combining sewer networks and lagoon-based treatment plants.

Evolution

Political instability in Ghana in the 1970s and 1980s, combined with International Monetary Fund / World Bank structural adjustment programmes in the 1980s, led to a breakdown of most governance structures and a downsizing of service delivery systems, including Kumasi's sanitary labour workforce. The unhygienic state of the cities' public toilets and household pan latrines triggered a return to open defecation.

The situation started to change with the Kumasi Sanitation Programme in the early 1990s. On-site and off-site sanitation services across the sanitation value chain improved and comprehensive reforms were passed. A Waste Management Department was established, allowing development of a strategic sanitation plan for the city. However, limited budgetary allocations restricted the plan's impact.

In 2001, a delegated approach to sanitation services catalysed private sector investment and participation in the various segments of the sanitation chain of services, and has enabled significant improvements, including improvements in service levels of public toilets, in vacuum tanker operators' compliance with regulations, and in solid waste management.

Progress in Kumasi has been the result of long-term efforts. It may seem slow – and is indeed lagging behind in several areas – but comparison with the rest of the country, for instance with Accra's 15 times higher open defecation rate (45%), highlights the city's high performance.

Key drivers

One of the drivers of sanitation in Kumasi has been its economic and trading hub character, and the resulting need to provide a clean environment and decent public toilets for a transient population of traders, workers and migrants, ensuring economic competitiveness.

The Kumasi Sanitation Programme, supported by UNDP and the World Bank, was a major springboard for sanitation development, bringing resources and establishing the municipal Waste Management Department, which subsequently spearheaded the development of sanitation in the city. The two successive heads of the department championed the sanitation agenda, contributing to stability, continuity in the strategy and good coordination with the Environmental Health Department. The Waste Management Department has always been staffed by well trained professionals, which is in part thanks to the high quality of the local universities.

Another important catalyst was the enactment of national public–private partnership (PPP) policy embedded in the Sanitation Policy (1999), through which the city tapped into the potential of the private sector; private partners of Kumasi Municipal Assembly operate in a competitive market, with economic incentives to perform and regulatory pressure.

Last, WSUP has also been playing an important part, providing ongoing support on various segments of the sanitation value chain, and introducing innovations (technological, business models, financial, and partnerships) to foster a transition from shared sanitation to improved household sanitation.

However, several obstacles have hindered further progress, especially on clandestine manual pit emptying and the construction of household toilets. Several factors contribute to this situation. First, a high degree of density and informality in the city's housing patterns has led to the failure of strategies to promote household toilets. Second, legal compliance remains weak because of lack of capacities for oversight and enforcement, along with vested bureaucratic interests. Also, most landlords have disregarded requirements to construct household toilets, because very little financial support is available, beyond unwieldy microfinance instruments.

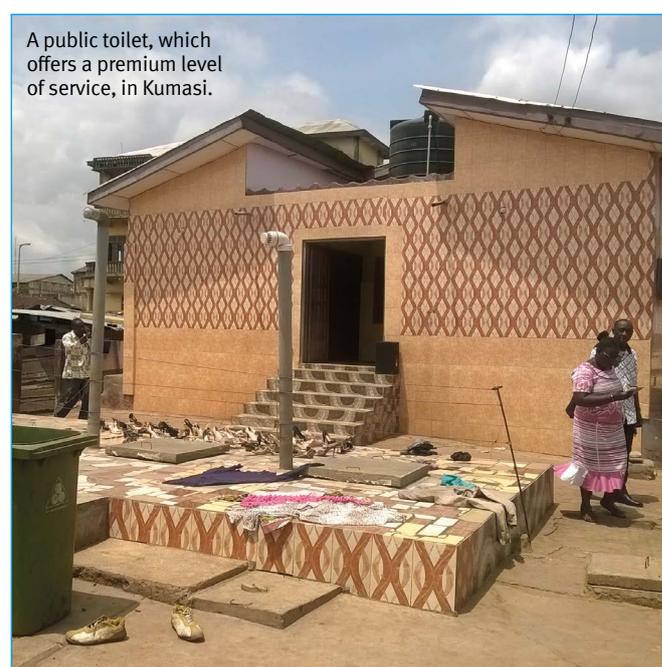
This is part of a broader lack of prioritisation of investments in sanitation services by local elected leaders, despite the political consensus

about its importance. Some interviewees link this to the lack of effective data collection and monitoring systems preventing city officials from making a robust case for increased resource allocation.

The role of planning

The Kumasi Sanitation Programme included the development of a strategic sanitation plan, which drew a roadmap for implementation of an integrated approach to delivering services along the different segments of the sanitation chain and of urban waste management. This plan is regarded as a cornerstone, but not so much for the details of the plan (which was not fully implemented anyway), as for the consequential emergence of a shared vision on how to advance towards sustainable service delivery. The quality of the process, described as 'collective learning by doing' by a key informant, was seen as more influential than was the output.

