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Engaging in city-wide sanitation
Implications from 'A tale of clean cities'

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Background

Uncontrolled urbanisation and proliferation of slums in developing country cities make provision of urban sanitation a complex challenge. Sanitation coverage tends to be patchy and service standards are disparate, with large differences between high-income and low-income areas. Within the sector little attention is paid to the sanitation service chain. that is what happens to the shit: containment; emptying; transport; treatment; and disposal or reuse of wastewater and faecal sludge.

Cities are dynamic and complex environments – even more so in developing countries. The Sustainable Development Goal (SDG) target of universal access to sanitation pushes us to engage in urban sanitation from a city-wide perspective, and consider it as a service that needs to be sustainable and include the most vulnerable and marginalised citizens.

Useful lessons for that engagement can be learned from the experiences of Kumasi (Ghana), San Fernando (the Philippines) and Visakhapatnam (India), presented in the WaterAid publication 'A tale of clean cities' (www.wateraid.org/ataleofcleancities). This discussion paper distils the key practical implications from that research, and is intended as a resource to help us rethink the city sanitation work of WaterAid and partners. The main guiding idea developed in this paper is that our city-wide sanitation work needs to be tailored to each city's **opportunity for progress** in sanitation and **phase of development** of sanitation.

Assessing the opportunity for progress in sanitation in a city

A key driver of progress across the cities studied was the **presence of sanitation champions** at the municipal level. Other key factors include **national political influence**; **economic/funding considerations**; and **support from development partners**. Progress resulted from **emerging opportunities** (for example crises such as a cholera outbreak in Ghana) that helped put sanitation on the political agenda. Sanitation master plans did not emerge as an important driver, although the processes of planning city sanitation were beneficial, for example forging an aspirational vision of a clean city and charting the broad direction forward.

On the basis of those key drivers, you can make a rough assessment of the **opportunity for progress** in sanitation in a given city. If the following drivers seem to be present, you can assume that there is a big opportunity for progress in sanitation (and vice versa):

a) A **municipal champion** making sanitation a priority.
b) A **spike in citizen demand or political priority** (such as a crisis, a national campaign, or a policy/regulation change).
c) Readily available **finance** or solid financing opportunities.
d) **Strong capacity** within the municipal government or utility.

To assess the opportunity for progress, you could rate the extent of the presence of each driver as 1 (low), 2 (average) or 3 (high). The mean of these driver ratings then represents the overall opportunity for progress (1, 2, or 3).

A more qualitative approach could be to use the drivers as elements for analysis and then rate the opportunity for change in a more general way.

This list of drivers is not universal, and could be refined or adapted to local circumstances. Also other key factors may be blocking change and reducing the opportunity for progress, in which case analysing the political economy around sanitation might be useful.

For instance, in Visakhapatnam in 2016, the head of the municipal corporation was championing sanitation (a). Framed within the national Swachh Bharat Mission, sanitation was a political priority in India (b), and lots of funds were available (c). It can be concluded that the opportunity for progress in Visakhapatnam (Vizag) was high.

Assessing the phase of development of sanitation in the city

The three cities studied present a somewhat sequential development of sanitation service provision, which can be thought of as consisting of three phases: exploration, consolidation and city-wide expansion.

Table 1: Phases of sanitation service provision

Exploration phase	Initial steps in sanitation development, with discrete pilot projects addressing individual links of the service chain. Creating connections between key players in the sanitation sector, building a joint vision and exploring possible service models.
Consolidation phase	Initiatives aim at the expansion, management and oversight of services at a substantial scale and covering more and more links of the sanitation chain, with involvement of key stakeholders. Institutional bottlenecks are understood and gradually targeted (priority, capacity, coordination, financing…).
City-wide expansion phase	A clear vision and aspiration for city-wide inclusive sanitation services is pursued. Efforts in place try to close the gaps in coverage and improve service levels.

In Vizag the authorities had a clear vision of making the city clean and healthy, and they were trying to cover the last open defecation spots, while increasing the focus on faecal sludge management. We can consider that they were predominantly in the city-wide expansion phase.

