



What drives reform?

Making sanitation a political priority in secondary cities

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Acronyms

CCI	Centre for Community Initiatives
CCM	Chama Cha Mapinduzi
EWS	eThekweni Water and Sanitation
LGRP	Local Government Reform Programme
LGA	local government authority
MoHCDGEC	Ministry of Health, Community Development, Gender, Elderly and Children
MoWI	Ministry of Water and Irrigation
MCC	Mwanza City Council
MWAUWASA	Mwanza Urban Water Supply and Sanitation Authority
NSC	National Sanitation Campaign
PORALG	President's Office for Regional Administration and Local Government
TRA	Tanzania Revenue Authority
UWSA	Urban Water and Sanitation Authority
WHO	World Health Organization



In poorer regions,
58% of all urban
residents live in
small cities.



Find out more: odi.org/urban-sanitation



If small cities fail to
improve sanitation as
they grow, cholera,
stunting and child
mortality can increase.



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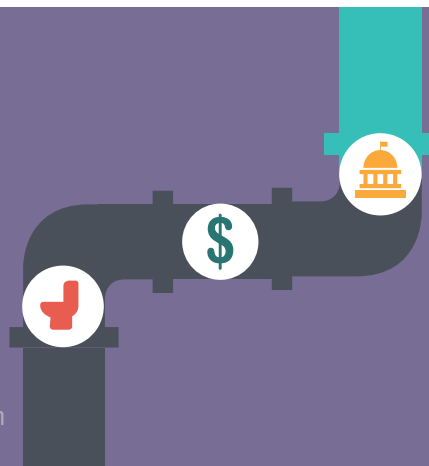
Providing city-wide
sanitation is expensive,
technically difficult and
slow. The urban poor need
practical solutions **now**.



Find out more: odi.org/urban-sanitation



Sanitation isn't simply a
technical problem;
strong political will
can deliver investment
in sanitation for the
urban poor.



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Executive summary

The rapid urbanisation seen by many countries around the world offers great potential for human development. But this comes with a cost. If the human waste produced by our quickly growing cities is not safely managed, the tragedies of stunting, cholera, and child mortality are almost certain to persist.

Most of the urban discussion, including on urban sanitation, is focused on capital cities. Yet, in less developed countries, more than half of all urban residents live in smaller cities of one million inhabitants or less (UNDESA, 2014). These smaller, but rapidly expanding, cities face specific development challenges, often having weaker political autonomy and more limited financial resources than the capital. As the populations of these smaller cities continue to rise, achieving universal urban sanitation is as urgent as ever. Looking across the whole sanitation chain, we find that the first stage – household containment – is often missing, especially in informal settlements in cities.

But surely the world has already solved these sanitation problems? In this report, we take a step back and ask what enabled cities in the 19th and 20th centuries to improve their sanitation systems. Were their sanitation problems the same that developing cities face today? We use lessons learnt in the historical studies to suggest how progress can be achieved in Tanzania, and possibly elsewhere.

Our research involved a literature review of what led sanitation to become a political priority in cities in 19th century Britain, 20th century South Korea, and the city of Durban in South Africa post-apartheid. The findings from these studies are compared to two primary research studies of the Tanzanian cities of Arusha and Mwanza.

The analysis of the case studies emphasises two core messages. Firstly, the sanitation problems in each city were not always the same, and so the political incentives to drive public action to solve them were different. Secondly, strong political interest in improving sanitation is always necessary. Sanitation is an expensive and technically challenging service which requires clear government coordination and sustained effort. The case studies indicate various ways in which sanitation can become a politically important service to provide.

Stories of progress

In **19th century Britain**, sanitation became a political priority for three reasons:

1. *Impact on economic productivity*: poor sanitation affected the health of the whole urban population and became a visible brake on economic productivity.
2. *Social concerns*: improving the lives of the urban poor became a societal aspiration.
3. *Political pressure*: the urban poor gained a strong political voice.

Together, these three factors overcame opposition to public investment. Local governments were able to use loans to finance sanitation infrastructure.

In comparison, in **20th century South Korea**, national government believed investment in public services would improve its reputation internationally and in the eyes of its dissatisfied citizens. Supported by large investments from the US and others, South Korea set about improving urban sanitation through a nationally-led programme.

Finally, in **Durban**, rebuilding national identity and a sense of inclusion and equality was important to political leaders after apartheid. Similar to South Korea, elected leaders thought that improving the access of marginalised communities to basic services, including sanitation, would help to unify society. Political autonomy and financial capacity at the local level enabled the city of Durban to invest in, and experiment with, new ways of providing sanitation across the city.

While each country is different, there are clear patterns in how sanitation became a political priority. Four sources of political incentives emerge:

1. Sanitation is valued culturally or socially;
2. Sanitation noticeably affects human health and so is considered important for a healthy, productive workforce;
3. Sanitation is considered a sign of modernity and is important for a city's reputation; and
4. Sanitation is considered important for state legitimacy.

These incentives form a basic framework with which we examine the sanitation challenges currently facing the Tanzanian cities of Mwanza and Arusha.

What is preventing better sanitation in Tanzanian cities?

Mwanza and Arusha are fast-growing secondary cities in Tanzania with similar demographics and local government per capita revenues. They also face similar difficulties in expanding sanitation coverage to their entire population. While these difficulties persist across the whole sanitation chain, the most significant gap is the lack of improved sanitation facilities to contain household wastewater. This problem is particularly acute in informal settlements where problems of affordability, lack of tenure and inaccessibility mean households do not invest in their own improved sanitation. Therefore, household wastewater frequently pollutes the ground, streets, and nearby streams, and cholera outbreaks are common.

Why do these sanitation problems persist? Most importantly, sanitation is not an easy or cheap problem to solve. There would need to be strong political incentives for government; yet sanitation is not a political priority for several reasons:

1. The health problems caused by poor sanitation do not have a visible impact on the city's economy.
2. Most inhabitants can isolate themselves from the health consequences of poor sanitation.
3. Those who are most affected are socially marginalised
4. Those who are most affected do not consider sanitation to be a high priority compared with access to healthcare and work.

Consequently, there is low public demand for better sanitation and little political reward from investing in it. This is especially the case when sanitation is compared with more visible services which have a strong public demand, such as solid waste management and healthcare.

Urban sanitation is the responsibility of the urban water and sanitation authorities which operate at the city level. To date, their investment has focused on the technical challenge of expanding sewerage infrastructure. Despite a 'bottom-up' budgeting process, local government has little political, administrative or fiscal autonomy to address local priorities. They are limited to issuing fines for pollution, occasional hygiene awareness raising activities, and improving sanitation facilities in public spaces. At the local government level, the health department does not consider sanitation to be their responsibility. For local government to take action on sanitation problems, they would almost certainly need central government support.

What could drive sanitation up the political agenda?

Household sanitation is considered a private responsibility. So what could persuade national leaders to empower local government to improve it?