The later Metropolitan Environmental Sanitation Strategy and Action Plan (2008–2015), which provided an overarching action plan for the delivery of sanitation services, was not considered a significant driver for sanitation, drawing more attention from international development agencies than locally, and only a small fraction of the activities planned seem to have been funded and implemented.



A public toilet, which offers a premium level of service, in Kumasi.

WaterAid

2.3 San Fernando, the Philippines



Context

San Fernando, La Union, is located on Luzon Island in the Philippines. Its population of 115,000 is growing very slowly. The city includes coastal, plain and hilly landscapes, with 28% of the population living in rural barangays (the smallest administrative division in the Philippines). Slums are few and small.

Most households have either pour-flush or flush toilets. Public and community toilets are not common. Use of Ecosan toilets, albeit negligible in terms of coverage, helps address water scarcity in hilly areas and mitigates the environmental impact on tourist beach fronts. Open defecation is rare, and marginally practised in poor coastal or upland barangays.

More than 90% of all toilets have bottomless pits; faecal matter seeps into the ground, contaminating the shallow groundwater. When pits fill up, which happens after a period of years, their thick solid content requires manual emptying.

The city does not have a sewerage system, although small decentralised systems operate in a few areas. There is a faecal sludge treatment

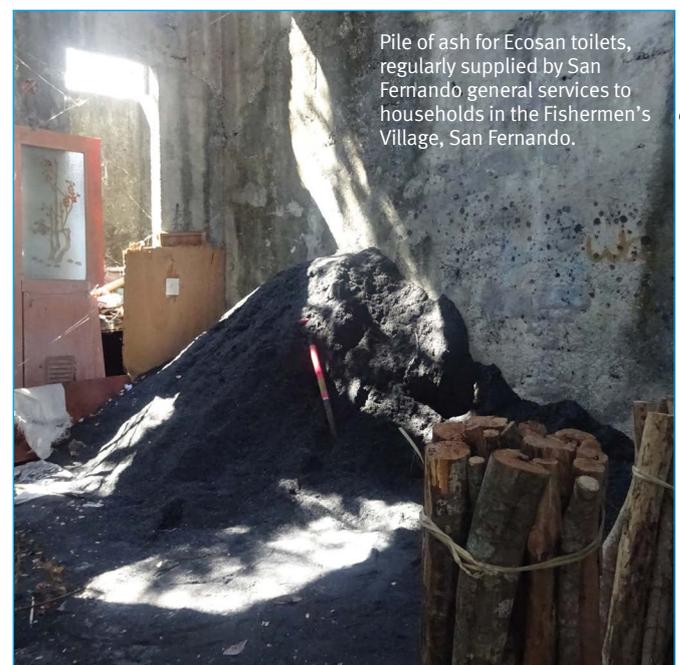
plant, which operates below its design capacity and fails to provide effective treatment, and there is barely any reuse of treated sludge. Solid waste is effectively collected and dumped in a sanitary landfill site managed by the city.

Evolution

Before 2000, San Fernando already had a high level of sanitation coverage, but several challenging areas had unserved households. Services for removal, transportation, treatment and disposal of faeces were almost non-existent.

In 2000, San Fernando began a pioneering process of experimentation, launching several initiatives piloting ways to deliver sanitation services along the sanitation chain, with projects specifically adapted to suit different areas of the city. Key developments included: building of ecological toilets for more than 100 households in challenging areas; development of two small-scale, small-bore sewer networks for two coastal areas; and decentralised wastewater treatment plants for the public market and the slaughterhouse. All these projects were accompanied by changes in local legislation and intensive awareness raising, changing public perceptions and mindsets around sanitation.

On the basis of these experiences, the city started developing larger initiatives, such as the 2010 centralised faecal sludge treatment plant, and a



Pile of ash for Ecosan toilets, regularly supplied by San Fernando general services to households in the Fishermen's Village, San Fernando.

Ricardo Marfaga Jr., ICLEI

sanitation tax which entitles households to get their septic tank emptied once every five years. However, the associated emptying service is facing challenges relating to the high share of bottomless pits, which remains the main obstacle to creating a clean and healthy city.

The progress so far has positioned San Fernando among the Philippines' leading cities on sanitation, gaining it national and international recognition. The city is visually clean thanks to improved solid waste management.