Cities will present a combination of elements from different phases. But, in most cases, after some qualitative analysis of the sanitation context identification of the prevalent phase for the city will be easy.

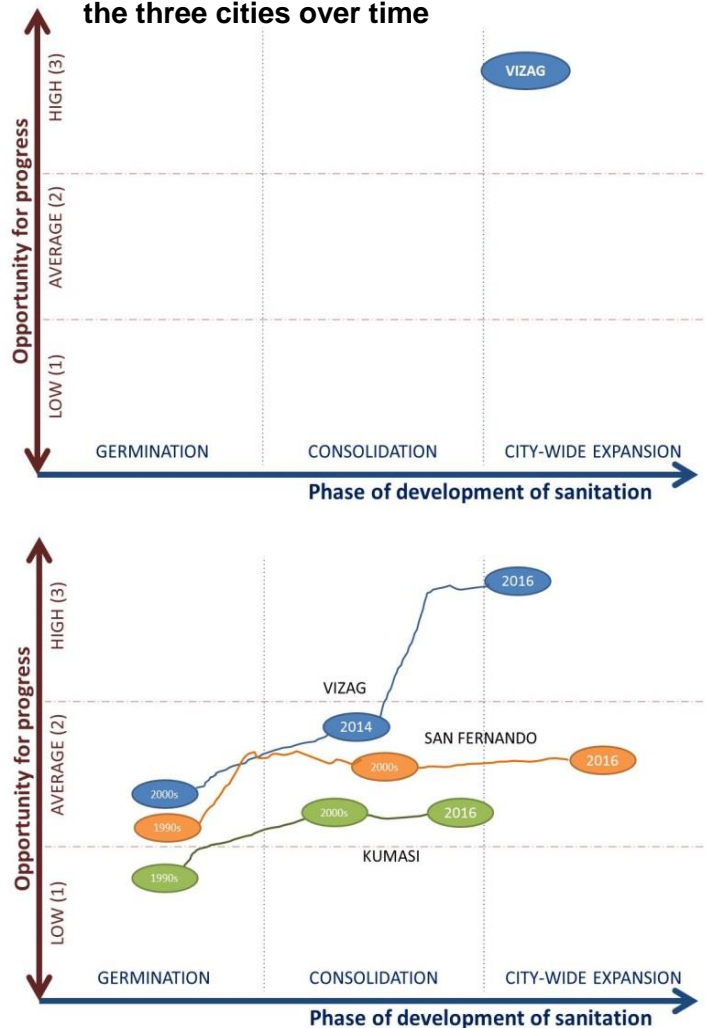## Plotting the city in a graph against these two factors

The Opportunity for Progress vs Phase of Development (OPPD) graph can be used to plot the city against these two key factors.

Vizag (2016), with high opportunity for progress and in the city-wide expansion phase, would fall in the right upper corner of the graph.

If information over time is available, it would even be possible to see how the city evolves within the OPPD graph. On the basis of the research, for instance, the evolution of the three cities can be very roughly recreated.

This illustrates that the natural evolution is for a city to start at the exploration phase, with reduced opportunity for progress (bottom left). Once opportunity begins to increase, this enables sanitation development to move towards more advanced phases (top right). The three cities show that this trajectory is rarely a straight line, though, and that it is generally a long-term process.

Graph 1: Phase of development and opportunity for progress in one city and in the three cities over time