There could be political interest in implementing programmes to upgrade and formalise the valuable urban land occupied by informal settlements. Improving the cleanliness of cities and reducing disease can enhance the national and international reputation of Tanzanian cities. In addition, pressure from international development organisations on the Tanzanian government to improve the living standards of the urban poor may also motivate political leadership, particularly where financial and technical assistance is also offered.

However, for these incentives to lead to action, they need strengthening. An alliance of Tanzanian and international organisations could advocate for better sanitation on the basis of improving personal dignity and the reputation of a city. Cross-sector alliances calling for better environmental and public health in cities could create additional pressure in making health central to urban development. Advocacy needs to link sanitation and wider health improvements to current political priorities.

Low-cost loans to local government, possibly via international donors, and the ability to cross-subsidise outside the water and sanitation authority may also help government to finance improvements to sanitation. Moreover, local government having a clear institutional mandate to improve urban household-level sanitation and a single, empowered body to coordinate cross-sector interventions may also enable sanitation improvements. Non-government organisations working to improve sanitation in informal settlements should partner with government to ensure their practice is joined-up, learnt from and taken to scale.

Sanitation systems take a lot of time and money to build and expand. The lack of investment and time invested in sanitation contrasts starkly with the fast rate at which cities are growing. It is important that as households wait for networked sanitation systems to expand, there are intermediary short-term sanitation solutions in place. As urban sanitation coverage improves, countries will benefit from decreasing cases of cholera, diarrhoea and stunting, which limit people's health and the development of cities across the world.

1. The challenge of faecal waste and growing cities

This report analyses the challenge of improving access to sanitation in rapidly growing and developing secondary cities. Urban sanitation problems, and reasons for solving them, have changed over time. We look at examples throughout history and across the world, and argue that while sanitation problems may appear to be technically the same, the political incentives needed to drive progress are now different. Drawing on lessons from historical progress, we formulate a framework for understanding how progress in urban sanitation takes place. We then apply these principles to current sanitation challenges in two secondary Tanzanian cities, Mwanza and Arusha, to assess what could drive improvements there, and possibly elsewhere.

1.1. Why urban sanitation?

Rapid urbanisation is taking place in nearly all developing countries. Urban growth is associated with higher productivity and advances in knowledge and technology (UN-Habitat, 2013). However, it also results in higher demand for basic services. As cities grow, there is a greater need for effective governance of resources and services to ensure that the city functions as an interdependent system (Potts, 2013).

While debates have historically focused on primary cities, in less developed countries, more than half of all urban residents live in smaller cities of one million inhabitants or less. This is predicted to remain the case until at least 2030 (UNDESA, 2014). Smaller cities face specific development challenges. Municipal governments often lack political autonomy to control local development, as well as the means to generate revenue to invest locally. For these reasons, this study examines how secondary, rather than capital cities, have managed to achieve progress.

In cities in Africa, Asia and Latin America, where access to improved water and sanitation can be limited, infants and children in dense, informal urban areas have a substantially greater incidence of diarrhoeal illness than their peers and are less likely to live to the age of five (Fink et al., 2014). These high rates of diarrhoea are clearly

linked to an urban community's access to sanitation, not just individual households' (Andres et al., 2014). Further still, the effects of poor sanitation are not limited to diarrhoeal illness and child mortality. Poor sanitation is the second leading cause of child stunting worldwide (Danaei et al., 2016). Studies suggest that child stunting is worse in areas where people live closely together and there is open defecation (Hathi et al., 2014; Spears, 2013a) which provides a stark warning to developing countries urbanising rapidly, where open defecation is still common.

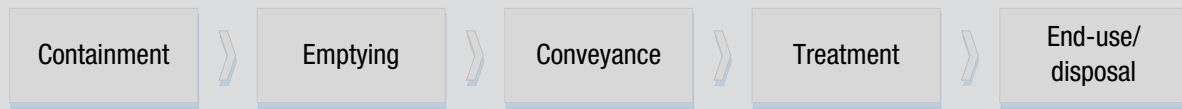
In sub-Saharan Africa, stunting is already a serious problem: in 2014, 35% of children under five were found to be stunted (World Bank Group, 2016). This is significantly worse than the global average (23.8% in 2014) (World Bank Group, 2016). This percentage may be higher still if sanitation does not improve as cities grow and population density increases. In Danaei et al.'s study (2016), poor sanitation and other unhealthy environmental conditions were found to be the second most important cause of stunting in the region, and the situation in Tanzania reflects this. According to the most recent National Nutritional Survey for Tanzania (The United Republic of Tanzania, 2014), 34.7% of children under five are stunted, of which 11.5% are severely stunted.

1.2. Achieving universal sanitation

Despite medical and technological advances and greater awareness of how poor sanitation in high density areas severely harms human health, many cities have still not achieved universal sanitation. The Millennium Development Goal (MDG) target of 77% of the global population using an improved sanitation facility¹ was not even nearly achieved (WHO/UNICEF, 2015). In 2015, this means that an estimated 2.5 billion people still did not have access to improved sanitation (WHO/UNICEF, 2015).

Recognising this challenge, Target 6.2 of the Sustainable Development Goals (SDGs) aims to '...achieve access to adequate and equitable sanitation and hygiene for all'. It also focuses on the entire sanitation service chain (Box 1), which considers every stage necessary for full sanitation

¹ The WHO/UNICEF Joint Monitoring Programme definition of an 'improved' sanitation facility is one that hygienically separates human excreta from human contact. See <http://www.wssinfo.org/definitions-methods/watsan-categories/>

Box 1: The sanitation service chain

WHO/UNICEF definition of safe management of household excreta: the ‘containment, extraction and transport of excreta to a designated disposal or treatment site, or the safe re-use of excreta at the household or community level, as appropriate to the local context’.

coverage, from containment to treatment and disposal – a further enhancement of the MDG target.

This is a particular challenge for urban areas due to the type of sanitation facilities that are used by low-income groups. Recent World Bank research estimates that global coverage for ‘safely managed sanitation’ is only 26% in urban areas (Hutton and Varughese, 2016).

Solving this problem is also not cheap. It has been estimated that roughly \$49.3 billion is required each year to provide ‘safely managed sanitation’ for all by 2030

(Hutton and Varughese, 2016). This is two and a half times the amount which was estimated to be necessary to provide ‘basic sanitation’ for all by 2030, and twice the level of annual expenditure on water and sanitation provision during the period of the MDGs (ibid).

Unless the coverage of sanitation provision significantly increases, the scale of the harm to public health caused by inadequate sanitation in densely populated areas seems certain to rise as African and Asian cities grow.

2 For SDG Target 6.2, the indicator measures the percentage of the population using safely managed sanitation services. This research corresponds with efforts to meet this particular target.

2. History lessons

The question of how municipal governments can provide universal sanitation has been answered. Many years ago, a number of cities developed sanitation systems capable of reaching all of their inhabitants. So why do so many cities still lack universal sanitation?

We challenge the common misperception that sanitation is a technical task, which simply requires more money. Looking at examples of progress in urban sanitation, we seek to understand what has led change to happen in these places, and what this means for sanitation improvements in other contemporary developing cities.

