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Are we doing the right thing?

Critical questioning for city sanitation planning

SNV

UTS Institute for Sustainable Futures

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1 Introduction

1.1 Why this learning paper is needed

It is widely perceived that city-wide sanitation planning can enable coordinated improvements in efforts to achieve universal access to sustainable sanitation services in urban contexts in developing countries.

However, our observation is that city sanitation planning is not always effective and does not always lead to (in part or in full) sustainable and equitable outcomes. Indeed the planning process may or may not result in, or inform, implementation. This observation resonates with existing reviews and critiques of sanitation planning over the past decades (Kennedy-Walker et al. 2014; Luthi et al. 2011). A key factor to recognise is that in the majority of developing countries, demand for sanitation services by both citizens and politicians is low, and this strongly affects the potential for plans to be turned into reality.

It is therefore important to reflect on and critically question sanitation planning in order to get the most value out of city sanitation planning processes and to approach such planning processes with realistic expectations.

1.2 Aim of this learning paper

Our aim is to provoke practitioners, policy makers and development agencies to reflect on their approaches to city sanitation planning and the assumptions that underlie them.

Box 1 Terminology: Definition of sanitation in this document

The definition of 'sanitation', and hence what comprises city sanitation planning, varies from country to country. Recently countries such as Indonesia, India and Nepal have included solid waste and stormwater management within the definition of 'sanitation'.

In this learning paper, unless otherwise stated, the focus is narrower, and is limited to the management of human excreta such that faecal pathogens do not come into contact with people, animals, insects, crops or water sources, and environmental objectives are also met.

Ensuring protection of public health and environmental outcomes requires attention to the entire sanitation service chain from source to final destination, and inclusion of both solid and liquid streams.

Figure 1 Sanitation service chain for on-site sanitation
Source: Adapted from Tilley, 2014.

The document is not intended as a critique, and it does not recommend a particular planning approach. Nor does it add to existing stocks of guidance materials on how to develop sanitation plans (e.g. Sanitation 21, WHO Sanitation Safety Planning Guide 2015, Community-Led Urban Environmental Sanitation Planning (CLUES), guidance for City Sanitation Strategies (SSK) in Indonesia and City Sanitation Plans (CSPs) in India etc).

Rather, our premise is that raising awareness of underlying assumptions in sanitation planning may lead to better targeted approaches to sanitation planning, if and when those assumptions are shown not to match realities.

1.3 Approach to the development of this paper

The development of this paper involved:

- A review of planning theory as it has been already applied to sanitation planning;
- A desktop review of city sanitation planning approaches in five countries in Asia (Indonesia, Thailand, Malaysia, India and the Philippines) including identifying any relevant links with planning theories;
- Linking theory and practical examples to identify assumptions implicit in each approach;
- Identifying the implications of the approaches taken and the credibility of assumptions as played out in the case studies.

The desktop review of Indonesia was complemented by the authors' direct experience in the Indonesian sanitation sector and research focused on sanitation planning (Chong et al. 2015), which enabled more illustrative examples to be drawn from the Indonesian context than was possible for the other case study countries. The use of Indonesian examples in questioning the veracity of assumptions may thus appear more critical of Indonesia's approach than it is of the approaches of the other countries. However, the authors acknowledge that many of the assumptions found in Indonesia are likely to feature in other countries as well. Furthermore, Indonesia's significant commitment to and investment in extending improved sanitation services must be recognised as laudable. The Philippines literature review is complemented with an interview with Mr David Robbins (an independent consultant) who provided additional insights.

2 Why questioning is needed

In many developing countries, establishing and sustaining city-wide sanitation services is a significant task. It requires a combination of well-functioning technologies, sustained demand, effective management and sustainable financing, within a broader enabling regulatory and policy environment (Ross et al. 2014). It also requires political will, a key factor found to be missing in the sanitation sector (Cairncross et al. 2010; WSP 2011). In addition, ongoing monitoring, with 'feedback loops' for progressive improvement, is key to effective service delivery (Northover et al. 2015).

City sanitation planning can play a role in addressing many of these areas, and has the potential to provide vision and strategic direction to guide investment as cities turn to addressing the challenges they face.

However, in many locations, limitations in the outcomes of city sanitation planning processes are evident. Various contributing factors can be identified. First and foremost is a consistent lack of consumer demand and political will to support services. Beyond this, other factors include lack of enabling regulations and institutions, low capacity, inability of processes to fit the context, weak management and follow-up, and limits to available financing or unsustainable financial models.

In addition, the aims of a sanitation planning process may not always be clear. These aims can range from local stakeholders having a better understanding and ownership of sanitation, to the ultimate goal of improving the health and wellbeing of the city population. An e-discussion on 'Urban Sanitation Planning and Finance' in 2013, for instance, touched on a wide range of possible aims. The possible aims can be seen as lying on a continuum, and almost a model for how sanitation planning can effect change (see figure 2).

Our usual approach to addressing failures is to analyse the results from the perspective of what worked and what did not, and modifying actions to make the strategy (or 'plan') more effective in getting results. It is thus assumed that through rational analysis of what happened, alternative solutions/ approaches will be found. There are, however, limits to the effectiveness of this approach to problem solving, because sometimes they fail to identify the underlying causes of the problem.

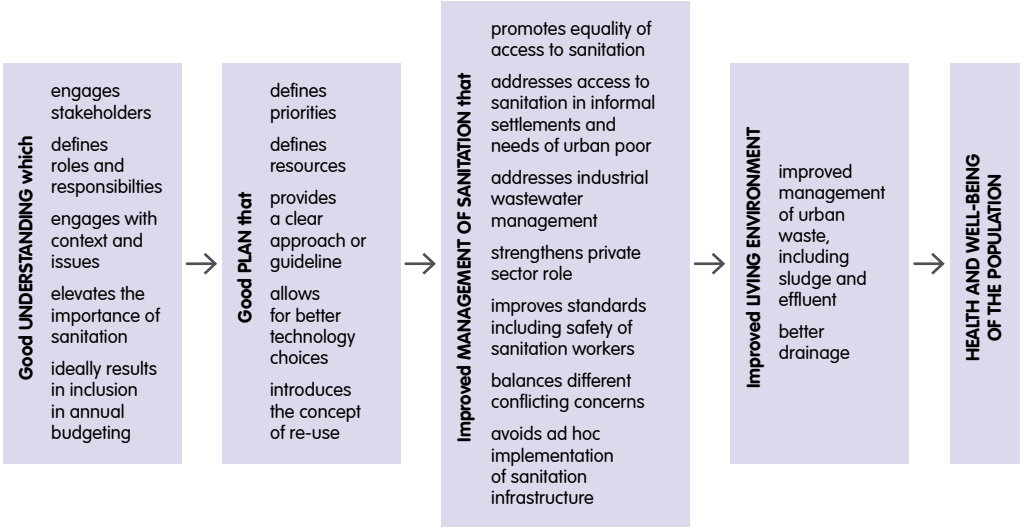

Figure 2 Spectrum of aims of urban sanitation planning and conditions for success
Source: based on D-Group discussion, 2013.

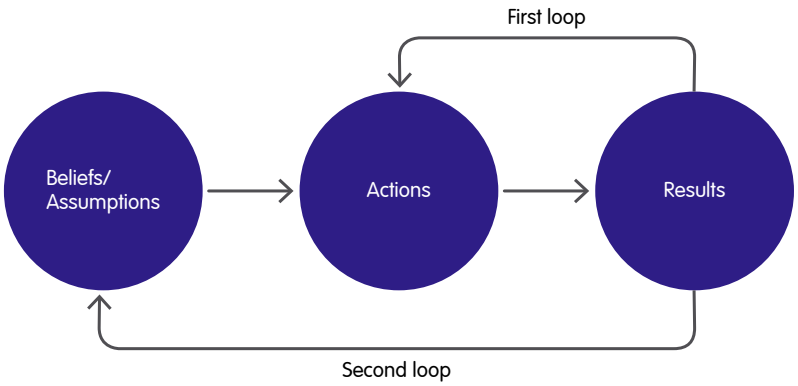

Figure 3 Double-loop and single-loop learning

Organisational learning theory uses the concept of 'double-loop' learning (Argyris and Schon 1978) that goes more deeply into the causes of persistent challenges by questioning the assumptions that led to the adoption of certain actions and strategies (see box 2 below).

In double-loop learning, learners confront and reflect on their underpinning beliefs, ideas or assumptions (see figure 3). This type of learning is important for enabling practitioners and organisations to make informed decisions in complex and rapidly changing contexts (Argyris 1990).

Box 2 Illustrations of double-loop learning

Example 1
Student: How should we mow our lawns in a way which minimises environmental or greenhouse gas impact – using a petrol powered lawn mower or an electric lawn mower?

Professor Frank Fisher: What if you asked yourself why you think you need a lawn?
Source: Pers. comm. A student of Prof. Frank Fisher, Monash University Australia

Example 2
A thermostat can be used to control room temperature. The thermostat takes the action to turn the heating up or down, to maintain a specified temperature. This is analogous to single- loop learning.

The thermostat has no capacity, however, to question whether the specified temperature is suitable for the people in the room.

That would be double-loop learning.
Source: Argyris and Schën 1978

Cities are clear examples of complex and rapidly changing systems, particularly in countries where urban population growth and economic development continue apace, and where the socio-political context strongly influences the directions taken. As such, the concept of double-loop learning can be usefully applied to city sanitation planning, to help us critically question our assumptions before we identify potential alternatives.

In addition to double-loop learning, this paper also draws on planning theories to help us understand the typical assumptions that underpin different planning approaches. The following section outlines these and considers them in the context of city sanitation planning.