Key drivers

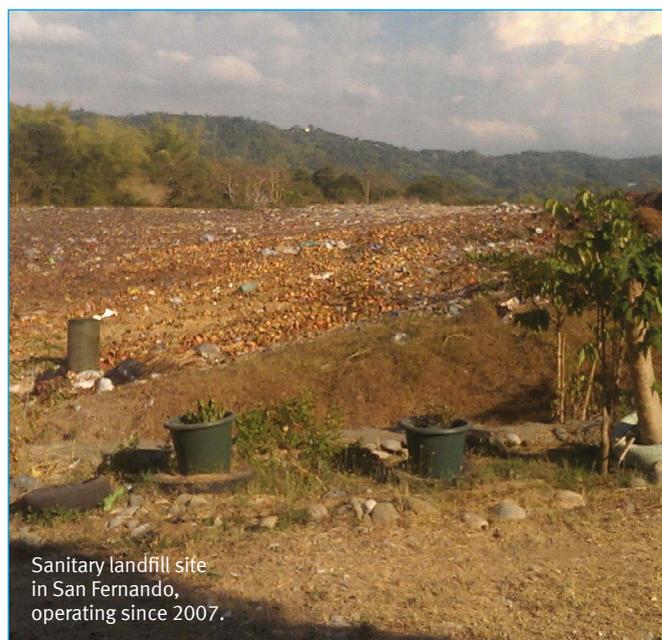
Much of the progress is credited to the political leadership of the mayors, especially Mary Jane Ortega who, between 1998 and 2007, developed a progressive agenda for urban development, including the objective to reach universal sanitation service coverage. Rather than a pro-poor approach, environmental protection and public health were the drivers behind this vision, recognising that the city's prosperity hinged on the protection and valuation of its natural environment.

Another important factor was San Fernando's competitive spirit, reflected in the city winning several awards in national and international competitions and being engaged in an ambitious certification process with sanitation components.

Networking efforts by the mayor resulted in several partnerships around sanitation with many development agencies. Through these collaborations, the city received crucial financial and technical assistance to pioneer technologies and approaches.

Unlike common stories of electoral cycles affecting politically led initiatives, in San Fernando there was ongoing support for the sanitation agenda thanks to a political continuity resulting from the political prominence of the Ortega family in the city.

However, as San Fernando has transitioned towards more city-wide efforts, an important obstacle has been the low capacity and lack of ownership and leadership of this drive within the municipal Environment and Health Departments.



Sanitary landfill site in San Fernando, operating since 2007.

Ricardo Marfaga Jr., ICLEI

Linked to that, capitalisation on the successes and lessons from the multiple projects implemented since 2000 has been very limited; knowledge management processes from these could have contributed to institutional strengthening.

Another problem has been the absence of a strong enabling environment – there were no targets, funding or strategy for planning and delivering urban sanitation.¹³

The role of planning

Progress in San Fernando has so far been project-based and opportunistic. It responded to a vision and a development agenda, but was not guided in practice by an articulated and 'actioned' city sanitation plan.

The Sanitation Strategic Plan (2006–2015), developed with external partners, had very little influence. Calling for decentralised sewerage and the construction of Ecosan toilets, the plan soon became irrelevant as the city shifted from such options towards more centralised faecal sludge management.

Building on the progress and knowledge accumulated, initiatives are underway to develop a more city-wide approach to sanitation, such as the support from the City Development Initiative for Asia. These planning efforts could be integrated into the city master plan, which is under development.