We present three examples of progress in urban sanitation: in 19th century British cities, 20th century South Korean cities, and the city of Durban in South Africa post-apartheid. In each case, we identify the main drivers of government investment and better public and political attention to the problem. We will first seek to understand the political incentives which made sanitation a priority, and then review how this political commitment mobilised resources and government capacity to address the problem.

2.1. Strengthening political incentives

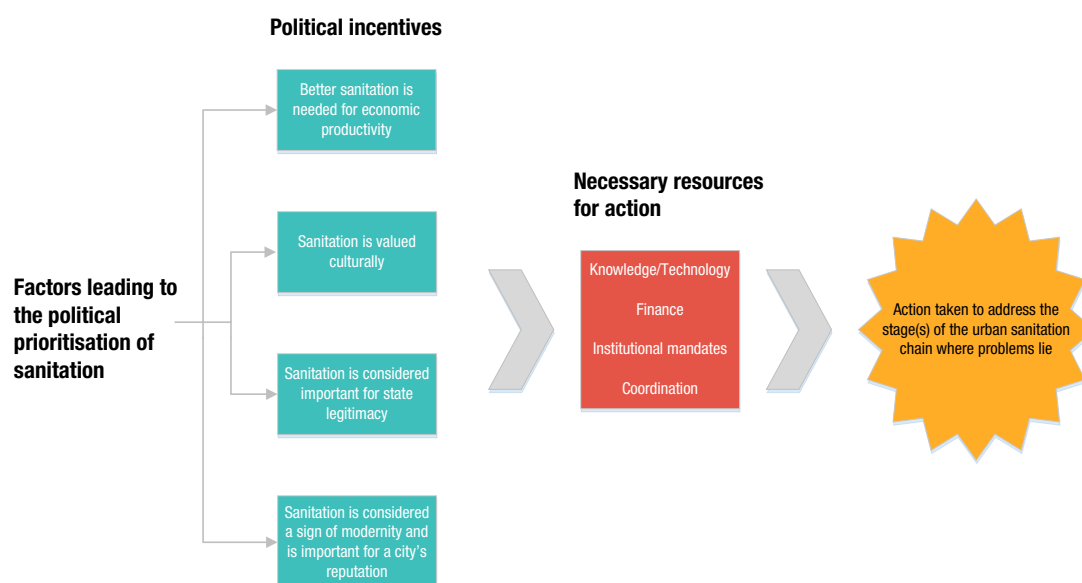
‘Political will’ or ‘incentives’ are terms often used to describe politicians’ general interest – or lack thereof – in an issue. Our analysis unpacks this notion, identifying specifically what motivated political leadership in each case, and how political reasons for investing in public sanitation overcame disincentives and practical challenges of delivering the service.

While each country is different, there are clear patterns in how sanitation became a political priority. Four sources of political incentives emerge:

1. Sanitation is valued culturally or socially;
2. Sanitation noticeably affects human health and so is considered important for a healthy, productive workforce;
3. Sanitation is considered a sign of modernity and is important for a city’s reputation; and
4. Sanitation is considered important for state legitimacy.

Throughout this report, this set of political incentives informs a broad framework, developed from the case studies, which guides our analysis of how progress might be achieved in Tanzanian cities and potentially elsewhere.

Figure 1: Basic analytical framework of progress on urban sanitation



Our research and analysis relies upon literature reviews of three historical cases which is compared to two recent primary research and qualitative case studies in Mwanza and Arusha. As with all case study evidence, there are limitations to the generalisations that can be drawn and there are limitations to the evidence base which could be included in the literature review. The conclusions and suggestions for how Mwanza and Arusha could approach sanitation improvements are intended to be illustrative of the considerations which other rapidly urbanising, low-income secondary cities could also make (see Annex B for the methodology). We therefore aim to provide recommendations which are specific to Mwanza and Arusha, while arguing more broadly for an approach to urban sanitation which incorporates a better understanding of the role of political incentives in driving improvements.

2.2. Sanitation improvements in 19th century Britain

19th century Britain is a well-known example of large-scale urban sanitation improvement. A number of cross-society pressures converged and resulted in significant political incentives to tackle the problem. This case study highlights the importance of political incentives for public investment overcoming political barriers. It also demonstrates that despite being viewed as a sudden success, urban sanitation improvement was a long and expensive process that required both local government ownership and coordination.

2.2.1. The urban sanitation problem in 19th century Britain

Britain was the first urban nation with over 50% of the country's inhabitants living in towns with populations larger than 5,000 by 1870 (Millward, 2014: 390). The urbanisation process was rapid, which led to extremely poor housing conditions manifesting in overcrowding in existing housing, often in the city centre (Hunt, 2005: 28-29). Public health worsened and life expectancy in cities fell but as the 1800s progressed, life expectancy started to rise again (Szreter and Mooney, 1998: 104). This improvement was attributed to a combination of increased nutrition from higher incomes and improved public sanitation (Deaton, 2013). But why did public sanitation improve? First we examine how sanitation became a political priority and then we consider how resources and government capacity were mobilised to address the problem.

2.2.2. What led government to invest in sanitation?

A number of political and social changes came together with economic development dependent on human labour driving heavy government investment in urban sanitation.

Health for economic productivity

The economic argument for sanitation was key to improvements from the outset (Fisher et al., 2005). Edwin Chadwick's³ 1842 report into the conditions of residents in poor urban areas was motivated by a desire to reduce public expenditure on social support for the poor. The report argued that improved urban drainage could address the infectious diseases that increased the mortality rates of male breadwinners, leaving their families dependent on poor relief (Hamlin and Sheard, 1998). Industrialists at the time were also concerned about the impacts of an unhealthy urban workforce on the UK's future economic growth (Crow, 2007).

Growing awareness of public health

Poor public health and cholera outbreaks were very noticeable in 19th century Britain. They affected a city's entire population, which generated a strong fear of disease, including among the social elite. Although the connection between sanitation and health was not fully understood, there was growing awareness of the importance of clean water (Cooper, 2001) and that sanitation needed collective action. In the late 1830s, a public health movement emerged and became influential in key state institutions, calling for attention to the high urban death rates (Szreter, 1997: 714). Sustained pressure by this lobby group led to the 1848 Public Health Act being passed.

Overcoming opposition to public funds investment in sanitation

The 1848 Public Health Act may have been a 'revolution in public health' (Hamlin and Sheard, 1998), but local tax payers strongly opposed publically financing sanitation (Hunt, 2005: 294). However, in 1867 the right to vote was extended to a much larger proportion of the population. This dramatically increased the political voice of the urban working class – the group most directly affected by poor sanitation (Szreter, 1997). Importantly, many within this group, not being property owners, did not directly pay local taxes, and so were less likely to oppose taxes being invested in sanitation (Szreter, 1997).