3 Planning theories

Planning theories provide insights into the variety of sanitation planning approaches seen across developing country contexts. The discipline of planning offers a number of different theories and traditions derived from different epistemologies[1], worldviews and assumptions. The highly cited work of Hudson (1979) notes that while there are several possible schemes for classifying planning theories, some are rarely reflected in planning practice. This section draws on literature to describe planning theories relevant to sanitation planning. It summarises the defining features of each approach and notes their underlying assumptions. The section ends with a brief discussion on how these theories connect with approaches to sanitation planning.

3.1 Planning theories and their assumptions

Planning practice has predominantly centred around the tradition of rational comprehensive planning theory, with its four classical elements (Hudson 1979; Allmendinger 2009):

- Goal setting
- Identification of alternatives to meet goals
- Evaluation of options
- Implementation

While this theory has a capacity for methodological elaboration, its attractiveness comes from its simplicity, which is also criticised as being unrealistic (Hudson 1979). Several other theories have emerged in response to the limitations of this approach. Hudson argues that these theories are often complementary, but also sometimes strongly at odds with each other, reflective of the tensions and contradictions in society at large. As such, Hudson suggests that the parallel application of more than one planning theory can be helpful for arriving at valid, multi-dimensional perspectives on social issues and appropriate actions.

Inspired by Hudson (1979), McConville (2010) proposes a typology of five theoretical traditions that are helpful for structuring our discussion on approaches to sanitation planning. Of these, we see the influence of four traditions evident in urban sanitation planning approaches in our case studies: rational comprehensive planning; pragmatism/ incremental planning; collaborative planning and advocacy planning.[2]

Their defining characteristics are summarised in table 1 (see next page) and are described briefly. The underlying assumptions of each approach in relation to their focus, the role of planners, the planning method and expected outcomes, are also described.

Assumptions underpinning the rational comprehensive approach

- It is based on a simple and highly structured view of the world in which truth is based on facts.
- Planning is a technical and apolitical process.
- The technocratic planner is to be objective and value-free in his/her approach to decisions. Rationality is absolute rather than the product of particular worldviews.

The appeal of rational comprehensive planning lies in its ability to explain planning decisions so they appear to be derived from reasoned argument (Allmendinger 2009). It views planning as a scientific enterprise led by technocratic experts, based on setting objectives,

[1] Most simply, this refers to how people create knowledge and meaning – 'how we know what we know'

[2] The fifth theory chosen by McConville is post-modern planning, which is focused on individual qualities of stakeholders. It claims that all knowledge is socially constructed and all views and experiences are equal, so the planning process involves participatory dialogue leading to many individual plans. This approach was not characteristic of any aspects of the city sanitation planning examples reviewed for this paper.

Table 1 Key characteristics of planning theories evident in urban sanitation planning

Planning theory	Planning focus	Role of planner	Planning method	Outcome
Rational Comprehensive	Achieve aims by scientific and objective means	Objective expert	Choose between options using rational criteria based on facts	Comprehensive plan
Pragmatism	'Getting things done'	Leader/ facilitator: Act on ideas that make sense, and help others to act.	Evaluate options drawing on experience and intuition	Compromise patchwork plans
Collaborative	Agreement through dialogue with people affected	Moderator: enabling communication between stakeholders	Interpersonal dialogue, mutual learning and consensus building	Consensus for action
Advocacy	Applying principles of social justice	Defender of interests of the less powerful	Normative, debate and discussion	Plural plans

Source: Adapted from Allmendinger (2009), Hudson (1979) and McConville (2010)).

and devising the means for reaching those objectives through a rational process of analysis. The rational comprehensive approach emphasises the production of 'plans' as an output.

Critics argue that the assumption of a simplified version of reality misses the more messy and open nature of the real world, so plans cannot be implemented fully in real-world contexts (Allmendinger 2009). Another common criticism of the rational comprehensive approach is that the resultant master plans are almost never implemented, but rather get filed away except in rare cases when vast new sources of funding become available in lumps (Hudson et al. 1979).

Assumptions underpinning the pragmatism approach

- Experience is the best arbiter of what is true and practical.
- Practical answers should be reached through socially shared and democratic means.

Pragmatist planning theory takes a highly practical approach to planning, based on an assessment of what works best in a given situation. When selecting between different options, planners are likely to discount some and favour others on the basis of intuition or experience. The focus is on addressing problems rather than setting goals based on discourse, shared inquiry and common purpose. Thus, stakeholder participation is key to pragmatism. The criticism of pragmatism is that incremental improvements with short time horizons limit opportunities for making leaps in progress (Allmendinger 2009; McConville 2010) and may also contribute to path lock-in.

Assumptions underpinning the collaborative approach

- It is the process of planning that is important, more than producing a plan.
- Consensus can be reached by sharing multiple perspectives.
- Those affected by planning decisions can and should influence the planning process.

Collaborative or transactive planning grew out of approaches to help people take more control over the social processes that govern their welfare. The planning process involves face-to-face contact and open dialogue, enabling mutual learning (Hudson 1979), and appreciation of other viewpoints that are expected to converge towards consensus for action (McConville 2010). More emphasis is placed on the

processes of personal and organisational development than on the functional objectives of producing a plan (Hudson 1979). The collaborative approach is participatory bottom-up planning, in which planning provides a means for people to be empowered and to influence the decisions which affect their lives. Critics see collaborative planning as idealistic and difficult to apply in practice (McConville 2010).

Assumptions underpinning the advocacy approach

- Planning is a normative undertaking explicitly to achieve social justice.
- There is no single 'public interest' in planning; different interests are served differently and need to be debated.

Advocacy planning is usually applied to defending the interests of social justice, supporting environmental causes, and defending the weak and marginalised against established powers of business and government (Hudson 1979). Planners aligned with advocacy planning theory enable citizens to be active in planning by taking a role similar to advocates in the courtroom in that they help citizens to present their cases (McConville 2010). This form of planning is expected to take a broader set of issues into consideration than physical/spatial form. It considers people and their political, social, cultural and economic practices (McConville 2010). It challenges the assumption that there is a unitary public interest, and calls for the development of plural plans rather than a single plan (Hudson 1979).

3.2 Planning theories in practice in the sanitation sector

The evolution of planning theories according to the planning literature as described above may be compared with the evolution in approaches to sanitation planning. The dominant approach to city sanitation planning consists of the elements in the schematic below – a classical set of linear activities or steps that lead to the development of a plan (as distinct from implementation or results). This approach aligns strongly with rational comprehensive planning theory.

Over the last decade or so, the limitations of this linear 'rational comprehensive' approach to sanitation planning has increasingly been recognised. In particular, the kinds of expert-led master plans produced in the past have commonly been developed by technical specialists with limited participation from other stakeholders, leading to challenges in ownership by relevant actors to follow them through. This has led to important variations, such as the inclusion of community participation or other forms of stakeholder participation.

This inclusion of stakeholder participation aligns with 'pragmatism planning theory', where the planning process involves stakeholders with relevant knowledge and experience having discourse together. 'Pragmatism planning theory' also implies a focus on addressing problems rather than setting objectives, and this is commonly seen in sanitation planning in developing country contexts. It results in the most immediate and visible problems being given attention, rather than planners taking a step back to assess the bigger picture. It can also result in decision-makers taking 'non-planned' actions and interventions on the basis of their knowledge and experience and intuition.

Collaborative planning theory anticipates that affected people and relevant stakeholders can and should contribute to the planning process, and that their knowledge and experience is as valid as expert knowledge. In areas where the relevant people have accumulated experience (e.g. farmers concerning

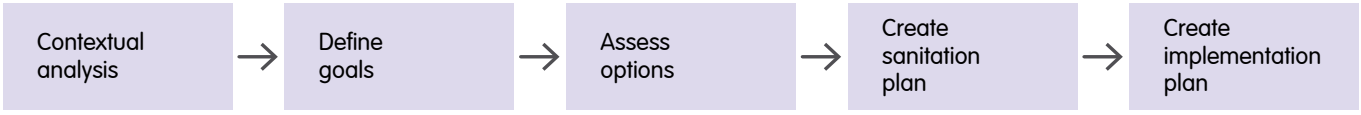

Figure 4 Classical steps in city sanitation planning

agriculture), this can lead to effective solutions. However, in the case of sanitation, both service users and stakeholders such as local government departments may not have the knowledge, motivation and experience required to meaningfully participate in sanitation planning in the way that collaborative planning theory envisages. Nevertheless, aspects of the theory can be seen in some city sanitation planning processes, and it is important in the context of demand for and payment of services, in self-determination (Kennedy-Walker, et al., 2014; Rosenqvist, et al., 2016), and in cross-sectoral collaboration within local government. Aspects of collaborative planning may be seen in the sanitation planning models, Sanitation21 and Household Centred Environmental Sanitation, in which the plural interests of stakeholders in different planning domains are considered – the household, the community, the city and beyond the city.

Advocacy planning theory is concerned with social justice and power differentials. The process envisaged by the theory, modelled on courtroom processes, is rarely formally applied in sanitation planning processes. It is relevant for striking a balance between investments in sanitation services across wealthier portions of a city which have a higher ability to pay, and providing services to all, as prescribed by the United Nation's Human Right to Sanitation resolution. Sanitation planning approaches that target particular vulnerable groups and promote social justice could be seen as being associated with advocacy planning, and may for instance be led or instigated by non-governmental organisations lobbying for the interests of disadvantaged communities.

Just as planning theories are combined in practice, as noted by Hudson (1979), sanitation planning in practice reflects a mix of these approaches and their underlying assumptions (see figure 5). This potentially mitigates against the limitations of a single approach. The use of a single approach is likely to lead to partial planning or partial solutions that may turn into barriers in the future. This is especially pertinent to the rational comprehensive planning approach, which may well be incapable of delivering the 'comprehensive' solutions its name might suggest, unless authentic forms of the other approaches are incorporated. This is important to consider, since the influence of rational comprehensive planning is strong in current sanitation planning practice.