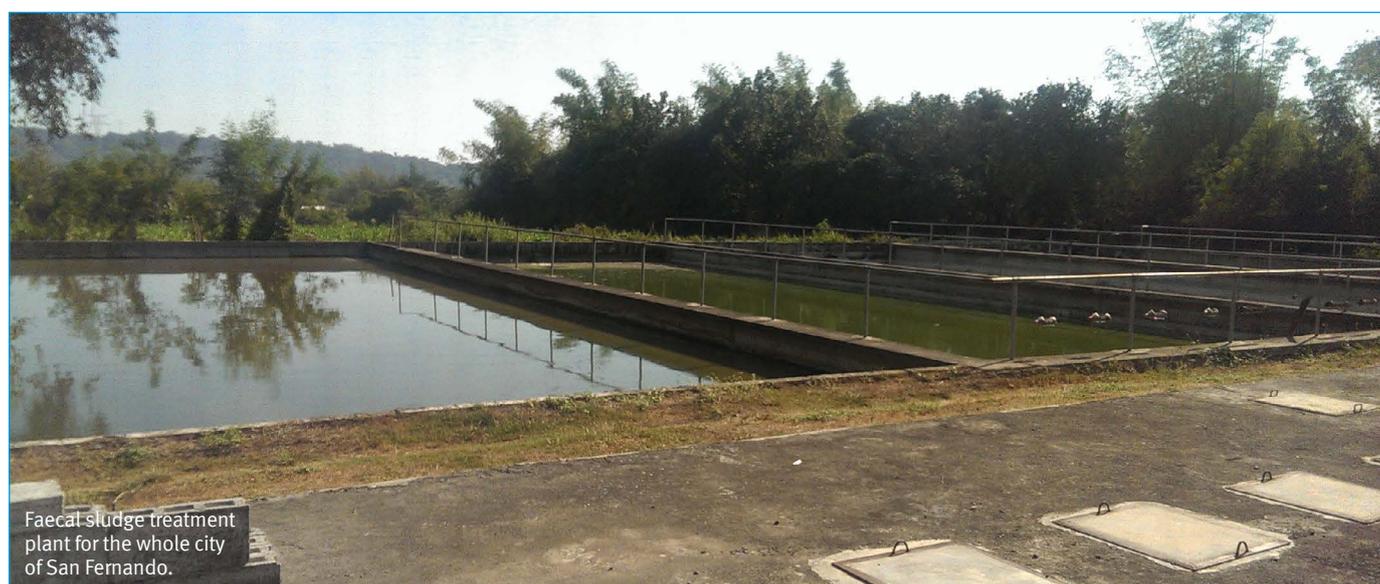
3. Discussion of findings

Despite their different demographic features, challenges and sanitation trajectories, the experiences of the three cities, summarised in Table 1, provide valuable insights.

The next subsections analyse the lessons from these experiences by comparing the three case studies and identifying emerging patterns.

Table 1: Summary description of the case studies

City characteristics	Success story
<p>Visakhapatnam, India Population: 2,100,000 3rd Cleanest City under Swachh Bharat Mission (2016); top 20 city under Smart Cities Mission (2016)</p>	<p>In Visakhapatnam, authorities have historically favoured a sewered approach to sanitation, but 2014 marked a turning point. With the launch of the Swachh Bharat (Clean India) Mission, sanitation has been considerably raised in the political agenda. The Smart Cities Mission reinforced this dynamic. This very recent period has seen the city reap the rewards of a major push to extend sanitation coverage and service levels.</p>
<p>Kumasi, Ghana Population: 2,400,000 Cleanest City 2014</p>	<p>Kumasi has almost eradicated open defecation – a widespread practice in Ghana. Building on the vision developed in the 1990s, the city has made strides in improving the service quality of privately managed public toilets and in addressing different links of the sanitation service chain and of solid waste management. The city has built a reputation as a sanitation pioneer in the region.</p>
<p>San Fernando, the Philippines Population: 115,000 1st runner up Safest, Cleanest and Greenest City Region 1 (2015); Best Zero Waste Management Project Implementer on Zero-Basura (2010)</p>	<p>San Fernando has built a strong reputation as a dynamic city putting forward strategies and policies reflecting a progressive development agenda, in which improving sanitation has been a critical pillar. The past two decades represent a phase of experimentation to deliver sanitation in challenging environments and along the sanitation service chain. Building on progress in service levels, legislation and public awareness, a second phase is starting, with a more city-wide approach to sanitation services.</p>



Faecal sludge treatment plant for the whole city of San Fernando.

Jacques-Edouard Tiberghien

3.1 Uneven progress

As shown in Table 2,^{iv} progress was mixed across the three cities, with substantial achievements on some segments of the sanitation chain contrasting with near stagnation on others.

Table 2: Progress across the sanitation service chain in the city

City	Capture	Containment	Transport	Treatment	Reuse	Solid waste
Visakhapatnam	Good	Good	Some	Little (sludge)	Little (sludge)	Good
				Good (waste water)	Good (waste water)	
Kumasi	Some	Little	Good	Good	Little	Good
San Fernando	Some	Little	Some	Good	Little	Good

However, the urban poor and those who live in challenging areas are lagging behind, as Table 3 shows.

Table 3: Progress across the sanitation service chain in challenging/poor areas

City	Capture	Containment	Transport	Treatment	Reuse	Solid waste
Visakhapatnam	Poor	Little	Poor	Little	Little	Some
Kumasi	Little	Little	Little	Little	Little	Good
San Fernando	Some	Poor	Some	Some	Little	Good

The cities show uneven progress along the sanitation chain, reflecting that the development of these services is generally not simultaneous. The treatment link is where most progress has been made, although operation and maintenance issues remain. Interestingly, the three cities show good progress on solid waste management, probably due to its higher visibility.

All these efforts have had stronger results in better off areas of the cities, whereas slums, challenging areas and poor households remain unreached or have substandard services. Sanitation initiatives seem not to have targeted poor people effectively in any of the cities studied. Although several pro-poor sanitation



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^{iv} These tables are a visual aid primarily developed to illustrate the uneven progress made across the sanitation value chain. It is not based on deep analytical scoring. Progress here refers to an expansion in service coverage and/or an improvement in service level. The level of progress refers to the situation at the time of the research.

initiatives were run in Kumasi, they often failed to effectively reach low-income groups. In San Fernando, the most successful of the three in reaching those living in hard-to-reach areas, service expansion was not driven systematically by pro-poor targeting, but rather by environmental protection concerns, which required universal coverage. The only exception to this could be the recent efforts to eliminate open defecation in all the slums in Visakhapatnam, although it is too early to judge the results. This contrasts with the city’s history of favouring sewerage sanitation services that do not reach poor people.