At the same time, new ideas about the role of urban government were emerging. A municipal or civic 'gospel' began to appear that held the city council up as 'the chief agency for promoting the welfare, health and happiness of the population' (Hennock, 1963: 219; Hunt, 2005: 325-330). This was accompanied by an increasing sense of civic

3 Edwin Chadwick was an architect who conducted a series of enquiries into the living conditions of the urban poor. He is credited as one of the driving forces behind the enforcement of the 1834 Poor Law and the passing of the first Public Health Act for England and Wales (Hamlin and Sheard, 1998).

pride for one's own municipality, reflected in prominent businessmen taking an active role in the council (Szreter, 1988:23). Public health records became a matter of pride for local government too, and this created competition between cities and towns to improve their public service provision and reduce death rates (Szreter, 1997). Thus, a cross-class alliance emerged between urban elites and the urban working class that was committed to investment in improving urban conditions, overcoming opposition to public investment in sanitation.

2.2.3. How was urban sanitation implemented and financed?

The role of local and national government

The 1848 Public Health Act enhanced the regulatory and oversight role of central government, and placed responsibility for implementation of public health in the hands of local authorities. However, public health responsibilities at the local level were fragmented and incoherent. Local governance of public health only improved in 1871 when a Local Government Act designated a single department and minister to oversee local government and public health, and the 1872 and 1875 Public Health Acts made local sanitary authorities responsible for all public health matters (Szreter, 1988).

Financing

Once local government investment in sanitation had become politically feasible, British cities invested heavily in sanitation infrastructure. Local authority investment accounted for over 90% of all public investment in the UK over 40 years between 1870-1910, and investments in water and sanitation accounted for a large part of this investment (Millward and Sheard, 1995: 504). Between 1870-1914, water and public health projects accounted for 30% of the annual average local authority capital expenditure (Bell and Millward, 1998: 227; Wilson, 1997: 44) and in 1884-85, the outstanding stock of water supply loans was roughly double annual revenues.⁴ These figures emphasised how local government had to heavily prioritise spending on water and sanitation to establish the necessary infrastructure for further progress.

Investments in water and sanitation were largely financed by local government borrowing, against a tax base that was predominantly property tax. At this time in the UK, local governments had very little support from central government. Property rates accounted for over half of revenues, with the remainder made up of other fees and some grants from central government, and income from trading activity, which also included profits from municipal

gas and electricity corporations (Millward and Sheard, 1995: 506). The ability of local government to borrow to fund sanitation projects was therefore critical, and this was supported by the passing of the 1848 Public Health Act (Szreter, 1997) and the 1875 Public Works Loans Act, which gave easier access to low-cost and low-risk government loans (Franceys, 2015).

2.2.4. In conclusion

The historical record of how improvements to urban sanitation were achieved in 19th century Britain shows that converging pressure and incentives drove political leaders to acknowledge sanitation as a public, and not private, good and so mandate government action. The political incentives were a blend of desire for economic gain, social concern for the poor, widespread fear of disease, and local civic pride. These incentives mobilised the necessary resources: knowledge – linking sanitation and health; institutional mandates – through adaptive policy and legislation; coordination – clear delegation of responsibility to local sanitary authorities; and finance – raised by local government using loans. Finally, far from being a rapid process, improvements happened over a significant period of time. Awareness of the importance of public health and sanitation as a public good emerged in the mid-19th century, but action took place over a 40-year period (1870-1910).

2.3. Sanitation improvements in 20th century South Korea

There are examples of significant progress in sanitation provision in the 20th century from many countries such as Singapore, South Korea, Malaysia and Thailand. In this section we reflect on one of these, South Korea, during a period of rapid progress on sanitation provision from 1961 (the start of military rule) to date. We draw largely on a WaterAid study by Northover et al., (2015) for this section.

In this South Korean case study, we see that the sanitation challenges and the political incentives for overcoming them were very different to those in the UK. In South Korea, sanitation became a political priority as sanitation and health were understood as signs of modernity and national pride, a way of maintaining state legitimacy, and supporting economic development. Using the same framework, firstly we summarise how these political incentives to address sanitation emerged, and then how public resources were mobilised to improve sanitation services.

⁴ The figure for outstanding loans is from Bell and Millward (1998: 234); the figure for revenues is from Millward and Sheard (1995: 506, Table 1). Converted into 2011 PPP US\$, the loan stock amounts to around \$41 million, and annual revenues to around \$21 million.

2.3.1. The urban sanitation problem in South Korea

Sanitation coverage and treatment in South Korea in 1961 was very low, approximately 2% (Figure 2). Average life expectancy was 53 years and infant mortality was 76 per 1000 (World Bank Group, 2016). At the start of this period from 1961, the level of urbanisation was about 29% but was increasing rapidly, especially in the major cities of Seoul and Busan (World Bank, 1979). However, over the following 50 years, sanitation coverage became almost universal (reaching approximately 90% of the population) (Korean Water and Wastewater Works Association, 2016). This transformation coincided with the level of urbanisation increasing to 82%, and life expectancy increased to 82 years with infant mortality falling to 3.4 per 1000. These improvements were linked to improved sanitation, and other social provisioning, as well as economic growth (McGuire, 2010).

Political incentives for action

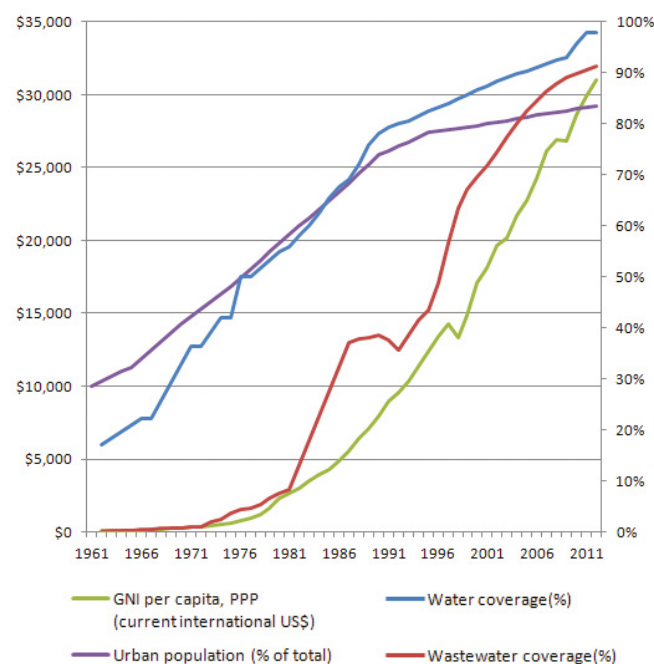
In South Korea, the transformation in sanitation came from high-level political leadership; community-driven demand did not play an important role. National level political interest in improving public sanitation was sustained through successive leaders and governments throughout the entire period of improvements in sanitation (Korean Water and Wastewater Works Association, 2016; Northover et al., 2015). The sustained strength of leadership is not surprising given the authoritarian nature of South Korean government at this time. However, it does not explain why water and sanitation were political priorities.

Similar to 19th century Britain, it seems that multiple political incentives for public investment in water and sanitation services converged and created enough momentum for sustained government-led investment in sanitation. Studies have proposed three interrelated incentives: awareness of the need for sanitation for a healthy workforce and therefore economic development; maintaining state legitimacy and strengthening the social contract through basic service provision; and the idea that sanitation contributes to an image of modernity and national pride (Korean Water and Wastewater Works Association, 2016; McGuire, 2010; Northover et al., 2015).