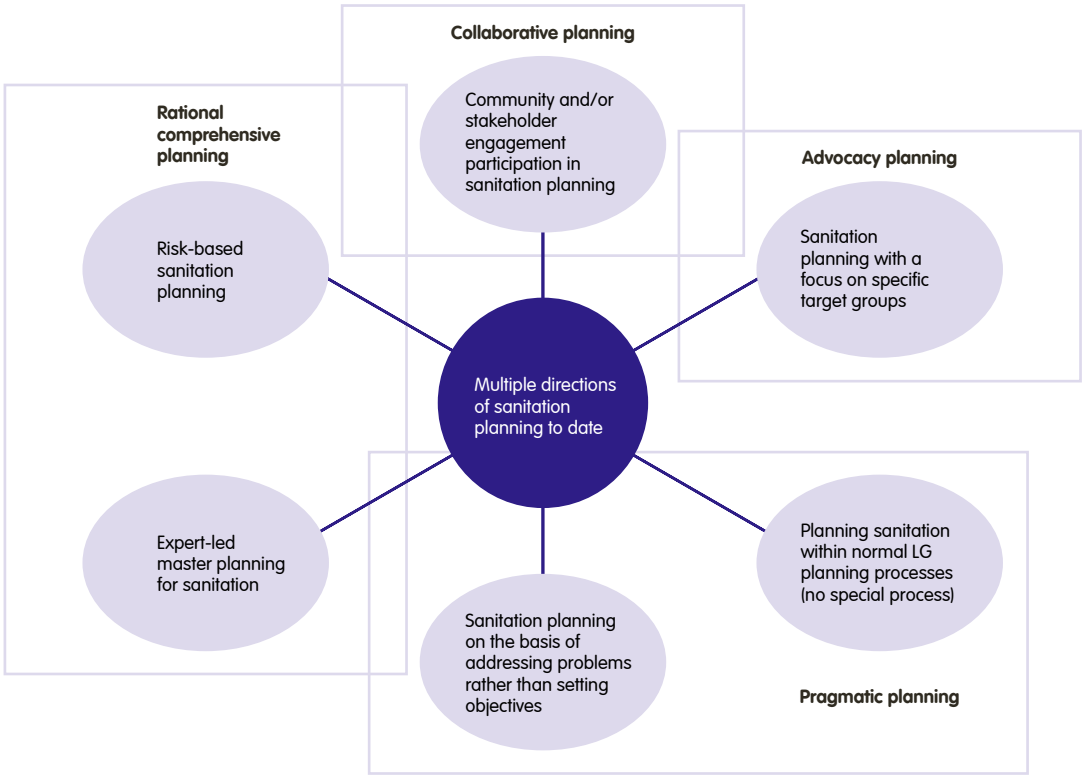

Figure 5 Sanitation planning approaches in the context of planning theories

4 National approaches to sanitation planning: overview of cases

Sector development and planning relies on national governments' commitment and prioritisation of sanitation, and on the presence of drivers in the form of policies and regulations. Although most countries have some form of decentralisation, the Human Rights Council (2013) stresses that national governments bear most of the responsibility for ensuring the realisation of human rights, including 'a duty to regulate and monitor the way in which local governments respect, protect and fulfil the human rights to water and sanitation'.

In this section we provide an overview of our country case examples. In most cases, the motivation for undertaking city sanitation planning appears to come from national governments, partly through their own prioritisation for a plan or strategy to guide the implementation of city-based sanitation, and there is often some degree of involvement by international donors. In its roll-out to the local level, the planning approach adopted by national governments reflects the particular forms of decentralisation adopted by each country – devolution[3], delegation[4] or deconcentration[5] (UNDP 1999).

4.1 Thailand

In Thailand, planning and coordination of sanitation is led by the Ministry of Public Health in accordance with the National Economic and Social Development Plan (NESDP). There is a clear line of responsibility for implementation in the form of a dedicated operational system within the Ministry of Public Health, involving the Department of Health and its decentralised satellites (WaterAid 2013). An associated monitoring and evaluation system in a decentralised but highly hierarchical system was particularly strong, and has enabled retrospective analysis of data (WaterAid 2013).

Backed by a strong commitment to sanitation from the nation's leaders, Thailand has made impressive progress (across both urban and rural areas) – achieving 'near universal' coverage in 'latrine access' in 40 years from less than 1% access in 1960 (WaterAid 2015). However, key gaps with respect to excluded groups and wastewater treatment have been identified more recently (Human Rights Council 2013).

The planning approach partly reflects rational comprehensive theory, especially with respect to the hierarchical, health expert-driven approach, and the national adoption in 1980 of a standard design for latrine technology (water sealed latrines). But it departs from the theory in that there is little emphasis on the production of 'a planning document' or on the planning activity or process itself, with a greater focus on implementation or 'getting things done', which aligns with pragmatism theory.

4.2 Indonesia

The national government of Indonesia has a strong influence on planning by the local governments of cities and regencies (LGs), who are responsible for delivery of key services under Indonesia's decentralisation laws. The Government of Indonesia's (GoI's) program for Accelerated Sanitation Development for Human Settlements (PPSP) aims for achieving universal access to sanitation by 2019. The

[3] Devolution commonly refers to genuine decentralisation, where authority is transferred to autonomous lower-level units (e.g. local governments) and the central government relinquishes certain functions or creates new units of government that are outside its direct control (UNDP 1999).

[4] Delegation refers to the transfer of government decision-making and administrative authority and/or responsibility for carefully spelled out tasks to institutions and organisations that are either under indirect government control or are semi-independent. Most typically, delegation is by the central government to semi-autonomous organisations not wholly controlled by the government but legally accountable to it (UNDP 1999).

[5] Deconcentration consists of subordinate lower-level units, such as regional, district or local offices of the central administration or service delivery organisation, who usually have delegated authority in policy, financial and administrative matters without any significant independent local input. It involves a limited transfer of authority for specific decision-making, financial and management functions, still under the jurisdictional authority of the central government (UNDP 1999).

program is led by BAPPENAS (the State Ministry of National Planning). LGs must develop city sanitation strategies (SSK) for delivery of wastewater, drainage and solid waste services. Facilitators, guidance documents, decision tools and templates for the SSK are provided to LGs so that they can undertake a planning process strongly prescribed at the central level. The influence of external agencies has been important in driving the Indonesian sanitation sector (Garbarino et al. 2011) – especially the influence of the World Bank Water and Sanitation Program (WSP) in program design, and the Dutch-funded Urban Sanitation Development Program (USDP) through technical support.

SSK are designed with a five-year planning horizon, with objectives and selected options that are aligned with each city's/regency's Medium-term Development Plan and Regional Spatial Plan. The model for sanitation development follows a comprehensive and systematic planning and implementation process, with an expected three-year timeline as outlined in table 2.

The influence of rational comprehensive planning theory and its underlying assumptions of planning as a rational and technical undertaking are clearly evident in the planning approach. Aspects of collaborative planning are evident in the explicit involvement of multiple agencies at the local government level, in line with collaborative planning theory, although community input and participation in planning is minimal.

The approach as originally designed was expected to lead to 'local ownership of sanitation challenges and improvements' as a result of the local implementation of the planning process, according to the World Bank's Water and Sanitation Program (WSP 2009) who contributed to the design of this centrally-controlled locally-undertaken planning model. In practice, recent research reveals that as the approach has been rolled out at scale, many LGs undertake the planning process as a 'formality' with little sense of local ownership of the process or products, or even familiarity with its contents by members of the local level government sanitation working group. Rather, the sanitation strategy process is viewed by LGs as a means to ensure they comply with regulations and cooperate with national governments with the objective of qualifying for funding (Chong et al. 2015).

With a few notable exceptions, so far the quality of planning documents produced by LGs is low, and there has been little impact of these documents on increasing investment in sanitation at the local level. However, the process has contributed to greater awareness about sanitation (Koppen & Woersem 2015).

Table 2 Planning process and timeline for city sanitation strategy development in Indonesia Source: Pokja AMPL, 2012.

Planning timeline		
Preliminary	Awareness raising by campaigns, education and advocacy activities Institutional and regulatory preparation for participation (in the district)	Monitoring, evaluation, and guidance (this is intended to run from the start and continue throughout all stages)
Year 1	Situation assessment including an environmental health risk assessment and mapping (first six months) Preparation of the district/city sanitation strategy (SSK) (second six months)	
Year 2	Preparation of the Program Memorandum (MPS) – memorandum of commitment for the implementation of select programs, with budgets allocated from regency/city, provincial and central government.	
Year 3+	Program implementation	

4.3 India

India's sanitation planning process has several features in common with that of Indonesia. The National Urban Sanitation Policy (NUSP) 2008, prepared by the Ministry of Urban Development (MoUD), is the driving policy that requires all urban local bodies (ULBs or city local governments) to prepare City Sanitation Plans (CSPs). ULBs prepare their CSPs in accordance with a strategic planning framework, to include a vision, mission and goals along with strategies to meet the goals (SSWM 2015). The German development agency GIZ India is actively supporting MoUD in the implementation of the policy, providing technical support for the various aspects of the program at central, state and city levels (Walther 2012).

Indian CSPs have a 30-year planning horizon, phased as short term (5 year), medium term (10-15 years) and long term (20 + years) for implementation[6].6 The planning process has three stages: Initiating city sanitation plan; Situation assessment; and Finalisation of city sanitation plan. City sanitation planss are broadly defined as having five key steps:

1. A consultative multi-stakeholder process
2. Collection of data on city-wide sanitation
3. Situation analysis and data interpretation
4. Preparation of city sanitation vision, measures and action plans
5. A road map for CSP implementation

The staged, data-driven process aligns with rational comprehensive planning theory. A methodology developed by WSP is being used for rating cities based on indicators for output; process; and outcomes (Raman 2010). Preliminary results of the assessment are being used as a baseline for future CSP ratings, and evaluation of the program's outcomes is not yet available.