3.2 Key drivers

Three dominant drivers for improving urban sanitation emerged from the literature review: demand from users; national political influence; and rapid urbanisation. Other key drivers include crises such as disease outbreaks or flooding.

The catalysing effect of national political influence is illustrated by the recent developments in Visakhapatnam (increased priority through Swachh Bharat and Smart Cities missions) and Kumasi (outlawing bucket latrines and the enactment of the PPP policy). Crisis and rapid urbanisation were also part of the story in Kumasi (where sanitation services collapsed in the mid-1980s). Interestingly, organised demand from users did not represent a driving factor in any of the case studies, although it might drive progress on specific links in the sanitation chain (emptying and transport) and on solid waste management, which have a more visible and immediate effect on the neighbourhoods. In San Fernando, a smaller city, none of the drivers identified in the literature were noted.

Other interesting patterns emerge from the comparison of the drivers in the three cities, summarised in Table 4.

Table 4: Key enabling and disabling factors

City	Key enabling factors, drivers, catalysts	Key disabling factors, obstacles, hindrances
Visakhapatnam	<ul style="list-style-type: none"> • Water scarcity • National and state programmes aiming for total coverage including informal settlers • Leadership from the administration • Absence of local elections • Economic capital after state split • City competitiveness • WSUP and USAID support 	<ul style="list-style-type: none"> • Lack of coordination across departments • Low engagement of Community Development Department • Low engagement of NGOs
Kumasi	<ul style="list-style-type: none"> • Socio-economic pressure (trade and transport hub) • Enactment of public–private partnership policy • Strong leadership and technical capacities • UNDP-World Bank KSP programme; WSUP support 	<ul style="list-style-type: none"> • Lack of local funding for sanitation • Lack of effective political support • Weak legal compliance • Lack of effective monitoring systems
San Fernando	<ul style="list-style-type: none"> • Sanitation champion and political continuity • Environmental protection concerns • City competitiveness • Support from many development agencies 	<ul style="list-style-type: none"> • Lack of national enabling environment • Weak learning and knowledge capitalisation

Economic drivers, for instance, played an important role in all the case studies. This might help explain the lack of a pro-poor agenda and the limited progress discussed.

Another commonality is the critical role of local leaders; whether the mayor or key officials in municipal departments, leadership of local champions has proved essential for sanitation progress, by leveraging resources and partnerships, coordinating municipal departments and personally progress-chasing policy implementation. In the cases of San Fernando and Visakhapatnam, an element of competition is behind that leadership, incentivised by their recognition through different awards or rankings.

In all three cities, development partners played a key role. Donors, multi-lateral and bilateral agencies, local and international NGOs, twinned cities and universities, among others, have provided various kinds of support:

- **Financial:** by funding programmes, absorbing the cost of expensive infrastructure and supporting capacity development.
- **Technical:** by supporting analysis, visioning, planning, implementation, stakeholder engagement, and learning, and by fostering technological, institutional and financial innovation.
- **Governance:** by fostering coordination and greater transparency and accountability, by strengthening the skills of staff, and by promoting a new working culture.

Informants from all case studies emphasised the importance of directing capacity building support towards nurturing sanitation champions among high-potential administrative staff and bureaucrats.

This reinforces the ideas that emerged from the literature review – that lack of financial resources, weak capacities and ineffective cross-departmental coordination are seen as key obstacles to urban sanitation. All these were areas development partners have tried

to address. From the Kumasi case study, the question arises of whether the long-term financial support provided risked reinforcing the municipality's unwillingness to invest in sanitation and its viewing investment as development partners' responsibility. This links to another key obstacle identified – the lack of political priority, understood as resolute engagement of leaders to champion and invest in the sanitation agenda. This problem was visible in Kumasi, whereas San Fernando provides a counter example. Visakhapatnam also exemplifies this issue, as political priority was lacking before increasing sharply in 2014, transforming the sanitation landscape.

Fragmentation of sanitation among several poorly coordinated departments in the three cities emerged as a problem, confirming findings in the literature. Delivering sanitation in these cities involves a set of services that require a decentralised but coordinated approach. Failure to coordinate exacerbates, for instance, the aforementioned problem of progress not reaching poor households; in Kumasi and Visakhapatnam, departments with experience in engaging communities were not coordinated with those implementing sanitation.

A further blockage identified is the weak use of information in decision making, which in turn is linked to monitoring systems not being robust enough, data not being shared transparently, and limited ability of institutions to make use of existing information.

3.3 Planned vs organic sanitation development

Sanitation developments in the three case studies were not so much the result of thorough planning processes as haphazard or organic advances made by seizing emerging political opportunities, through increased private sector engagement, or as a by-product of wider urban development programmes. Consequently, progress was generally project-based and patchy, lacking effective pro-poor orientation.