It is contended that the link between sanitation, a healthy workforce and economic growth was the strongest of these incentives (McGuire, 2010). During times of political uncertainty, government investment in sanitation to increase its legitimacy appears to have been important, for example during the 1971 presidential election when General Park was nearly defeated. However, this investment was more focused on maintaining political support by improving living standards in rural areas than in cities (ibid).

Sanitation also became politically important because government viewed it to be a sign of modernity and national pride, and particularly for improving South

Figure 2: Water and sanitation coverage in South Korea compared to GNI per capita and rate of urbanisation, 1961-2011



Source: Korean Water and Wastewater Works Association, 2016.

Korea's international reputation. For example, South Korea hosted the Olympic Games in 1988 and the World Cup in 2002, and it was only once the decision to host these events had been made that there was significant public investment in sanitation infrastructure (Ryu, 2014).

2.3.2. How was urban sanitation implemented and financed?

In the context of clear political interest in sanitation, South Korea made sanitation a government priority and mobilised the necessary finance and technology to improve sanitation services.

Financing

Large-scale public investment was key to realising improvements in both sanitation and water coverage and yet South Korea embarked on improving water and sanitation while national wealth was still very low (Northover et al., 2015). Investment in water and sanitation provision from 1972-76 was 0.5% of total public investment (World Bank, 1979) but between 1960 and 1975, water supply and wastewater investments were partially funded by the US. Other countries and international development banks and associations also provided support in this period.

From 1976, most new large-scale projects were principally financed through domestic resources instead of international aid. By this time, the South Korean GDP

per capita had greatly increased (Korean Water and Wastewater Works Association, 2016). For example, in 1961 South Korea GDP per capita (in current USD\$) was \$92 rising to \$875 by 1976, and \$6,643 by 1990 (World Bank Group, 2016). Comparing this to estimates of UK GDP per capita at the time of local government investment in sanitation, we see that the UK also benefited from high national wealth. Using the Madison Project estimates of long-run economic performance, in the 1880s, the UK had a similar GDP per capita to that of South Korea, at around \$6,000 in constant 2011 PPP dollar terms, rising to over \$7,000 at the start of the 20th century.⁵

A second important aspect of financing was the use of subsidies. These have been used for both wastewater and water supply. The use of subsidies has been maintained by successive governments and user charges have steadily risen as incomes have risen, to try to improve the financial sustainability of the sector (Korean Water and Wastewater Works Association, 2016).

Knowledge and technology

The development of specific technologies or new knowledge do not feature significantly in the studies of how and why South Korea increased its sanitation coverage in urban areas. The preferred solution adopted was traditional sewers. However, the development and adoption of simplified sewerage systems did play a key role in rural areas where the construction of traditional sewers was considered impractical (Cho, 2013).

Institutional mandates and government coordination

The authoritarian characteristics of the South Korean government during the time of sanitation improvements meant that the mandate for action came from the highest tier of government. Presidents took personal interest in public sector projects and held ministers to account for progress (Ryu, 2014). Policy for water and sanitation investment was coherent and closely controlled at the lower tiers by central government. Sanitation was also part of the country's Five Year Development Plans, which provided a set of clear and regularly revised plans for how sanitation services should be delivered, often directed by presidential decrees (Northover et al., 2015; Ryu, 2014). Integrating plans for water and sanitation into the Five Year Development Plans meant that sanitation infrastructure was planned alongside improvements to other areas of government intervention, including public and environmental health, urban development and economic growth (Korean Water and Wastewater Works Association, 2016).

2.3.3. In conclusion

The South Korea example demonstrates that, like 19th century Britain, once political incentives to improve sanitation are strong, either national or local government can effectively govern and invest in improving sanitation infrastructure. When political leaders perceive sanitation to be important for achieving government objectives, sanitation is treated as a public good rather than a private responsibility. Similar to Britain, the South Korea government clearly recognised the need for better sanitation to support economic growth, and saw sanitation as a sign of modernity to strive for, which led politicians to mandate the necessary public investment.

2.4. A more recent example – eThekweni Municipality

As a final example, we look at a more recent case, eThekweni Municipality in South Africa. We do this in an effort to consider our framework at a more local scale and in a context that is closer to that faced in Tanzanian cities today.

In eThekweni Municipality, we find that sanitation became politically important following apartheid when political leaders needed to address inequalities in sanitation and other service provision as part of efforts to improve inclusion and raise civic pride. Political leadership resulted in local-level action, with local government financing most of the improvements using local sources, and leading locally-designed solutions to sanitation problems in different parts of the city.

2.4.1. The urban sanitation problem in eThekweni Municipality

The eThekweni Municipality, including the city of Durban, faces many of the sanitation related challenges that other urban areas in low- and middle-income countries face. For example, around 20% of the population live in informal dwellings – typically with poor water and sanitation provision. Water is scarce, the topography is challenging, and the city has a mix of rural and dense urban areas (Sutherland et al., 2014). Despite this, eThekweni Water and Sanitation (EWS), the unit of the municipality responsible for water and sanitation provision, has made significant progress since it was established in 1993 (Sutherland et al., 2014), especially in improving provision for low-income residents in informal areas. Although universal sanitation has not yet been achieved (Cross and Buckley, 2016), EWS's achievements mean it is recognised as a world leader in equitable water and sanitation, being awarded the Stockholm Industry Water Award in 2014.

⁵ All historical data is taken from the Madison Project and converted into 2011 PPP dollar terms.

These achievements have been driven by a locally specific mix of political incentives and resources.

Political incentives for action

Basic service provision has been a high priority nationally and locally in South Africa. National and local-level policies for water and sanitation recognise sanitation as a human right (Republic of South Africa, 1997). Historically, this link between water and sanitation and human rights emerged as an attempt to address some of the inequality in access to services that resulted from apartheid, and this link was specifically included in the vision for eThekweni Municipality in its Integrated Development Plans (Department of Water Affairs and Forestry, 1994; eThekweni Municipality, 2003). This drive to address inequality has a community-led component as well as being government directed. South Africa has seen a long history of community activism for rights, including access to basic services, which continues today (Mottiar, 2013). Therefore, similar to Britain, a widely held moral imperative for the South African government to increase equality and quality in public services and sanitation, even at the household-level, is considered a public, not private responsibility.

eThekweni has become an internationally known example of progress on urban water and sanitation. The praise which it has received may be contributing to the local government's continued concern over providing access to sanitation across the whole sanitation chain, for the entire urban population. Basic service provision is one of the three focus areas for the overall strategy of eThekweni Municipality to '...enjoy the reputation as being Africa's most caring and liveable city...' (eThekweni Municipality, 2003). Local leaders seem to have acknowledge the potential role that civic pride in providing more inclusive sanitation services seems to sustain local leaders' commitment to the service.