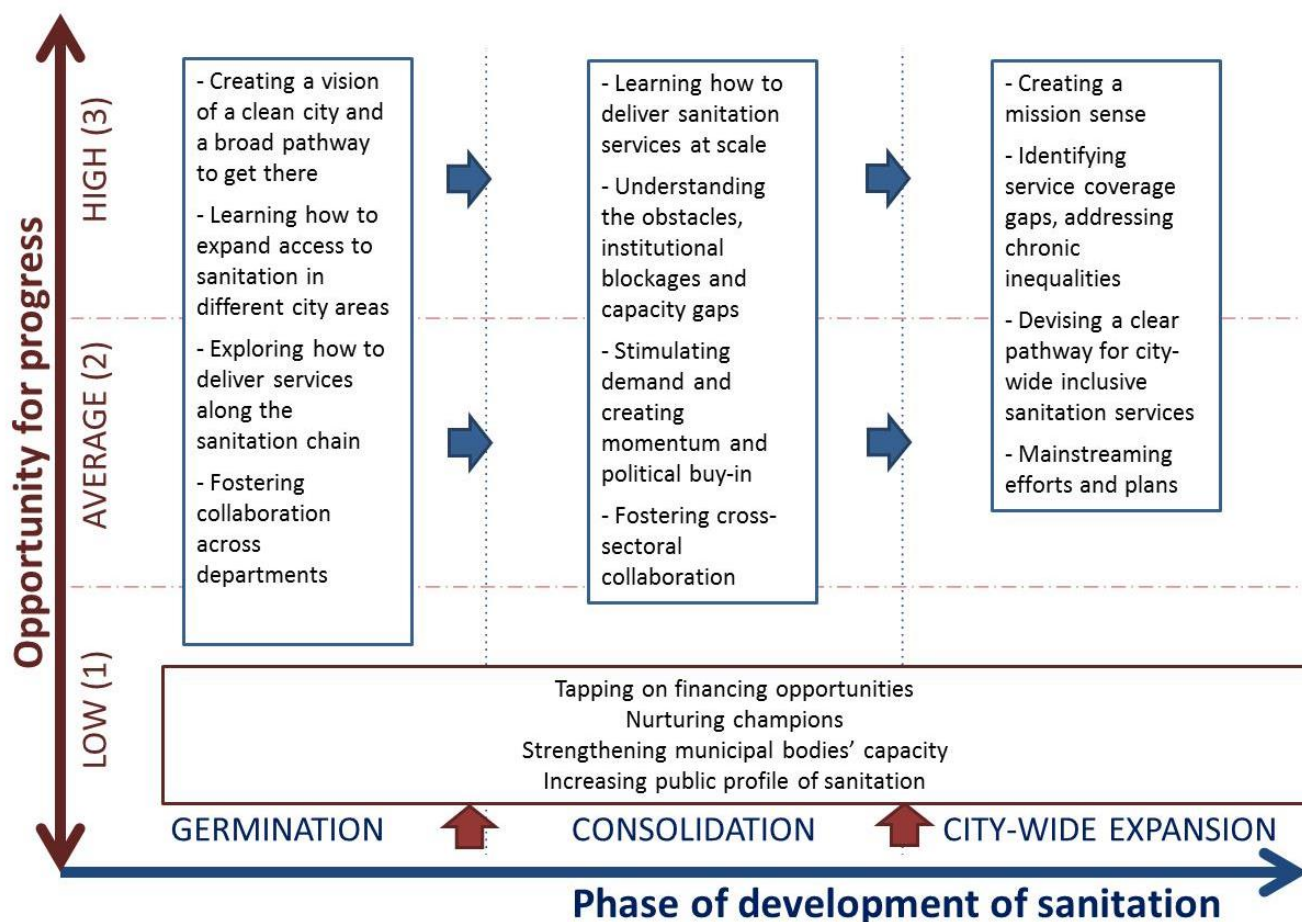**WaterAid**

How can I plot my city in the OPPD graph?

You will need to do a bit of analysis, based on personal knowledge and experience on the city and its sanitation situation, as well as on existing reports and data (from databases or initiatives such as the Shit Flow Diagrams). If needed, you may conduct interviews or informal conversations with municipal leaders and officers, and others engaging with or who have expertise on sanitation. Individually or in a workshop, you can assess the opportunity for progress and phase of development of sanitation in the city and plot it in the OPPD graph (and over time, if possible).

So what? Implications of where our city is positioned in the graph

There are two general implications for our work that follow from the analysis of the position of the city in the graph.

First, if opportunity for progress is low, main efforts should be directed at increasing it. What key drivers need improvement (capacity, champions, finance, political priority)? Which ones are easy gains or are we better able to influence?

Second, depending on the phase of development of sanitation, and assuming its trajectory will be one of incremental steps towards the subsequent phase, we can focus on things that can accelerate that progress.