4.4 The Philippines

In the Philippines, in contrast to Indonesia and India, the central government has a more light handed approach to achieving the national goals of its Philippine Sustainable Sanitation Roadmap 2010 (PSSR) through city governments who are responsible for local services. The Department of Public Works and Highways (DPWH) acts as the lead agency which coordinates sanitation activities with other agencies.

Each city is expected to develop its own sanitation service model and provide enabling legal backing by passing local government ordinances that are consistent with national policy guidelines as the basis of plans and programs that are developed locally (PSSR 2010). The Department of the Interior and Local Government (DILG), which is responsible for strengthening the capacities of local governments, is currently promoting a model local ordinance to local governments that was successfully used in one city (Robbins, 2016, pers. comm., 25 February).

City sanitation planning processes across the country take diverse approaches to service delivery as a result of the policy. For example, different cities have developed different institutional models for faecal sludge management for urban onsite systems, as appropriate in the contexts of local institutions (Robbins et al. 2012). These include public-public partnerships between the LG and a local public water district (e.g. Dumaguete City), private-public partnerships (e.g. San Fernando City), and concessionaire agreements between a private company and national government (e.g. Manila).

This approach aligns with pragmatism planning theory, with locally relevant stakeholders creating a patchwork of plans focused on 'getting things done'. It implicitly assumes that the national target for universal access to sanitation by 2028 will be met through enabling each LG to develop its own approach to sanitation. However, only a limited number of larger cities have implemented sanitation services so far, indicating that the efforts of the national government at enabling and encouraging local governments to deliver sanitation services have been insufficient (Robbins, 2016, pers. comm., 25 February).

4.5 Malaysia

Malaysia has adopted a distinctly different approach to sanitation service delivery. The Malaysian government federalised and privatised sewerage services, establishing Indah Water Konsortium (IWK) as a government-owned company to provide

[6] http://www.sswm.info/sites/default/files/reference_attachments/GIZ%202013%20City%20Sanitation%20Plan%20-%20A%20Primer.pdf

nationwide sewerage services under a concessionaire arrangement. The national government provides the enabling regulatory context through the passage of relevant acts and laws, under which IWK can plan with the autonomy of an independent company – a delegated form of administration able to act at the local level.

IWK undertakes sanitation planning at multiple levels in accordance with regular business management practice for infrastructure service provision. Business plans focus on planning for three-year periods that define key focus areas (e.g. staff motivation and development), which relevant departments such as the Human Capital and Administration division then operationalise (IWK 2013). Through systematic infrastructure improvements since taking over national sanitation service provision, IWK provides connected services to 20 million people (in 2013), up from 2.5 million in 1994.

The overall planning process shows several planning theories at play. Infrastructure/asset management planning is largely treated as a technical undertaking delivered by technocratic experts in line with rational comprehensive theory, while business planning processes align with pragmatism, drawing on the experience and intuition of managers. Collaboration with policy makers and infrastructure developers towards instituting sewerage planning and development controls including dialogue and consensus building may be linked with collaborative planning theory. However engagement with communities as key stakeholders does not seem to be significant in this process.

5 City sanitation planning in practice: Casting a light on assumptions

This section illustrates some assumptions that can underpin city sanitation planning, and it shows how these can influence planning processes and outcomes. It poses significant 'critical questions' that can promote reflection and double-loop learning on various aspects of city sanitation planning.

Based on our desktop review of city sanitation planning processes in five countries, we have identified eight aspects of planning in which assumptions are evident in the way a process is designed and how it is undertaken. We describe these aspects and associated assumptions and, with reference to our case studies, explore how they have influenced planning processes and outcomes. We do not suggest that this set of eight is exhaustive, and additional areas could be added. However, these eight aspects are key features of sanitation planning which require greater reflection and interrogation by sector practitioners and decision-makers.

Our direct experience and understanding of the sanitation sector in Indonesia has helped us greatly in identifying these aspects of planning. It also means that, in our use of case studies to illuminate the discussion on assumptions, we use Indonesia more often than the other countries. This is done, not to single out Indonesia for criticism, but to highlight how assumptions play out in ways that are likely to occur in other countries.

These eight areas are structured under headings representing several key considerations within approaches to city sanitation planning:

1. Interplay of national and local dynamics
2. Piloting and scaling models
3. Leadership and collaboration
4. Skills and capacities and motivation to engage in sanitation
5. Engaging communities
6. Securing financing
7. Incentives for effective planning
8. Reactive versus idealistic planning

5.1 Interplay of national and local dynamics

Under what conditions does bottom-up local/ city-based planning generate ownership and effective outcomes?

What does it take to ensure top-down guidance results in quality and coherence of local planning purposes?

As noted in the previous section, national governments are key drivers of sanitation planning, irrespective of the decentralised administrative arrangements may exist. The balance between the imposition of national government requirements on local governments, and the level of autonomy experienced by local governments or implementation agencies to respond to their particular context and innovate, has a critical impact on the 'ownership' of city sanitation plans by local government. At one end of the spectrum, there are top-down approaches completely driven by central governments or centralised authorities; at the other, there are bottom-up approaches where local actors (e.g. local governments, communities) have complete autonomy.

The presence of national drivers for sanitation means that in our case studies there were no cases of pure bottom-up sanitation planning in which local actors are completely free to plan. Rather, planning was locally led while being influenced to different degrees by higher levels of government – explicitly described in Indonesia as a 'top-down meets bottom-up' approach to planning (WSP 2009).

Assumptions associated with top-down approaches to planning include:

- Central governments are best placed to provide the framework for cities across the country for rapid scale up of sanitation services.
- A uniform national approach to sanitation is needed in order to achieve national targets in a coordinated way.
- Centralising planning is the most efficient way to prompt and guide action, and adapting to local

contexts is less critical than having a nationally coordinated approach.

Assumptions associated with combined top-down/ bottom-up approaches to planning where local planning processes are guided by national frameworks include:

- Local governments will have a sense of ownership of their sanitation issues when they undertake the planning process while following a national framework.
- If you design a quality process or methodology (top-down) then the process, outputs and outcomes will be of a high quality.
- Local people are best placed to decide on what is required and suited in their particular local context.
- Sanitation provision is urgent. Local governments need to act quickly with support from national government.

The varying degrees of top-down control and bottom-up autonomy for local planning may be viewed as a spectrum. We have placed our case study countries on such a spectrum (see figure 6), to illustrate this concept. The relative placement of each country on the spectrum is indicative only.

Amongst our case studies, Thailand takes a top-down approach aided by the hierarchical organisation of its health services ministry and decentralised satellites with de-concentrated administrative powers that enable clear lines of accountability. This has led to a uniform national approach that has yielded rapid improvements in access to sanitation.

Malaysia's approach involves government-delegated authority transferred to Indah Water Konsortium (IWK). As the owner of IWK, the government retains control and oversight through its contractual arrangements with IWK. The company operates nationally, and city sanitation planning could be viewed as centrally driven from head-office and adopted by its divisions and regional branches.

Indonesia and India have explicitly combined top-down and bottom-up approaches, based on all the assumptions stated above. In particular, the sense of urgency has led both countries to offer guidance and manuals to assist with the rapid preparation of city sanitation strategies/plans. However, as noted in the overviews in the previous chapter, the outcomes of

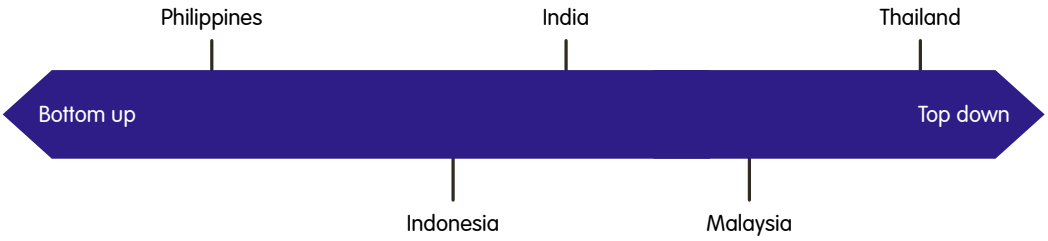

Figure 6 Continuum of bottom-up to top-down sanitation planning processes

sanitation planning in Indonesia in some locations has been limited in terms of changing sanitation services, with planning undertaken as a formality, with limited genuine 'ownership' or commitment to quality (Chong et al. 2015).

While central government has taken an approach involving minimal intervention in the Philippines, the absence of an explicit 'push' for sanitation has meant that little has been achieved overall (Robbins, 2016, pers. comm., 25 February). Overly complicated documentation required by the coordinating agency (DPWH) regarding the implementation of rules and regulations for sanitation development have rendered the documents unusable for several years, so implementation has been weak (Robbins, 2016, pers. comm., 25 February).

The counter-intuitive picture that emerges is that in contexts where local authorities have a low capacity and low interest, rapid improvements in sanitation might best be achieved through strong national leadership. However it cannot be guaranteed that this will always be the case and there is no 'silver bullet'. Outcomes in terms of raising awareness and understanding might be achieved in a more effective way through other means (for example campaigns, training or media) rather than by attempting comprehensive planning exercises.

5.2 The quandary of pilots and scale

To what extent is it appropriate to invest in perfecting planning methods through pilot planning project(s)?

What additional thinking is needed to move successfully from pilot to full-scale projects?

How might the influence of, and constraints imposed by, the macro-environment (e.g., national policies, budgeting and regulations) be proactively taken into account in localised pilots for sanitation planning, and in strategies to move from pilot to scale?

Under what conditions does it make sense to implement a planning approach immediately at scale?

Pilot programs are used in many fields to test ideas, technologies and approaches on a small scale, in a particular country context, before wider implementation. There can be different objectives for implementing a pilot, such as testing an approach in a 'live' but safe environment, using the learning from the pilot to improve the approach, seeking confirmation of intended results and demonstrating an approach to increase buy-in. The experimental status of a pilot projects means that they usually have more resources and support than projects at scale. Piloting has been a feature of some city sanitation planning processes.