2.4.2. How was urban sanitation implemented and financed?

Financing

In South Africa, government policy clearly and completely delegates responsibility for sanitation provision to local government and the municipalities have fiscal autonomy to fund their service responsibilities (Republic of South Africa, 1996). As sanitation became a political imperative, EWS found ways to generate the necessary finance to invest in sanitation improvements, including in informal settlements. In 2015, GDP per capita in eThekweni Municipality was circa \$12,000 (Berube et al., 2015), much higher than in the previous two examples of Britain and South Korea, which were around \$6,000. This financial capacity is clearly an advantage for eThekweni Municipality in fulfilling its sanitation responsibility since it can directly raise revenues through local taxation that can be used to cross subsidise sanitation in low-income areas (Sutherland

and Lewis, 2012). The level of expenditure on sanitation is quite significant. Finance has been noted as a constraint within EWS (Cross and Buckley, 2016), despite the authority being able to invest comparatively heavily in sanitation. In 2009/10, capital expenditure on sanitation was 1.7% of the total municipal budget and is high at approximately \$9 per citizen (eThekweni Municipality, 2011).

Knowledge and technology

Unlike the other country examples where improvements were more even across all cities, EWS stands out from other local authorities in South Africa for its creativity in applying different technologies and sustained attention to improving sanitation for all inhabitants. This is demonstrated by the city-wide approach it adopted in devising the spatially differentiated sanitation service provision (EWS, 2012). This approach to provision creatively used location-appropriate technologies rather than defaulting to more traditional responses (Sutherland et al., 2014). For example, residents living in informal settlements were given access to on-site sanitation, such as pit latrines and toilets in communal blocks while residents in formal suburbs were given access to on-site septic tanks. New sanitation technologies were also used to monitor provision. Geographic information system mapping is used to monitor progress in unserved areas and results are reported in annual reviews of the municipalities' development plans. These monitoring mechanisms improve internal accountability on service improvement targets and support incentives within local government to seek further improvements (Sutherland et al., 2014).

Institutional mandates and government coordination

Central government plays a leadership and coordination role through national-level acts and policies related to sanitation, especially by setting sanitation as a national priority and establishing it as a human right. Municipalities, however, are responsible for establishing their own policies and implementation strategies based on these. This includes the type of service provisions that are deemed to meet the national requirements. In eThekweni Municipality, political leadership has been important for directing local government to turn national-level policy into provision at the city level and this has been reinforced by internal accountability mechanisms.

2.4.3. In conclusion

The example of eThekweni Municipality shows that, as in 19th century Britain and 20th century South Korea, locally-specific political incentives coupled with the right resources can lead to the recognition of sanitation as a public good. Subsequent improvements in sanitation infrastructure can be achieved by national or local government. Yet the process of improving urban sanitation

is still politically and technically challenging, and requires time and a significant commitment of resources.

2.5. What conclusions can be drawn?

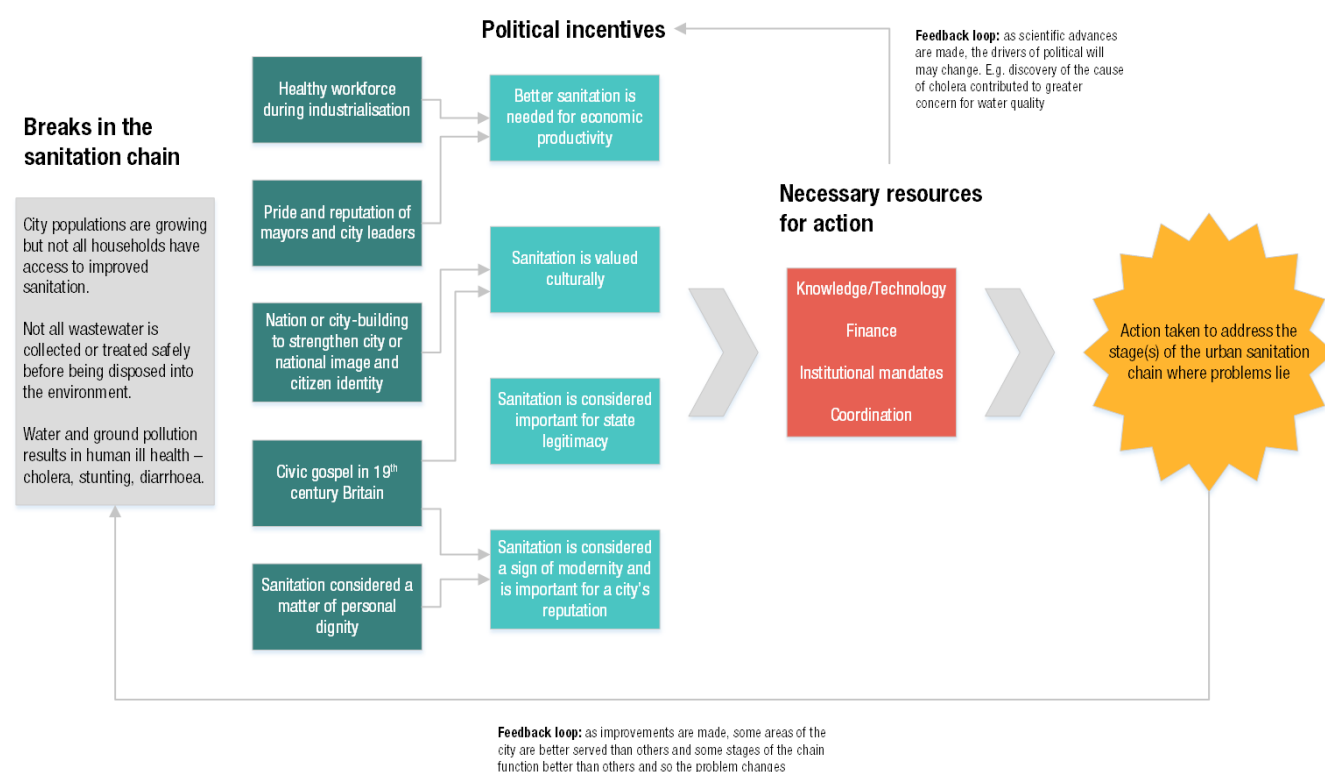
To conclude this section on learning from history, we return to our analytical framework for understanding how progress in urban sanitation happens. The framework proposed four types of political incentives that linked with and mobilised four kinds of resources. Though there are limitations to the approach we have adopted, it is clear from the case studies outlined in this section that political prioritisation of sanitation is an essential first step. Figure 3 shows how the different political incentives and resources identified in the case studies populate the framework.

Thinking about change within this framework revealed two interesting feedback loops in how progress happens (Figure 3). The first of these is the interaction between

scientific advances and political incentives. For example, advances in public understanding of the link between poor sanitation and unhealthy workers led to industrialists being concerned that poor sanitation was a brake on economic productivity, which then became a reason for political leaders to invest resources in sanitation services.

A second feedback loop is how improvements in one part of the sanitation service chain can mean that the remaining sanitation problem becomes different, changing the kind of political incentives relevant to the problem. For example, if containment is identified as a problem and toilets are built to address this, the problem may then shift to treatment or disposal to deal with the increased volume of wastewater now being contained. Changes to this part of the chain are likely to affect different stakeholders and therefore different political incentives and resources will be required.