Graph 2: What needs to happen? Implications for interventions

For instance, at a consolidation phase, interventions should be targeted at scale and cover most, if not all, of the links of the sanitation chain. At an exploration phase, however, it may make sense to focus on specific areas of the city and potentially on more localised interventions that help the city learn how to deliver services. These ideas are elaborated in the blue boxes in Graph 2, showing what needs to happen to progress from one phase to the next.

Understanding where our city is situated and what needs to happen to progress towards city-wide sanitation can help you decide what initiatives and approaches you should pursue. It could be about supporting training, promoting of innovation, fostering citizens' engagement, influencing regulation, encouraging planning and more. However, you will need to figure out what these could look like specifically for your city, using a combination of creativity and common sense. The OPPD graph can help you in that process in that it provides a simple way to start understanding a complex issue. But do also consider whether you need a deeper analysis.
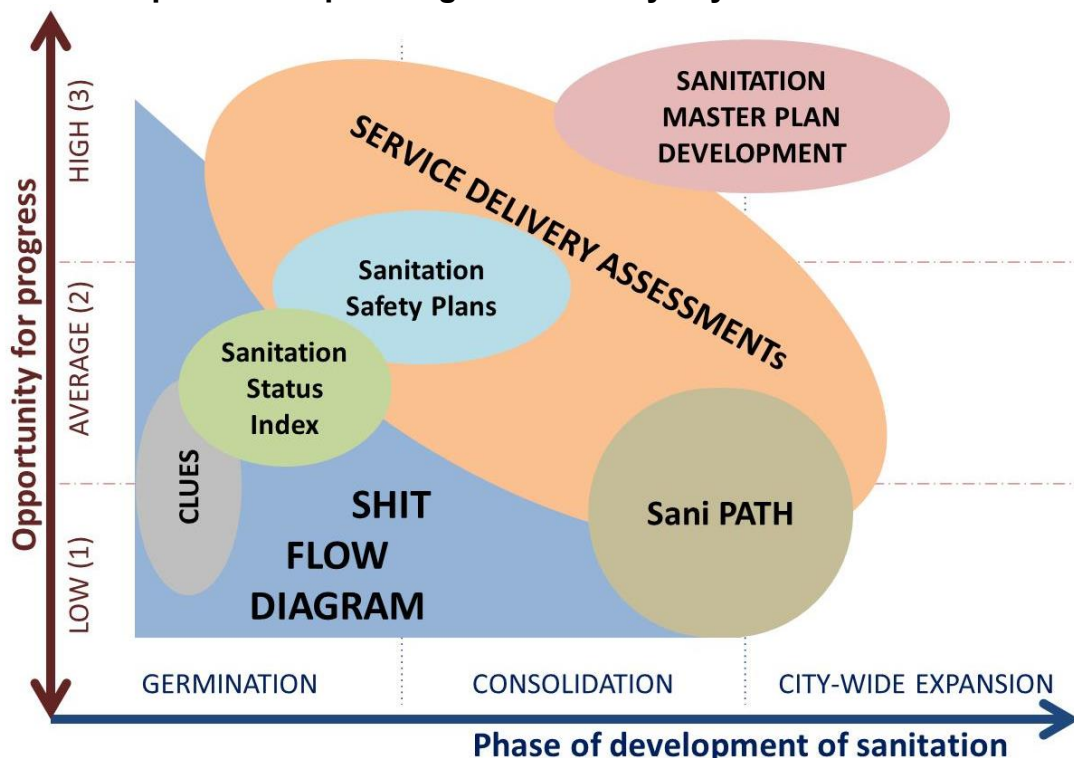
Tailoring planning exercises

This section focuses specifically on planning, as we witness nowadays numerous diagnostic, prioritisation and decision-making tools being developed in the urban sanitation sector. While this represents a good opportunity to encourage a city-wide perspective and promote forward thinking, we often see them used without sufficient purpose or clarity on the contribution they will make. To help us navigate this situation, we present here two meta-tools, which are not intended as 'tool-selection instructions', but rather as a means to stimulate thinking to help us decide whether it makes sense to use a tool and if so which one makes more sense, as well as on how you could engage with others undertaking those exercises.