The process for city sanitation planning adopted in Indonesia's PPSP program was developed and piloted in 12 cities as the WSP's Indonesia Sustainable Sanitation Development Program (ISSDP) during 2006–2009 (Koppen & Woersem 2015). The aim of the pilot was to 'signal the way forward for sector strategy' to assist the Government of Indonesia (GoI) because it had national sanitation goals 'without a strategy for meeting them in urban areas' (WSP 2009). The approach used in India was similarly tested in a pilot study (World Bank 2015). Six selected cities trialled the city sanitation planning process before it was scaled up nationwide, targeting 480 cities (Raman 2010).

The 'pilot first, then roll out at scale' approach is appealing as a rational argument, and aligns with the rational comprehensive planning theory used by both Indonesia and India.

In contrast, in Thailand and Malaysia, where the influence of pragmatism theory is more pronounced, improvements have occurred as full scale programs, with strong monitoring and evaluation systems (WaterAid 2015), have been implemented rather than pilot studies.

In the Philippines, several large septage management programs were introduced as demonstrations for potential replication, although few have so far been replicated (Robbins, 2016, pers. comm., 25 February). Some other programs were developed as pilot studies under a revolving fund program supported by USAID to test the feasibility of programs for protecting groundwater from contamination (World Bank 2013). Some septage management programs are being promoted by central government, and progress is

being made through the efforts of USAID, Oxfam and others where a number of municipalities and cities have begun the process, and will likely be adopted more widely in 2016 (Robbins, 2016, pers. comm., 25 February).

The assumptions driving the 'pilot first then roll out at scale' approach to planning include:

- A pilot program in a small number of cities will demonstrate the value of a particular sanitation planning approach.
- A pilot program can be replicated at scale across the entire country.
- A pilot program will enable learning which will improve the design of an approach.
- A pilot program focused at local scale can sufficiently take into account the macro-level national context and the constraints it may impose.
- New ideas and approaches should not be introduced more widely until they have been tested to see if they will work.
- If the planning methodology is well developed through a pilot, then the investment choices it dictates will be sound.

The assumptions driving direct action at large scale rather than investment in pilots are:

- Monitoring and evaluation attached to large-scale implementation can inform reflection and improvement.
- Pilots cannot adequately capture the dynamics that will emerge when a process is implemented at scale.

In Indonesia, the nationwide Sanitation Strategy (SSK) development process has sought to replicate the process used in the pilot, though assumptions about the translation of pilots to scale have not held true. The donor-funded pilot included committed and well-qualified facilitators to support each city, and a separate 'WASAP-D' fund for implementation of SSK. To provide sufficient facilitators to assist large numbers of cities/regencies with their planning, the GoI had to hire and train facilitators in annual cycles with limited budgets, a process that has yielded facilitators of mixed quality (Koppen & Woersem 2015) and this has compromised the quality of the planning process. In the majority of locations, there is also no dedicated fund for implementing SSK, so wastewater sanitation competes for funding against other municipal services within current budgeting processes (Chong et al 2015).

As discussed later in the 'Securing financing' section, the planning process doesn't adequately take into account macro-level contraints that arise from linkages between the national and local levels (such as funding mechanisms), and this has limited the value of pilot projects.

These experiences point to the need to critically examine assumptions in the translation of a pilot to larger scales in the context of a bureaucracy. They demonstrate the potential importance of 'piloting' the scaled model (with lower resources etc.) to identify likely challenges that will arise, and the importance of examining the relationship between a local context and the wider macro context in which it exists. Equally, it could also be concluded that there may be limits to the value of city sanitation planning pilots in the context of complex, often bureaucratic and varied governance arrangements across local and national levels. As an alternative, an approach focused on incremental learning with in-built cycles of 'act–do–reflect', which, adheres more closely to the ideas of 'pragmatic planning', could be considered.

5.3 Leadership and collaboration

Under what conditions do multi-stakeholder planning processes deliver better outcomes than single agency leadership?

What does it take to make multi-stakeholder engagement effective?

What incentives exist for invited stakeholders (e.g. related government agencies) to meaningfully participate in a sanitation planning process?

What are the trade-offs between the simplicity of single agency implementation of sanitation planning and active participation by relevant stakeholders?

There is a range of actors who have a stake in sanitation planning and implementation. They include: government agencies at the national, provincial and local levels; communities; donors; civil society organisations; and private sector actors in different countries. Clarity about roles and responsibilities with respect to undertaking or overseeing the sanitation planning process, and clear lines of accountability, are therefore critical. Furthermore, the complexity of multi-stakeholder decision-making needs to be appreciated, and often it is not. The choices about who is best placed to lead, and who is best placed to take part in a planning process depend on the institutional arrangements in different countries and cities.

According to Kvarnstrom and McConville (2007), planning within a local government needs to achieve cross-disciplinary collaboration between its administrative divisions in order to address the diverse nature of sanitation. This approach has been adopted in Indonesia where a circular from the Ministry of Home Affairs prescribes the composition and roles for cross-departmental sanitation working groups (pokja Sanitasi), who are given responsibility for coordination and oversight for the preparation and implementation of the SSK. Membership in the working group is specified according to their positions in divisions of planning, public works, health, environment and financing/budgeting within the LG, while the District Secretary, the most senior bureaucrat in the LG, is specified as the chairperson (MoHA 2012).

Similarly in India, a City Sanitation Taskforce[7] is set up to oversee the planning process, which includes representatives from different sectors of society, including agencies directly responsible for sanitation (divisions and departments of the ULB), agencies indirectly involved or impacted, eminent persons, practitioners, representatives of the different stakeholder sectors, NGOs and sanitary workers. The taskforce is headed by the mayor and convened by the Commissioner of the ULB.

In contrast, a single agency with responsibility for delivery of city sanitation services is responsible for leading the planning process in Thailand and Malaysia – the Thai Ministry of Health in Thailand (WaterAid 2013, 2015) and IWK in Malaysia.

Varying (and sometimes competing) assumptions behind these different approaches to leadership and collaboration for preparing a plan include:

- Leadership by a single agency provides clear lines of authority and accountability.
- Leadership by a single agency increases efficiency in reaching ultimate outcomes.
- Greater levels of collaboration and engagement will lead to strengthened shared ownership of the plan.
- Sanitation demands collaboration and engagement between different administrations/agencies to respond to its cross-sectoral nature.
- Staff/representatives from different sections and agencies can and will cooperate and work together to create a mutually agreed coordinated multi-sectoral plan.
- It is possible for staff/representatives from different agencies with different views and incentives to reach true consensus and thereby have buy-in to the decisions made.
- Within a sanitation planning process it is possible for stakeholders from different agencies to gain sufficient knowledge and sufficient 'care' or interest in the issue of sanitation to contribute to effective decisions.

In practice, bringing together staff from relevant LG departments to form a sanitation working group (pokja sanitasi) in Indonesia has not ensured effective collaboration or empowered decision-making (Chong et al. 2015). Membership on the basis of positions has not ensured the capacity to undertake sanitation projects, or the interest and commitment to sanitation, and staff rotations have led to loss of institutional knowledge and capacity. All those designated as members in the Circular do not participate in the pokja, and this often leaves the pokja with low-level staff who lack the authority to oversee the implementation process.

[7] http://www.sswm.info/category/step-support-national-urban-sanitation-policy-india/preparing-city-sanitation-plans/prepa-2

In Malaysia and Thailand, where planning processes do not involve the sharing of leadership across multiple agencies, the significant outcomes achieved may have been aided by the clear lines of authority arising from a single agency's leadership. One limitation of single agency leadership is that important 'other' perspectives may be missed. Further research would be needed to explore this possibility.

The concept of integrating perspectives from multiple disciplines and multiple sectors within sanitation planning is appealing and important, and consistent with collaborative planning theory, but particular attention needs to be paid to how decisions are actually made when many agencies are involved, and to the existence of incentives for different actors to participate meaningfully.

While the intention of a collaborative approach is positive, this is rarely realised in practice, less so at scale. Power relations, competing priorities and competing interests affect such collaborations, and the absence of clear leadership can result in the 'tragedy of the commons' and little resultant action. Equally, the complexity of the different ways in which individuals and groups interact when attempting to make decisions by consensus should be appreciated (see figure 7) as many possibilities are commonly experienced in collective decision-making. For instance if local agencies see a plan as a means to obtain funding from the national government, the plan is made through 'consensus by inclusion', rather than by working together towards the best sanitation services for improving health across the city.

It is commonly assumed that collaboration involves true consensus, buy-in, mutual understanding and agreement. However, it appears that true consensus rarely takes place in city sanitation planning, and this affects the outcomes of the process. If this is the case, one could question whether an emphasis on extensive collaboration in city sanitation planning is the best choice.

5.4 Skills, capacities and motivation to engage in sanitation

What level of skills, capacities and motivation to learn can we safely assume exist to enable a quality planning process?