The primary reasons behind this are the low political priority and availability of funds, as well as unarticulated and weak demand, which make planning difficult and slow down progress. Taking into account that these cities are among the best-performing among developing countries, it is clear that advancing the sanitation agenda is a long-term process; however, Visakhapatnam shows that, with the right conditions, great leaps forward can be made in shorter time frames.

Against this backdrop, planning exercises in these cities inevitably faced challenges, but their quality was also not always up to the mark, confirming some of the concerns identified in the literature review and summarised in section 1.

Sanitation planning was generally disconnected from budgeting processes, and lack of funds has been a major obstacle to their implementation; as the two planning efforts from Kumasi clearly show, only a small fraction of the activities planned were actually implemented. The sanitation plan in San Fernando lost relevance soon after it was published, perhaps because it was developed at a piloting stage or because partners were keen to promote specific technologies.

Although the sanitation developments have been frequently opportunistic, it is also true that in all the studies they have responded to a

vision the city wanted to achieve: the mayor's aspiration of an environmentally friendly San Fernando; Swachh Bharat's aim of a vibrant Visakhapatnam free from open defecation; and a collectively constructed vision and pathway for a clean Kumasi. It should be noted that the preparation of the Kumasi Sanitation Programme was instrumental in creating that vision, highlighting the fact that sanitation planning can be decisive, even if it does not lead to line-by-line implementation of the plan. In the words of a senior urban WASH expert in Ghana, **“People in Ghana do not put a strong emphasis on formal planning, which they sometimes regard as quite disconnected from the reality. What drives the whole [sanitation development] process are the people, individuals who fully own a plan which is merely the formal by-product of a shared vision.”** This planning, described as a collective learning-by-doing process, underscores the importance of the process over the product, and how stakeholder engagement increases relevance and ownership among communities and politicians.

A final relevant aspect is the driver that triggers sanitation planning. In every case, development partners have been key influencers, encouraging the cities to undertake such exercises. The potential of additional resources from donors that could follow could be the key incentive; this would be lacking when national policies



Ecotank for riverside communities, San Fernando.

Jacques-Edouard Thieyghien

mandate sanitation planning. Such policies in the Philippines and India did not have much influence in the cases studied, similarly to what has happened elsewhere in those countries, where cities treat planning as a mere formality, if they undertake it at all.

Interestingly, in both San Fernando and Visakhapatnam, at the time of the research there were efforts to develop city-wide sanitation plans and integrate them into the city master plans. It seemed the right time for both cities – for Visakhapatnam to build on the current momentum and political priority, and for San Fernando because of the level of maturity of sanitation development and the need for a step change to finish the job. Both cities are also receiving timely support from development partners for this task. These circumstances could point to the fact that, despite the shortcomings and challenges highlighted, there

is still an appetite for city sanitation planning, when it comes at the right moment, in the right circumstances and with the prospect of additional resources.

Linked to the idea that there are degrees of maturity of sanitation development in a city, on the basis of these three cases one can structure this development into three different phases: piloting; consolidation; and city-wide expansion. Table 5 describes these phases, which could represent the generic evolution a city undergoes in its sanitation efforts; however, being based on just three cities, this conceptualisation may require future refinement. Progress from one phase to the next tends to entail long timeframes, although specific circumstances and political opportunities might speed up the movements. In 2016, the cities studied could all be classed as being in an advanced consolidation phase or in the city-wide expansion phase.

Table 5: City sanitation development stages

Phase	Description	Example
Piloting	Initial steps in sanitation development, with discrete opportunistic projects addressing specific links of the service chain, generally at a pilot level. Lessons being learned about the sanitation context, stakeholders involved, and possible service models.	San Fernando in the 2000s, trying to learn through several pilot projects.
Consolidation	Rooted in an understanding of the sanitation issues, initiatives aim at the expansion, management and oversight of a range of services along the sanitation chain, while involving key stakeholders through participatory processes. Gaps at the institutional level (priority, capacity, coordination, financing) are understood and targeted.	Kumasi, where a range of services have been developed along the sanitation chain. Major gaps remain and there is no strong momentum to address these.
City-wide expansion	On the basis of a clear vision and aspiration for city-wide sanitation services, and having addressed some of the institutional issues, efforts are in place to try to close the gaps in coverage and improve service levels.	Visakhapatnam, where there is a strong push towards city-wide sanitation, along the different segments of the service chain. San Fernando, with a clear view and a wealth of experience, could be considered to be transitioning into this stage in 2016.

4. Final reflections and ways forward

Looking back at what the research aimed to contribute to (to figure out how best to plan and deliver city-wide sanitation services), and despite the constraints of limited case studies and amount of fieldwork, the findings provide useful lessons and pointers for those involved in urban sanitation.

4.1 Key lessons

What makes urban sanitation happen?