The first meta-tool, developed by Rémi Kaupp and inspired by the first phase of the *A tale of clean cities* research, is the 'Comparison of tools & approaches for urban sanitation'. It is a quick review of approaches and tools available for urban sanitation as of mid-2016, including who created them, how they work, their main use and limitations, and known examples. The summary tables are annexed to this document.
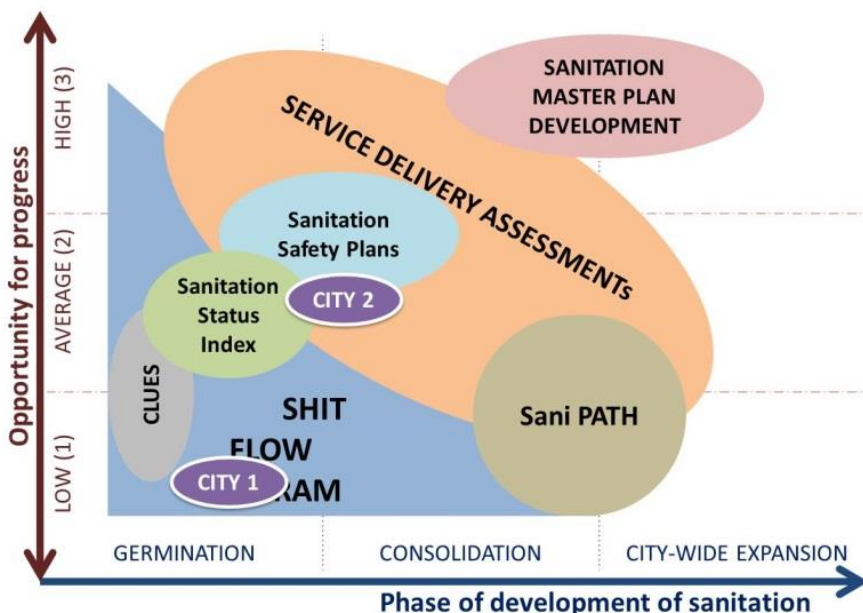
The second meta-tool, in Graph 3, locates some of the tools within the OPPD graph. It is intended to be an orientation as to which type of planning exercise makes more sense for a particular city, depending on where it was plotted in the OPPD graph originally.

Graph 3: What planning tool suits my city's circumstances?

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For instance, in City 1 (see Graph 4), with very limited opportunity for change, you could consider doing a shit-flow diagram as a way to raise the issue of urban sanitation and increase political priority. In City 2, with more opportunity for change and transitioning from an exploration to a consolidation phase, service delivery assessments could help understand and address capacity gaps throughout the sanitation chain, while sanitation safety plans could help bring (city-wide) scale into the picture.

Graph 4: Example Cities 1 and 2

Please note this is a very rough and ready approximation, and the different tools can be adapted to serve slightly different purposes and become useful elsewhere. Hence, the aim of the graph is to help you make the link between where your city is located, what needs to happen (as discussed in the previous section) and what

planning exercises could contribute to that (and how). It can also help you choose and steer planning and diagnostic exercises, as well as support your engagement in similar exercises that are not under your control, thinking strategically how to make the most out of them.

Don't miss the big picture

Remember that the focus on planning in the previous section does not mean that by default you should think about developing city sanitation plans. As discussed earlier, the aim is to understand the sanitation situation in your city, identify 'what needs to happen' and think what you can do to contribute to this. Supporting planning might or might not be part of that.

Finally, keep in mind that this focuses on city-level engagement. Although that may coincide with the focus of your urban sanitation project, ideally it should be part of a wider programme that goes beyond the city level, addressing related issues at the national (and possibly sub-national) level. This could include, for instance, advocating for national policies or regulations on on-site sanitation; improved fiscal decentralisation; or strengthened monitoring systems and benchmarking mechanisms.