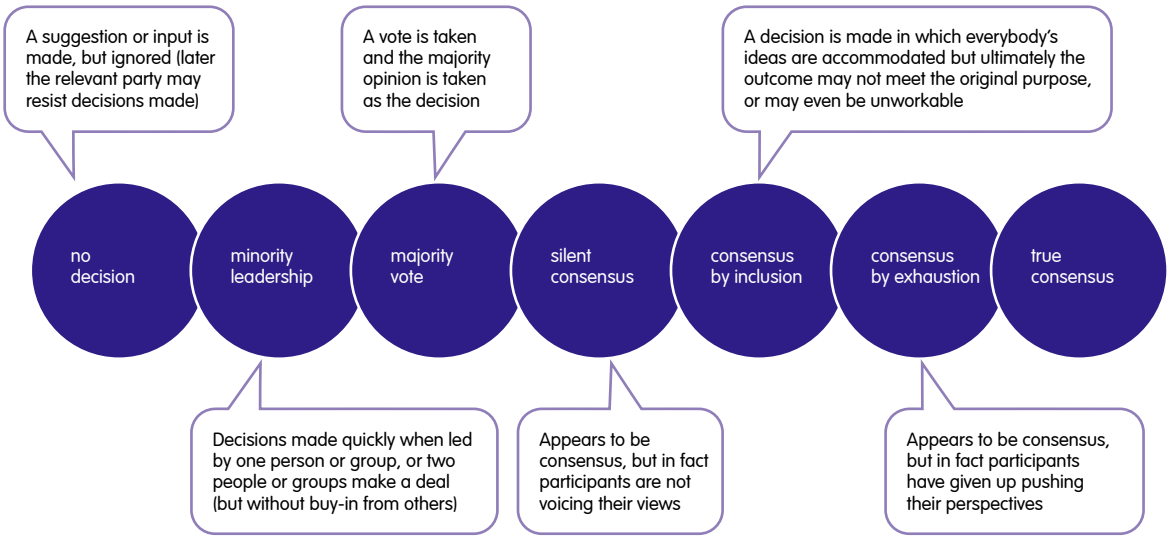

Figure 7 Continuum of dynamics and involvement in decision-making and consensus*

* This continuum is drawn from Hope, A. and Timmel, S. (1984), Chapter 7, Simple decision making and action planning, In: Training for Transformation, a handbook for community workers, Revised edition, Gweru, Zimbabwe, Volume 2, 133 pages, and adapted by Antoinette Kome

Do current sanitation planning processes sufficiently recognise the limits to available skills and to the interest in learning about urban sanitation?

Given the overarching issue of low demand for sanitation, do incentives exist for relevant staff/ representatives and stakeholders in a planning process to invest in acquiring sufficient knowledge about sanitation, such that they can meaningfully participate?

Sanitation is a diverse and multifaceted service that requires sophisticated skills and capacities to plan for long-term service delivery. In the majority of our case studies it was recognised that gaps in staff capacities needed to be addressed.

The case studies show varying responses to the need for skills development. In Indonesia, external skilled city facilitators are provided by the central government to support the pokja, and training programs are made available to key pokja members. In Thailand, there is a focus on capacity building. A global assessment of sanitation (GLAAS 2014) found Thailand's approach was 'investing adequately' in human resources (HR) and HR strategy, and that its approach included defining gaps and making improvements. Consistent with this, a merit-based system for salaries and promotions and per diem provisions for field-work was seen to lead to good retention of staff (WaterAid 2013).

In Malaysia, IWK conducts technical training courses for employees at their well-equipped training facilities, ensuring staff have can gain necessary skills and capacities. In addition, Malaysia and Thailand have also taken measures to ensure that necessary skills are available in the wider marketplace beyond a core focus on government staff. IWK's training programs are available to IWK staff and to the broader industry (local and international), raising the overall pool of skilled professionals in the sector. In Thailand, the pool of skilled staff is replenished through university curricula aimed at providing the necessary capacities (WaterAid 2013) while their investment in human resources retains current staff.

Lastly, in the Philippines, while there are no national government efforts at capacity building for local government sanitation planning and delivery, several donors are active in providing such support. This includes a program in collaboration with the national agency for local governments (DILG) for building capacity in sanitation planning for 89 LGs as part of a larger Clean Water program (Robbins, 2016, pers. comm., 25 February).

Some of the assumptions behind these varied approaches to developing skills and capacities are:

- Skilled facilitators working together with LG can help LG staff build their own skills as part of a sanitation planning process.
- Qualified well-performing staff can be retained by providing good employment conditions.
- Internal training programs can provide skills tailored to particular needs.
- LG staff have the motivation and interest to learn about city sanitation.

In practice, as discussed earlier, the quality of city facilitators in Indonesia has been variable (Koppen & Woersem 2015) and so skills and capacity building within the pokja for sanitation planning has also been variable. There are also no succession planning processes or mechanisms for any acquired skills and capacities to be transferred when staff positions change.

Also, in the above case study examples of capacity building, factors such as attitude and motivation, which often depend on institutional culture and leadership within the LG, play key roles. If they are not explicitly taken into account then the outcomes and results of capacity building efforts are likely to fall short of expectations.

A final important area of discussion is the connection between skills and knowledge, and the ability of individuals to contribute constructively to decisions in sanitation planning. Skills and knowledge are critical if stakeholders are to understand and appreciate the consequences of certain decision paths. For instance,

understanding the life-cycle costs of a certain technology provides knowledge of the financial consequences of choosing to adopt that technology.

However, skills and knowledge are only one dimension. Another key dimension is preferences, informed by an individual's particular perspective, values and positioning (for instance within a given agency) (see figure 8). Since attention to sanitation is relatively new and most stakeholders have limited experience of sanitation technologies and services, it is difficult for individuals to know their preferences. This is true both for LG stakeholders involved in a planning process, and for any community inputs (discussed further in the section below).

The consequence of bringing together stakeholders when most of them are unsure about what the consequences of a decision will be, and when they are also unsure about what their preferences are, is low-quality discussion and outcomes. The assumption that facilitators of city sanitation planning and decision-making processes can support stakeholders to overcome this as part of the planning process puts significant strain on the time and resources for planning. It may also be overly optimistic to assume that so many things can be learned theoretically and without the relevant lived experience. It is likely that our expectations of these outcomes should be reduced, and space should be provided to improve planning (and plans) over time.

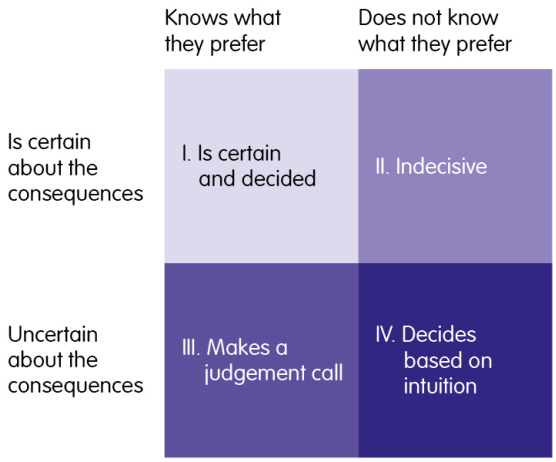

Figure 8 Attributes of an individual involved in a decision
Source: Thompson, 1967.

5.5 Community engagement

Are members of the community included in decision-making in their capacity as 'citizens' (with responsibility for representing the collective good), or as individual 'consumers/ users' of a service?

What type of participation or participatory design is appropriate to bring the community members into sanitation planning as citizens, and at which point(s) in the planning process is this needed?

What type of participation or participatory design is appropriate to engage with community members as 'consumers/users' of the service, and at which point(s) in the planning process is this needed?

What assumptions are being made about community knowledge, skills, priorities and capacity as regards sanitation in the design of their participation?

How can the involvement of users of sanitation services be optimised towards beneficial outcomes?

There are different views about how much input the broader community should have into the development of sanitation plans. Some of these differences stem from a lack of clarity about why community members are to be involved in a planning process. Two possibilities are relevant. The first is to represent the views of citizens, with a focus on the collective good in terms of development of long-term cost-effective equitable, sustainable solutions to sanitation for the city. The second is as consumers or users of a service, in which case the focus is (or should be) on consumer/user preferences.

In either of these cases, some proponents argue that participation is critical, and that such participation is needed to build shared ownership of the plan, and would lead to greater cooperation for implementation of the plan, particularly given communities carry at least some of the costs of sanitation service provision.

These proponents would argue that 'more participation is better'. Others would argue that the community may not generally need to have detailed input into the planning process beyond being informed and given the opportunity to comment. This view is premised on an observation that community members may lack technical understanding and interest beyond a desire to have a service that is convenient, safe, affordable and easy to maintain.

Based on our case studies, it is unclear what level of community participation is most beneficial and effective for sanitation planning. At the lower levels of participation, engagement with communities is mainly a formality needed to gain approval for plans. At this level community members' views are not considered, and no attempt is made to ensure they understand the implications of what is being planned (Arnstein 1969). Intermediate levels of engagement treat communities as partners in planning, with their inputs having an influence on planning to varying degrees. According to Arnstein, the highest level of participation leads to self-reliant development and collective action by the community – in which communities have direct control without intermediaries between funding sources, planning and implementation (Arnstein 1960). The latter is a less likely scenario in the case of urban sanitation, given the mandate for government to facilitate access to services and the technicalities involved. However, in the absence of proactive LG roles, by default communities in some contexts take significant leadership in the development of their services.

One way to consider the choices in optimal level of community engagement is to focus on how community inputs will genuinely be utilised in sanitation planning, and, as per above, to be very clear on the purpose of community participation. While an intermediate level of community engagement is likely to be most appropriate for city sanitation planning, the value derived from the engagement process is strongly dependent on the quality of engagement. If the quality of engagement is low – for example, if community members are not given enough time to form opinions or change them based on adequate information and knowledge, community engagement can end up being time consuming and confusing without yielding useful input.

Assumptions underpinning the opposing views about community engagement and participation in sanitation planning include:

- Greater participation by the community will build a better planning product and ownership.
- Sanitation is complex and technical and should be left to experts.
- Participation is the most effective way to create ownership.
- Citizens' voices should be considered in developing city-wide sanitation approaches.
- The interests and needs of consumers should determine development of the service.

In our case studies, planning was undertaken mainly by experts – in line with rational comprehensive planning theory. The planning processes in Indonesia and India explicitly planned for community input, but to different degrees. Public consultation was included in the finalising of SSK in Indonesia, but mainly to inform the public about the plans – there was no commitment to considering or incorporating their feedback. Community participation is potentially stronger in India through the inclusion of a wide range of stakeholders, including community representatives, in the City Sanitation Task Forces which have a role in 'approval' of CSPs that are developed by local government (ULBs), and which have oversight of implementation.