Figure 3: How different political incentives mobilise resources for action to improve sanitation



3. Toilet trouble in Tanzanian cities: Mwanza and Arusha

We use the lessons learnt in Section 2 to now consider current sanitation challenges in two Tanzanian cities: Mwanza and Arusha. We first try to understand the problem and then use the framework (in Figure 3) to ask what political incentives may exist to mobilise knowledge and technology and finance, and focus institutional mandates and coordination on improving urban sanitation.

Historical examples show how different cities have developed sanitation systems when different political drivers have led government to dedicate finance, technology and public policy to solving sanitation problems. How do these problems and political drivers compare to modern-day cities struggling to expand their sanitation services to quickly growing populations? We turn our attention to two secondary cities in Tanzania: Mwanza and Arusha, and ask what are the specific sanitation problems which they currently face.

Mwanza and Arusha were selected as case studies because they are examples of fast-growing cities where access to sanitation is a serious and persistent challenge. They are both secondary cities, which do not attract the same level of political attention and international investment as for example, Tanzania's largest city, Dar es Salaam but they still have burgeoning populations living in close quarters and so need effective public services to manage wastewater. Mwanza and Arusha present common features of sanitation problems: cholera outbreaks, informal settlements, low local government capacity and autonomy, and limited public interest in sanitation – all issues frequently seen in other developing country cities. The findings from the two case studies here should therefore have some applicability to other Tanzanian cities, and provide wider lessons for cities facing similar challenges in other countries.

In this section, we present the main findings from the case studies. Further detail is included in Annex A and in the full case studies accompanying this report.

3.1. The gap in the sanitation chain

The two cities of Mwanza and Arusha have similar profiles (Table 1). Mwanza is a larger urban area, which is administratively split between Mwanza City Council and Ilemela Municipal Council, and in 2012 had a total population of 706,453. Arusha is a smaller city with a population of 416,442 and an additional 51,766 people living in 10 urban wards of Arusha District Council, of which 7 constitute the newly formed Ngarenaro Township Authority. The local government authorities for these cities have similar levels of revenue per capita and both cities face shortcomings in their sanitation services. The 2012 census data showed that between 21% and 26.1% of households in Mwanza, and 12.6% of households in Arusha did not have access to improved sanitation or any sanitation facilities at all. And this tells only part of the story: there is no reliable data on what proportion of the faecal waste from improved latrines is also managed safely.

Table 1: City profiles of Mwanza and Arusha

	Mwanza City Council	Ilemela Municipal Council (Mwanza)	Arusha City Council
Population	363,452	343,001	416,442
LGA revenue/capita	TZS 167,835 (\$77 USD)	TZS 104,075 (\$48 USD)	TZS 102,473 (\$47 USD)
% of households with unimproved or no sanitation facility	21%	26.10%	12.60%

Source: Tanzania National Bureau of Statistics, Population and Housing Census, 2012 (USD at 2016 prices).

In both Mwanza and Arusha, there are difficulties across the sanitation chain, from household latrines to the safe treatment of collected wastewater. Using the sanitation chain as a guide for analysis, we can identify which stages of the chain are most problematic in the two cities (Box 1).

In Mwanza and Arusha, 2012 census data showed that the majority of households have free-standing pit latrines. Once full, these need to be either emptied or covered over and a new latrine built. A smaller proportion of households (20-25%) had a connection to sewerage or a private or shared septic tank. This meant household wastewater is either contained in tank or pit, of varying quality (stage one of the chain). The second and third stages (emptying and conveyance) are done either through a sewerage connection or by a vacuum truck. In Mwanza and Arusha, the sewerage network serves an estimated 5% to 8% of their respective populations (IB-NET, 2015). It is clear that the majority of households need another way of emptying their latrines.

For many, this is a case of covering the latrine and digging another while others who have a septic tank or cess pit can pay for a vacuum truck to collect the wastewater and transport it to a treatment plant. In both cities, the on-site sanitation services are largely run by private sector companies licenced by the local authority. The on-site sanitation service appears to function well in both cities and illegal dumping has not been reported. The sewerage networks function less well. In Arusha, in particular, the urban water and sanitation authority reports high maintenance costs as sewerage pipes are now too narrow to cope with increasing volumes of wastewater, spillages are frequent and recovering costs from sewerage to fund its expansion is difficult.

The final stages (treatment and disposal) function relatively well in both cities according to the cities' water and sanitation authorities who manage the wastewater treatment sites. While the treatment plants in both cities have been struggling with the volume of wastewater they receive, recent support from the African Development Bank will enable the cities to build upgraded treatment plants with higher capacity and both cities have acquired land for the purpose.

Gap in the first stage of the sanitation chain: household containment

The sanitation chain analysis reveals that the most serious gap in service provision is at the beginning of the service chain: household containment. According to local government officers, households which have unimproved latrines without a safe containment method are mainly in the informal areas of both cities. Interviewees commented how people living in these areas usually use traditional latrines which are not connected to a septic tank and so wastewater soaks into the ground. Even those who do have a connection to a septic tank may still have containment problems; tanks may not be sealed and so wastewater

seeps away, or emptying tanks may not be possible if a vacuum truck cannot access the settlement. This becomes particularly problematic in the rainy season when the rain water washes the latrine waste into the city water sources, streams, rivers and streets. In Arusha, where the water table is high, contamination of water sources poses a constant public health risk and cholera outbreaks are common in both cities, with the most recent outbreaks taking place in 2016 (WHO, 2016, 2008).

There are numerous reasons why households, especially those in informal settlements, do not invest in an improved latrine. These include: unaffordability; lack of tenure security or home ownership, which are disincentives for investing in a latrine; and practical constraints of space and topography to construct a latrine and/or septic tank. Sanitation also remains a social taboo, further limiting public discussion about the need for better sanitation facilities (Mason et al., 2013). Water and sanitation engineers describe the technical difficulty of constructing sanitation services in informal settlements where there are multiple engineering challenges. These technical, cultural and financial barriers prevent poor urban households from investing in improved latrines while making government intervention difficult too.

However, the historical case studies all demonstrated that when political commitment to improving sanitation is strong, technical and financial challenges can be overcome. The following describes why political interest is weak in the household containment stage of the sanitation chain, and how this results in weak government financing and management of sanitation services.

Few political incentives to focus on universal urban sanitation

Firstly, government intervention is limited because household sanitation is perceived as a private good. In Tanzania, the 2009 Public Health Act and the National Sanitation and Hygiene Policy maintain that government should not subsidise household sanitation facilities (Tremolet and Binder, 2013). This is a common notion in many countries because sanitation is accessed directly by households and is not usually shared (Mason et al., 2014). However, the safe removal and treatment of a household's wastewater is more commonly recognised as a public good because this is a service which is arguably better managed collectively (Mosello et al., 2016). The focus of Tanzanian government investment is therefore in sewerage, and even vacuum trucks for on-site services are considered a private service which requires little public intervention.