Annex: Comparison of tools and approaches for urban sanitation – Tables (link to the full document)

Approaches

Approaches	Description	Use	Limits	Examples
City sanitation plans **(CSP)** Various actors	Blanket term for a range of approaches, involving strategic planning processes for city-wide sanitation service development. They draw on fundamentals of earlier planning approaches and take a holistic approach to planning, addressing both technical (e.g. services) and non-technical (e.g. institutional capacity) aspects of urban sanitation. They provide in-depth guidelines and strategies (developed by several supporting organisation, e.g. WSP's city-wide sanitation strategy).	Work well with the mentality of many urban planners and large funders.	Collaborative planning may be unfamiliar, and it is easy to revert to top-down supply-driven planning.	Indonesia WaterAid: four cities planning
Community-led urban environmental sanitation **(CLUES)** EAWAG (2011)	CLUES built on lessons learned from implementing household-centred environmental sanitation. CLUES includes water, solid waste management and storm drainage in addition to sanitation. It is a 7-step approach including: demand creation; planning inception; situational analysis; problem prioritisation; identification of service options; developing an action plan; and implementing the action plan. Cross-cutting these steps are: communication; capacity development; and monitoring and evaluation.	Implement **participatory planning** for sanitation, through tested methods.	Potentially time-consuming planning. Needs good facilitation. Assumes self-financing by communities. Needs strong leadership.	Nala, Nepal
Sanitation 21 IWA (2005 and 2014)	A framework that attempts to refocus sanitation planning by thinking about wider objectives, against business as usual. The steps include building partnerships, context definition, identifying technical options and feasibility, but leaves detailed planning to existing tools.	**Diagnostics of existing systems**, and federating actors around sustainable sanitation.	Unclear if it has been used much in practice; doesn't provide much guidance for planning.	N/A
City-wide pathway to sanitation Developed in USAID's SUWASA programme (2015)	Provides a nine-step 'pathway' for improving management of urban sanitation, encouraging authorities to: assess existing services and the socio-economic context; map stakeholders; build consensus for action and define roles; create a short-term FSM plan and a longer-term investment plan; and mobilise investments.	**Sequence the work**, think city-wide and about the various stakeholders, and think about finance.	The pathway itself doesn't tell you how to address issues, and the examples are weak for short-term work.	Juba (almost all steps)

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Whole System Approach **(WSA)** IRC (2014)	Used a systems thinking approach to focus on 'everything' by considering institutions, whole chains, service provision, leadership and monitoring. It involves a three-phased approach: 1) initiating change – situational assessments, planning, developing partnerships; 2) learning and testing – action-based research and pilot projects, capacity development; and 3) replicating and scaling up – systematic changes led without external support, and monitoring.	Integrate work with other sectors and think about long-term services	Focused on external actors' inputs – useful for NGOs but possibly less for city officials. Systems thinking needs to be 'primed' when it doesn't come naturally.	N/A

Diagnostic Tools   [Highlighted cells are part of the World Bank FSM tools series, developed by the World Bank, OPM, WEDC (2016).]

Tool	Description	Use	Limits	Examples
Shit-flow diagrams **(SFD)** Promoted by GIZ and Gates	SFDs are a useful tool to inform urban sanitation programming and communicate visualising how excreta physically flows through a city or town. It shows how excreta is or is not contained as it moves from defecation to disposal or end-use, and the fate of all excreta generated. An accompanying report describes the service-delivery context of the city. They offer an innovative way to engage city stakeholders like political leaders, sanitation experts and civil society organisations in a coordinated dialogue about excreta management.	City-wide **diagnostic**; useful for engaging stakeholders, advocacy (especially realising the limits of the current system, if perceived 'good enough'). Useful diagram to introduce the topic.	Not a scientific analysis of volumes; usually not for directly planning as it misses causal factors, geography, etc.	Dar es Salaam SFD World Map **WaterAid**: Ethiopia in five towns
City service delivery assessment for FSM **(CSDA)**	Assesses what policies, laws, institutions, processes and budgets exist for FSM services, and where gaps are. Assess the local enabling environment and quality of service delivery along the sanitation service chain, identifying areas for attention. Produces a scorecard.	**Diagnostic** of the local enabling environment, distinguishes its complexities.	Identifies areas of action, but not what to do.	Balikpapan
Prognosis for Change **(PFC)**	'Why is it like this? Who benefits, who loses out? What factors could facilitate improvement of the services?' Identify the interests and incentives that could block action, and possible entry points for overcoming them.	**Diagnostic**: political economy analysis	Best if linked with previous tool; hard to find good consultants.	Dhaka