Wherever delivery of city-wide sanitation services along the sanitation chain has significantly expanded, local leadership seems to be the key driver of progress. Municipal champions – either elected authorities or high-ranking officials – can prioritise sanitation, leveraging resources and partnerships, engaging with the practical challenges, and progress-chasing implementation. The reliance on these leaders is not surprising, as urban sanitation is a complex task that generally has to be delivered in unfavourable conditions: fragmented mandates; weak regulation; few financing opportunities; low citizen demand; and short political cycles. For the same reason, either national governments or development partners (or both) play a relevant but complementary role in these stories of progress, generally smoothing some of these unfavourable conditions. Planning does not represent a key driver of progress in urban sanitation, and tends to have a limited effect on it.

What, then, is the role of city sanitation planning?

The limited role of city sanitation planning is often related to its disconnection from budgeting processes, which reduces the likelihood that it will be implemented. However, its limited relevance is also linked to the predominant rational approach to planning, which features thorough planning exercises that may not make sense for cities not yet at a particular level of sanitation development.⁴

Nevertheless, planning exercises seem to be making meaningful contributions, such as forging an aspirational vision of a clean city and a shared understanding on how to get there, as well as improving collaboration between key stakeholders, guiding and raising awareness. City sanitation planning efforts can actually be geared to make these contributions, ensuring they stay relevant and are worth the time and resources invested. Approaches to planning need to find a new balance, moving away from the predominance of rational traditions and shifting focus from output (the plan) to process. A big part of this is about tailoring city sanitation planning to the city's current phase of sanitation development and the political opportunities for progress, to ensure it fulfills the right functions for that particular moment and situation. The next section suggests what a more context-sensitive approach like this could look like.

What about reaching poor people?

Even in successful cities, progress in delivering urban sanitation for the poorest sections of the city tends to lag behind. Reaching poor people does not seem to be either a driver or a key target of sanitation efforts, and, wherever such pro-poor efforts exist, their effectiveness is still limited. A focus on the public good dimension of urban sanitation (public health, environmental protection) rooted in a city-wide and universal access narrative seems to be a more effective entry point for extending sanitation services to poor people.

4.2 Ways forward for planning city-wide sanitation

The research highlights the need to adopt a more nuanced approach to city sanitation planning, acknowledging its different functions and contributions, and has spurred a reflection on the need to adapt it to a city's phase of sanitation development and the political opportunities for progress. Acknowledging the limited scope

of the research, Table 6 constitutes a first attempt at envisioning how municipal authorities, national governments and international development agencies could move towards a smarter approach to city sanitation planning.

Table 6: Tailoring city sanitation planning

Phase	Key functions to pursue	Possible city sanitation planning activities
Piloting	<ul style="list-style-type: none"> • Creating a vision of a clean city and a broad pathway to get there • Increasing public profile of sanitation • Learning how to expand access to sanitation in different city areas • Exploring how to deliver services along the sanitation chain • Fostering collaboration across departments • Nurturing champions 	<ul style="list-style-type: none"> • Use of city-wide diagnostic tools to identify needs and critical areas (e.g. Shit Flow Diagram, Sanitation Safety Plan, poverty/disease mapping) • Scenario building/options assessments, workshops with cross-departmental involvement • Exposure visits/exchanges and learning events • Public awareness campaigns • Designing a light city sanitation plan, with several options and identifying knowledge gaps • Iterative development of successive short-term strategies that include on-the-ground pilot projects • Designing monitoring systems and knowledge management processes
Consolidation	<ul style="list-style-type: none"> • Learning how to deliver sanitation services at scale • Understanding underlying obstacles, institutional blockages and capacity gaps • Stimulating demand and creating momentum and political buy-in • Fostering cross-sectoral collaboration 	<ul style="list-style-type: none"> • Use of more detailed diagnostic tools (e.g. bottleneck analysis, service delivery assessment) • More detailed options assessment, goal setting, development of business cases along the sanitation service chain in participatory workshops • Participatory processes and events to market efforts and engage key stakeholders and the wider public • Updating the city sanitation plan, including more at-scale projects and programmes, institutional strengthening and capacity building • Linking plan with budgeting process and funding opportunities • Establishing monitoring systems and accountability mechanisms
City-wide expansion	<ul style="list-style-type: none"> • Identifying service coverage gaps, chronic obstacles and inequalities • Devising a clear pathway for universal sanitation services • Mainstreaming efforts and plans • Creating a mission sense 	<ul style="list-style-type: none"> • Updating past diagnostic tools and using more in-depth ones (e.g. SaniPath, municipal functions analysis^v – see Annex 3) • Awareness raising and mass communication • Thorough update or design of a detailed city sanitation plan, including an implementation plan • Embedding plan in budgeting processes and city master plans

^v Available at www.wateraid.org/ataleofcleancitiesannexes



Empty settling tank in the faecal sludge treatment plant in San Fernando.