In Malaysia, excellence in customer services is identified as one of IWK's key focus areas, and procedures to receive feedback and monitor responsiveness to customer complaints have been established. Planning is still undertaken by IWK's management, who may be influenced by feedback received. It is unclear from our desktop reviews what role or influence communities have in influencing decisions in Thailand or the Philippines.

There is a case for stronger community input into plans when they include the direct involvement of the community in the actual delivery of services. In Indonesia, for example, community-based sanitation (CBS) is one of the main service options chosen in

plans, but communities often do not fully understand what responsibilities they are taking on when choosing CBS services (Eales et al. 2013). Greater community participation in planning to ensure that undertakings are made with full knowledge of their implications would be a more equitable approach.

5.6 Securing financing

Will funds flow once there is a plan?

To what extent does the sanitation planning process take into account opportunities for and constraints on how funding for sanitation can be acquired in a given context? (for example, the mainstream budgeting processes in the country).

Does the planning process give enough attention to financing and its impact on what is possible and feasible?

Implementation of the city sanitation plans at the local level to build infrastructure and sustain services in the long term requires adequate financing, and revenues must cover costs. Without adequate upfront finance, the investments needed to implement the plans cannot be made, and without ongoing finance, services can fall away over time.

Traditional sources of financing are tariffs (user payments), taxes (government funds from its revenues collected through taxation) and transfers (donor and social assistance schemes), and innovative sources of finance can be accessed through different forms of repayable finance (ISF-UTS, 2014). There are different views and preferences (each underpinned by its own assumptions) about the appropriate levels of contribution from each of these sources, in funding sanitation services. In decentralised contexts, there is an increasing emphasis on reductions in 'transfers' from the national level and increasing local revenue to finance sanitation services.

Rational comprehensive approaches to sanitation planning tend to create master plans first, and seek finances for implementation in a subsequent step (Hudson et al. 1979). This is evident in the Indonesian process where implementation plans are formulated in the second year, after the SSK are completed (table 2). In contrast, in Malaysia financial planning takes place more routinely as an ongoing function within IWK alongside investment planning, in line with sound business practice.

Government sources of funds are available in all the case studies, while additional sources are used to fill gaps. For many local governments in Indonesia, the largest part of their operating revenue comes via transfers from the national government (Cahyat 2011). These funds have conditions and specifications on how they can and can't be spent. LGs are also

expected to seek other sources of finance for implementing SSK, such as provincial funds, private sector funds and CSR funds – under the expectation that these funds can be accessed once the plan is made.

In Malaysia, financing is provided through a combination of private sector participation, government contributions and tariffs. Government subsidies form the most significant revenue source, as tariffs were revised downwards between 1997 and 2013 despite rising operating costs (IWK 2013). At the same time, policies and regulations enable IWK to access other sources of funding. Government policy requires real estate developers (in developments with 30 dwellings/150 EP[8] or more) to install sewerage systems, a measure that has drawn capital investment from the private sector amounting to approximately 70–80% of wastewater treatment infrastructure (Japan Sanitation Consortium 2011). IWK takes over the sewerage assets after certifying they meet required standards (Mohd Din 2010). Separately, the Water Service Industry Act 2006 obliges users to pay sanitation tariffs that enable regular desludging to be carried out and make tariff revenues secure (Japan Sanitation Consortium 2011).

In the Philippines, the National Sewerage and Septage Management Program (NSSMP) focuses on the larger infrastructure projects that local implementers (mainly local government units, water districts, and private service providers/utilities) will develop to collect and treat wastewater from densely populated urban centres (highly urbanised cities). Funding through the NSSMP provides to local cities and municipalities up to 40% of the cost of implementing sewerage systems, promoting faecal sludge management (FSM) and regular desludging (Robbins et al. 2012). FSM cost models enable full cost recovery tariffs, and they have the potential to address disposal of the sludge component of sewage from onsite systems over the long term.

However, there is no complementary financial support from NSSMP for enabling adequate treatment for the effluent discharged from onsite systems. This effluent can contaminate water resources and pose a public health hazard. Furthermore, the NSSMP funding does not extend to urban areas that are not 'highly urbanised cities' – the majority of cities.

Some of the assumptions underpinning approaches to financing are:

- The funds will flow once the plan is completed.
- Sanitation is a public service so the public purse must contribute to financing.
- The service provider does not have to secure finances for everything – other stakeholders can and should help.
- To achieve effective service delivery in decentralised contexts, local governments need to raise sanitation funds locally (through local taxes and user fees).

Indonesian cities and districts prepare memoranda with commitments to implement select programs in their SSK, including budget allocations, as part of the prescribed planning process (Table 2). However, the existing LG budgeting processes established by the central government are not aligned with the implementation needs of the SSK, resulting in proposed sanitation budgets being cut out by the team responsible for allocation of LG budgets (Chong et al. 2015).

In the Philippines, there is a cost share facility, available through the NSSMP, under which the federal government pays 40% of the upfront costs of sanitation schemes. However it has not yet been utilised by any local governments (Narvaez 2015). One reason is that this fraction is considered insufficient to enable a local government to meet the large upfront costs. An amendment is under consideration which would increase the proportion of the cost paid by the federal government. Perhaps more importantly, there is a lack of clarity regarding the procedures for a city to apply for these funds, and only one city has so far made an application for funds. The process is being revised (Robbins, 2016, pers. comm., 25 February).

[8] Equivalent Person 'EP' means a standard unit of sewage generation based on the average generation by a typical person in a residential setting over the long term

In Indonesia, LGs have committed to allocating 2% of their 'own source' finances to sanitation. While this may suggest local funds raised through local taxes and user fees, in practice the majority of sanitation funds 'from the local budget' come via transfers from the central government through a special allocation fund for sanitation.

Responsibility for sanitation service provision is one of many responsibilities that fall on local governments, so sanitation often competes against other services in LG budgets. This is a particular challenge in Indonesia, where 'sanitation' is defined to include not only wastewater, but solid waste and stormwater management as well. Improvements to solid waste and stormwater management are more visible, and therefore gain more political support – a greater proportion of 'sanitation' budgets may be directed to these sectors in preference to wastewater. In contrast, under the approach to sanitation in Malaysia IWK dedicated funds go to wastewater management alone (Japan Sanitation Consortium 2011) while the Philippines has a separately planned and budgeted program for solid waste under the Solid Waste Management Act (DoH Philippines 2010).

Thus the disconnect between sanitation planning and funding should be recognised at the start, and efforts made to link city sanitation planning processes more closely to mainstream LG planning and budgeting. Significantly more attention to financial expertise and innovation in terms of a broader set of financing options including repayable financing mechanisms (ISF-SNV, 2015) is also needed as part of city sanitation planning.

5.7 Incentives for effective planning

Are we paying sufficient attention to incentives for LGs to develop effective city sanitation plans?

What is the level of citizen demand for services, and how does this impact on LG incentives?

Is the city sanitation planning process inadvertently setting up perverse incentives that may lead to ineffective outcomes?

Local motivation to undertake city sanitation planning cannot be taken for granted where city sanitation planning is driven by the motivations of central government. Two key approaches to incentivising LGs are through peer pressure and through financial incentives. A potential third approach is to develop greater public interest in sanitation and strengthen the 'citizen voice' to encourage citizens to demand services and hold their LGs to account through the political process (Winters et al. 2014). Such processes are being actively developed (World Vision 2009), but have not yet been widely seen in the sanitation sector.

In Indonesia, an Association of Cities and Districts Concerned about Sanitation (AKKOPSI) has been formed, with annual meetings, awards schemes and media campaigns designed to create interest, friendly competition and increased commitment to sanitation. As members of AKKOPSI, cities and districts have pledged to allocate 2% of local budgets towards sanitation.

In addition, local governments must complete an SSK before they are eligible to access sanitation funds from central government and donor programs. According to WSP (2009), 'urban sanitation planning needs to be more than a voluntary activity if it is to be undertaken nationwide. Government needs to develop both incentives and obligations for municipalities to adopt comprehensive strategies, by linking funding to the adoption of city-wide sanitation plans.'

In India, sanitation ratings of cities were developed in 2009. The objectives of city sanitation ratings were to mobilise cities on a competitive basis to rapidly promote and achieve milestones, to measure progress towards national goals, and also as an advocacy tool for sanitation. There were 19 indicators divided over three categories: output (infrastructure), process (systems, procedures) and outcomes (health and water quality). The ratings were based on primary and secondary data collection by external agencies. All cities with populations over 100,000 were rated (423 cities, covering 72% of the urban population). The cities were divided into three groups based on population: >5 million people, between one and five million people, and less than one million people. The vast majority of the cities rated (388 cities) lay within the last groups (small cities).

The outcomes of the first rating were not positive but it was a wake-up call: 185 cities (44%) were rated in the red category (needs immediate remedial action); 234 cities (55%) were in the black category (needs considerable improvement); and only 4 cities were in the blue category (1%) (recovering) and none were in the green category (healthy and clean city) (see figure 9).

After the ratings in 2010, 120 cities asked the Ministry of Urban Development to support city sanitation plans as a means of improving their ratings with outcome-focused planning. Since 2011, more donors (UK DFID, World Bank, UN-Habitat, Water Aid and ADB) have used city sanitation plans as a prerequisite for financing (209 cities). Initially, the rating process was applied annually, but now it is applied biennially to give cities time to improve.

Assumptions behind these approaches to stimulating local commitment to sanitation planning include:

- Recognition by peers encourages local government to produce better plans.
- Linking funding to city sanitation plans will motivate local governments to undertake planning.
- Citizens have considerable democratic power to demand services of their local political leaders.
- Use of performance ratings will make visible different levels of progress, encourage competition and motivate LGs.