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Tool	Description	Use	Limits	Examples
Faecal waste rapid assessments IRC (2015)	IRC's alternative to the SFDs and CDSAs, designed to fit with IRC's Whole System Approach.	**Diagnostic**: FSM situation and ecosystem		Still being tested **WaterAid**: Cambodia in Siem Reap
Urban sanitation status index (USSI) Developed in 2015	Uses composite indicators across the sanitation chain, and mixture of household surveys and focus groups, to map scores in different neighbourhoods of the city.	**Diagnostic**: mapping across the sanitation chain.	Methodology is not public.	Maputo (Annex 2)

Prioritisation tools

Tool	Description	Use	Limits	Examples
SaniPath Emory (2014)	The tool assesses exposure to faecal contamination in urban, low-income settings. The results of this assessment can be used to characterise a neighbourhood or city according to a matrix of faecal exposure pathways. The outputs serve as a simplified, but still informative, means of identifying priorities for sanitation investments or interventions.	**Prioritisation** given health issues. See is it for me?	Localised – can prevent city-wide thinking. May not tell new things if an SFD exists. Can be academic.	Accra **WaterAid**: Cambodia in Siem Reap
Sanitation Safety Plan **(SSP)** WHO (2014)	Brings health and sanitation sectors to map contamination pathways and highlight risks and priority intervention areas (geographical and/or sectoral). Uses WHO guidelines for wastewater and excreta management as a starting point.	**Prioritisation** and linking with health professionals.	Focuses more on describing the system and monitoring risks than improving it.	South Africa
Service-delivery action framework	'Which aspects of the enabling environment need development next?' Guide identification of actions in relation to the enabling environment, necessary to deliver desired results.	**Decision support**: prioritisation ('what next'?)		Dhaka

Planning and decision-making tools

Tool	Description	Use	Limits	Examples
SaniPlan CEPT and PAS (2015)	An Excel-based decision support tool, looking at city sanitation through 1) performance assessment, 2) planning and 3) financial planning. A distinct version has been made for FSM.	**Decision support**, towards a practical plan	Focused on India	Wai

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Tool	Description	Use	Limits	Examples
FSM Toolbox Asian Institute of Technology (2016)	A collection of tools designed for city sanitation planners and associated consultants, following a typical city sanitation planning process. It comes with many guidelines, example contracts and ToRs, and training modules, and as such is more a library of practical documents along the way	**Planning**, especially going through practical steps and documents for planners	Many tools and documents are still missing.	N/A
Septage Management Decision Support MWH for Oxfam with USAID funding (2015)	An Excel-based tool to determine the main elements of an FSM plan, such as quantities to collect, a collection plan, CapEx and OpEx of collection, transport and treatment, and suitable tariffs.	**Planning**, based on financial analysis	Very numerical, to be used after agreement to proceed with a plan. Needs good input data.	Philippines
Cost-effectiveness and options assessment UTS-ISF (2007-10)	Process to compare options for sanitation or wastewater on the basis of cost-effectiveness (original report) and sustainability (as in the Can Tho case study). It combines technical, financial and geographical analysis, to provide a ranking of options and inform investment.	**Technology choice**, based on sound assessment and ranking; use utilities' language.	Needs good input (e.g. for wastewater flows)	Can Tho, Vietnam
Intervention Options Assessment	Guide for identification of technical interventions along the service chain – linking to program design guidelines.	**Technology choice**		Dhaka
SaniTech CSTEP (2015)	Tool for assessing sanitation technology options in Indian cities, based on GIS data, socio-economic data, and physical conditions, using a range of possible systems.	**Technology choice**, for Indian planners	Cost-benefit analysis remains limited.	Demo city
Integrated design approach for FSM Being developed by EAWAG	Tools under development to favour the reuse of sludge products, by looking: marketing; siting treatment plants given collection and transport; optimise treatment for recovery; characterise FS; and lab methods	**Technology choice** (for recovery)	Very centred on resource recovery, which may not be the main priority.	N/A (under development)