Jacques-Edouard Thieghien

The lists of functions and activities in Table 6 are tentative and not intended to be sequential or incremental. Activities might be used in different phases according to specific needs and situations. An important factor to take into account is the political opportunity for sanitation (for example funding opportunities, political prioritisation, crises creating sudden demand, and available support from development partners), which might favour some specific activities over others. For instance, where political opportunity is low, diagnostic tools that have a stronger advocacy orientation should be favoured, even if these are not the most relevant for that specific development phase.

Taking into account that urban sanitation is still a neglected sector in most countries, it can be argued that a vast majority of cities in developing countries will be in the piloting phase of sanitation development. For that reason, but also to exemplify Table 6, we elaborate here on how to approach city sanitation planning in that phase.

In the piloting phase, it would not be very useful to develop a thorough city sanitation plan. A more light-touch approach to planning, leaning more towards the pragmatic and collaborative than the rational traditions, would make more sense. Planning activities could include the use of city-wide diagnostic tools and scenario building or options assessments workshops, as a way to understand the sanitation challenges of the city and create a shared vision of how to clean it up.

Because the piloting phase is likely to come with low political prioritisation, it might be important on the one hand to increase the public profile of sanitation through public awareness campaigns, engaging the media and civil society, and on the other hand to nurture champions through exposure visits or learning events. The diagnostic tools highlighted would be useful to support these efforts. In turn, learning events could also be used to complete the diagnostics by learning from those formally or informally involved in providing sanitation services.

The city sanitation plan itself could take the form of a light document setting out a broad vision of where the city wants to be in the future, and several broad pathways forward, identifying which are the challenges or unknowns of sanitation in the city (for example how to address specific links of the service chain or how to extend coverage to challenging areas). The plan would include a short-term strategy with a menu of on-the-ground projects, studies or other interventions to enable experimentation and learning about those issues. Preparing monitoring systems and knowledge management processes to capture that learning would be an important element, too. The short-term strategy could be renewed every couple of years, and become the basis for opportunistic progress, using emerging funding opportunities, promising partnerships, and so on. After a certain number of iterations, the city would probably transition towards a consolidation phase.

4.3 Recommendations

For development agents aiming to contribute to city-wide sanitation progress:

1. Nurture sanitation champions at the municipal level, both elected leaders and government officials, so they can provide sustained leadership to the sanitation agenda, engaging with the practical challenges and in progress-chasing, and ensuring collaboration across municipal departments.
2. Influence national governments to ensure sufficient financing and adequate budgeting mechanisms for urban sanitation, provide an adequate regulatory framework, and benchmark cities' performances to foster competition.
3. Provide technical support to municipal authorities to promote innovation across the sanitation service chain, contribute to technical capacity building, and help monitor and capture learning.
4. Use financial support wisely, ensuring it has a multiplying effect (for example by requiring match funding or leveraging private resources), catalyses change (for example through competitions between cities), and promotes greater accountability.
5. Work more adaptively and be prepared to seize opportunities as they arise. Disease outbreaks and other related crises can result in a spike of citizen demand and political priority, creating a window of opportunity for change.
6. Contribute to building a wide-ranging platform for collaboration around urban sanitation, led by municipal authorities and including development partners, civil society, and private service providers.
7. Promote city-wide political narratives, highlighting the need for universal access to protect the environment, improve public health, and make the city competitive. This will help ensure the inclusion of poor households in urban sanitation efforts.

For city (sanitation) planners and others involved in city sanitation planning:

8. Promote local ownership and relevance of city sanitation planning, ensuring it is linked to funding opportunities and/or budgeting processes.
9. Think of city sanitation planning as a process with many functions and potential contributions that go far beyond the actual plan. A key function is the development of a shared aspirational vision (for example a clean, healthy and competitive city), which requires participatory processes.
10. Adapt your approach to planning to the phases of sanitation development in the city, from a more light-touch pragmatic process in the piloting phase to more thorough planning exercises in the city-wide expansion phase. Also take into account political opportunities that may call for specific activities.
11. Particularly for cities in a piloting phase, approach city sanitation planning as an iterative process, involving the development of a long-term vision and a short-term strategy that triggers defined activities and is regularly renewed as implementation bottlenecks are solved and new ones emerge. Manage knowledge to capitalise on lessons learned and to be able to showcase efforts and attract partners.

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

A tale of clean cities:

Insights for planning urban sanitation from Ghana, India and the Philippines

This publication is part of the research 'A tale of clean cities', which also includes three case study reports:

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

A tale of clean cities: insights for planning urban sanitation from San Fernando, La Union, the Philippines.

A tale of clean cities: insights for planning urban sanitation from Kumasi, Ghana.

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Contact: Andrés Hueso at AndresHueso@wateraid.org

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