Although the major sanitation funding sources in Indonesia require a completed SSK, the funding conditions do not require alignment with the SSK and can in fact drive investments that contradict the SSK.

CITY COLOR CODES: CATEGORIES	
Category	**Description**
Red: Less than 33 points	Needs immediate remedial action
Black: 34 – 66 points	Needs considerable improvement
Blue: 67 – 90 points	Recovering
Green: 91 – 100 points	Healthy and clean city

Figure 9 Rating of Indian cities' sanitation
Source: Sen and Ravikumar, 2013)

For example, a special allocation transfer fund from the central government requires the community to provide land for sanitation infrastructure, resulting in investments in areas where community land is available rather than in the highest priority areas in the SSK (e.g. where public health risk is highest) (Chong et al. 2015).

Although 446 out of the 507 cities/regencies in Indonesia had produced SSK by the end of 2014, the main outcome is reported as 'mostly on raising awareness on sanitation importance among the stakeholders', with 'minimal to insignificant' impact on the implementation of plans (Koppen & Woersem 2015). Many local governments take a 'tick box' approach, following the process as a formality in order to comply with the national PPSP participation objectives. Public expectations are low, so they do not demand services or hold local governments to account for service delivery (Winters et al. 2014). Despite efforts to increase ownership based on the above assumptions, local ownership and commitment to the plans is relatively rare.

It becomes clear that it cannot be assumed that existing incentives will be enough to motivate local governments to develop sanitation programs, and yet incentives are critically important, and appropriately targeted external drivers and pressures (such as peer-to-peer ratings) are likely to be needed.

5.8 Pragmatic versus idealistic planning

What is the right balance between setting a vision with a long-term focus and pragmatically addressing immediate issues?

To what extent should planning be focused on incremental improvement?

Is there sufficient awareness of how short-term actions and measures affect 'path lock-in' to particular technologies or approaches?

Urban sanitation in developing countries has grown in an ad hoc manner historically. Some planning approaches constrain cities to remain within their historical investment trajectories, and they respond reactively to the most immediate issues those previous investments create. For example, onsite sanitation is prevalent in most cities in our case study countries, presenting an immediate problem of related environmental contamination. Some cities initiate FSM

programs in conjunction with planning for more onsite systems to be installed in the future to provide for growing needs. This applied to many cities in the Philippines, Indonesia and India and planners did not step back to ask if this response was the best long-term solution for these cities.

At the other end of the spectrum, large metropolitan cities in most of our case study countries and elsewhere plan for centralised sewerage to be rolled out across the city at a very high cost. This is seen as an 'ideal' solution and one that will see the disconnection of existing onsite systems.

Somewhere in between are approaches that consider how different technologies and scales may be combined and integrated – for instance septic tanks can be combined with small-bore sewers. Sewerage can be used in high-density areas and onsite systems can be used in lower density areas. Other options consider alternative technologies emerging on the market such as membrane bioreactors which may disrupt current thinking about possibilities.

Malaysia takes an intermediate approach to urban onsite sanitation, responding to the immediate need for FSM while planning for a gradual phasing out of septic tanks in urban areas to meet their goals for higher wastewater treatment quality (Japan Sanitation Consortium 2011).

Assumptions behind these varying approaches include:

- Focus on the problem at hand; do what needs doing.
- Work with and build on current infrastructure, as this will be the most efficient and fastest way to reach sanitation goals.
- Planning is a unique opportunity to bring in vision, and without vision and long-term focus we will continue to use valuable finances without achieving a sustainable pathway to the future
- Any investment creates 'path lock-in' to a particular technological or institutional approach to address sanitation needs.

The assumption behind reactive planning is that it can lead to pragmatic resolutions of problems that are evident (consistent with pragmatism planning theory). While such planning does lead to action, a narrow focus on visible or obvious problems can result in a failure to consider connections with other parts of the system, which may result in unintended problems later on. For example city sanitation planning that makes provision for FSM services and expands urban use of onsite systems without attention to the fate of untreated effluent (in drainage, surface or groundwater) may exacerbate existing problems.

The assumption behind idealistic planning is that a long-term vision and mapping the steps to be taken towards realising this vision is critical to achieving long-term goals. Back-casting is an approach that can provide both a long-term vision and the steps needed to bring it about. In the back-casting process, a future vision is formulated and steps toward achieving it are defined. However such a process requires relevant 'expert' knowledge to know what is possible, and sufficient engagement with the surrounding political economy to develop effective steps that could be taken to reach this vision.

Somewhere between the extremes of pragmatic, reactive planning and idealistic planning, there is likely to be a point of balance. At this point of balance, a sufficiently clear vision can provide direction (and rule out certain options) and initial steps may be designed with a realistic level of ambition and embedded points of reflection. In this way, actions to address pressing sanitation issues can be undertaken and reflected upon to improve longer-planning processes and their outcomes.

6 Encouraging reflection on city sanitation planning

It is time therefore, to step back from sanitation planning methodologies themselves, and consider the questions raised in this paper. Critical reflection and building a strong evidence base by monitoring city sanitation approaches over time are essential to improve the quality and outcomes of planning and investment. A key point we raised at the outset of this paper is the assumption that there exists sufficient interest and political will, and appropriate incentives, to support efforts to improve sanitation. This question remains, for without an increased sense of urgency about the need to address sanitation issues, technocratic planning processes are likely to remain ineffectual.

In this paper we have tested various key assumptions in a set of examples and found that in many cases, the evidence did not validate the assumptions. For example, in Indonesia it was assumed that the development of city sanitation strategies piloted in 12 cities could be replicated nationally, but despite significant investment to enable replication, it has been claimed that the main outcome of the program has been limited to a greater awareness of the importance of sanitation (Koppen & Woersem 2015) rather than significant shifts in sanitation investment and service delivery. In India, 'planning' has been assumed to lead to implementation, with more comprehensive planning assumed to lead to better sanitation outcomes, but in reality plans have not always been implemented (Gold, 2012). It was assumed in the Philippines that highly urbanised cities would see the availability of a cost-sharing facility with central government as an incentive for investment but this has not been the case, and few cities have considered the offer (Robbins, 2016, pers. comm., 25 February). Acknowledging that assumptions haven't held true is not easy when large investments of time and effort have been based on them. But failing to change tack is likely to be even more costly.

Rational comprehensive planning with aspects of collaborative planning was found to be the dominant approach influencing contemporary city sanitation planning. Rational comprehensive planning was the predominant approach throughout the case studies. Collaborative planning through the inclusion of multiple perspectives and community participation in city sanitation planning was also evident, largely as an extension to a rational comprehensive approach. The dominance of rational comprehensive planning is evident not only at the institutional level, but at the level of the individual planner. Several workshop exercises on 'what kind of planner are you?' at an SNV learning event on sanitation 2014 showed that a majority of workshop participants, comprising 36 sector practitioners from international agencies and non-governmental agencies, were 'perfectionist planners' committed to rational comprehensive approaches. They favoured more data and more participation under the unquestioned assumption that this would lead to 'better' planning, with less consideration of the value obtained from, and opportunity costs of, investing in 'more'. Nor did they consider the complexities of facilitating effective participatory engagement and collaboration on sanitation, given the low baseline knowledge and capacity on the subject and limits in drivers and incentives for effective collaboration.

To address this situation, we would like to draw the reader's attention to the following three key points:

- Accepting that 'less is more' in city sanitation planning, and placing greater emphasis on the political economy that surrounds a sanitation planning process, may deliver better outcomes. This would mean questioning assumptions about the relative autonomy of the LG doing the planning, strengthening connections with current available financing streams and larger-scale investment programs, and considering which contexts are 'ripe' for undertaking a formal city sanitation planning process. This may initially involve investing in awareness raising, capacity building and increasing understanding, and not necessarily considering sanitation planning as a first (comprehensive) step.

- As we face sanitation challenges globally, the environmental uncertainties, context-specific public health risks and resource constraints mean that 'solutions' of the past have potential turn into 'problems' of the future as circumstances change. To meet the challenge of providing sustainable sanitation services for all while ensuring our solutions don't become future problems, a key focus in city sanitation planning needs to be on the potential for technological 'lock-in' to particular pathways. What may seem like 'no regrets' measures to improve the status quo may also further embed unsustainable pathways into the future. Over time, we need to develop improved rules of thumb that can facilitate shortcuts in city sanitation planning. These rules of thumb need to be based on the technological and management choices that are the best ones to use for different cities (depending on aspects such as population density, depth of water table, design of onsite sanitation). We also need to better consider linkages with other sectors such as water, energy and waste.

- Any planning process needs integrated monitoring and embedded learning processes to examine what happens as a result. However this is rarely given sufficient attention. As a result, there is little evidence available concerning the effectiveness of planning processes and their resultant plans. This means that even single-loop learning is difficult. A recent review of sanitation planning over the last three decades also pointed this out (Kennedy-Walker et al. 2014) and the recent emergence of city sanitation planning appears no different. Resource allocation to city sanitation planning should 'design-in' such monitoring. In fact, we propose that re-balancing resources to reduce the scale, comprehensiveness and ambition of sanitation planning itself, and reallocating resources to learning and improving is likely to improve outcomes. In addition, mechanisms are needed for horizontal 'cross-learning' of lessons across local governments and for their periodic consolidation at the national level.

Together with these three key messages, this paper invites readers and stakeholders in city sanitation planning to pause and take stock of what has been achieved to date compared with what was intended by city sanitation planning. We invite readers to identify the assumptions underlying sanitation planning, and to evaluate how well these assumptions have borne out in reality. Our key message is that there is a need to shift from focusing exclusively on 'doing the thing right' in order to get the intended results (the domain of single-loop learning), to 'doing the right thing' that involves critical reflection and questioning of assumptions (double-loop learning) so that we can re-think our approach and hopefully, in doing so, deliver more effective outcomes.

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