In the eThekweni example, government came to acknowledge that where households are too poor to invest in their own sanitation, household-level sanitation becomes a public good. In Tanzania, however, household sanitation remains a low political priority for a number of reasons. Despite cholera being common in Mwanza and Arusha, only a small section of the population is directly affected:

those who do not have sanitation facilities themselves. This means that the costs of incomplete sanitation coverage are localised. The negative impact of poor sanitation is therefore not particularly visible and escapes significant public attention. Even in ward-level consultation on the priorities of low-income citizens, ward officers report that sanitation is rarely mentioned and people commonly prioritise healthcare, roads and education above sanitation services. Unlike the eThekweni example, in Mwanza and Arusha, those who can access improved sanitation are not active in demanding it and there is no strong civil society movement advocating for better sanitation either. Instead, it seems the greatest public pressure on local politicians is for improving more visible services, such as the construction of roads or schools (Bakker et al., 2008; Mason et al., 2014).

The low visibility of sanitation in comparison to the more visible problem of solid waste management demonstrates how political attention in Tanzania is directed. In both cities, the management of solid waste is given far more attention than the management of wastewater and this is a common to many other countries (WaterAid, 2016). In Mwanza and Arusha, solid waste management is a national and local government priority. Environmental health departments are instructed to focus their efforts on this problem which more noticeably affects the whole urban population. The Tanzanian president has issued a directive designating every last Saturday of the month for public general cleansing. This direct leadership on solid waste management has propelled local government and even ward-level communities into taking action. This demonstrates the influence which central government priorities can have on local government in Tanzania.

While sanitation is not prioritised politically at the city level, the Tanzanian National Sanitation Campaign (NSC), does indicate some high-level political intent to improve sanitation. The NSC began in 2011 and the first phase (2011-2015) focused on rural sanitation (SHARE Consortium, 2016). The second phase of the Campaign will focus on urban sanitation; constructing latrines in secondary schools, healthcare facilities and other public spaces. The campaign is financed by the African Development Bank and the UK Department for International Development suggesting the drive for the campaign comes largely from donors. And although the Government of Tanzania has also committed funding, neither donors nor national government have included activities to address household-level difficulties in accessing sanitation – political interest in this area is still weak.

Further still, political interest in improving public services more generally in Tanzania is limited by complicated patronage relations between politicians and powerful groups at both the national and local level (Hoffman, 2013). Politicians can maintain their power through ensuring preferential treatment or bribes to their

supporters, which reduces the importance of solving public service problems in retaining power. Despite this, accountability to citizens may be improving as competitive politics, especially at the local level, can create space for politicians to appeal to the electorate through promises of better public service quality (Tsubura, 2015). Afrobarometer results found that Tanzanians increasingly recognise politicians for their ability to improve public policy and services (Tsubura, 2015), although sanitation is still being under-prioritised in favour of health, education and farming (Afrobarometer/REPOA, 2015).

3.2. Fragmented governance arrangements

In Tanzania, the lack of political commitment to universal urban sanitation is reflected in weak government policy, programming and financing towards this issue. Interviewees commented that although the process to develop a central government policy on sanitation was begun in 2005, this remains in draft with a new policy now being developed. At the national level, despite a 2010 Memorandum of Understanding for their respective sanitation roles, the Ministry of Water and Irrigation, and the Ministry of Health, Community Development, Gender, Elderly and Children (MoHCDGEC), still lack clarity in applying their resources to sanitation issues (Tremolet and Binder, 2013).

In the public services, health departments are led by doctors who do not always see the relevance of sanitation to their department's work. One senior local government health officer did not wish to be interviewed for this research because they firmly believed sanitation had nothing to do with their health department. Moreover, urban planning departments have only a very minor role in sanitation planning and lack the power to implement plans for informal settlement upgrading or service delivery. While local government environmental health departments' role in sanitation is only to enforce environmental protection laws. These activities are uncoordinated and all departments overlook the problem in the first stage of the sanitation chain – the inability of poor households to safely contain their wastewater.

To resolve coordination problems for sanitation, in some countries national government has created semi-autonomous public agencies to be responsible for urban water and sanitation services. The Tanzanian government has recently taken such a decision, in which local Urban Water and Sanitation Authorities (UWSAs) are responsible for all networked and on-site sanitation services, leaving local governments with little formal role or funding for urban sanitation provision. The UWSAs are accountable to central, not local government and so it is the national government which determines their focus. In Tanzania this means that the UWSAs have a clear mandate to expand sewerage across the city but they are not instructed to

respond to sanitation related health problems in informal settlements. Additionally, UWSAs are expected to operate on a commercial basis, aiming for full cost recovery which does not incentivise them to invest in the poorer sectors of the cities. UWSAs are not directly accountable to local residents which leaves citizens with limited channels of influence over the quality of local sanitation services.

Whatever the governance arrangement at the local level, in Tanzania national government continues to strongly influence how local governments and the UWSAs allocate their budgets and prioritise activities. Since sanitation in informal settlements is not a priority at the national level, funding and directives do not enable or encourage local government or UWSAs to tackle sanitation in informal settlements either.

3.3. Difficulty financing a city-wide system

Low political motivation to improve urban sanitation means that government funding is limited. Funding streams for sanitation are small, difficult to discern and tend to be hidden within budgets for water provision. For example, in 2012 the proportion of Tanzania's GDP which was invested in sanitation was less than 0.1% (Fidelis and Msambazi, 2012).

Financing for sewerage and wastewater plants is covered by central government grants to the UWSAs and their own revenue from user-fees. However, the UWSAs in Mwanza and Arusha describe financing sanitation as a challenge. In Mwanza, the UWSA is investing in expanding sewerage but interviewees described how many households do not want to connect to the network because the service charges are far more expensive than the cost of emptying their septic tank. Inevitably, this makes it difficult for the UWSA to recover the cost of expanding the sewerage network. Although demand for sewerage is low, the UWSA considers this the most appropriate way to improve urban sanitation and capture the whole market for wastewater services.

Officers from the UWSA in Arusha describe similar difficulties financing sewerage maintenance and extension. Unlike Mwanza, interviews revealed a strong household demand for sewerage connections but government investment in sanitation in Arusha has been inadequate for many years. Interviewees emphasised that urban planning has long been side-lined which has limited the power of urban planning at the city level too, blaming the growth of informal settlements and the lack of planning for sewerage on the lack of power in urban development departments to enforce plans and regulations.

International donors and national government typically do not invest in the first stage of the chain: containment. This means that if local government in Mwanza or Arusha wanted to intervene to improve the poorest households' access to sanitation, they would need to generate their own funds to do so. However, in Tanzania, political and

administrative power is highly centralised and central government is now recentralising the collection of property tax, previously a core source of local government revenue (Government of Tanzania, 2016). Local governments remain highly dependent on intergovernmental transfers, on average receiving 91% of their revenue from central government (Government of Tanzania, 2016), and nearly all local government plans align with central government spending priorities (Fjeldstad et al., 2010; Tidemand and Msami, 2010).

The transfer of sanitation to the UWSAs means that all the financing for urban sanitation is now separated from local government authorities. As a result, even if local government generates some of its own revenues, it is not currently possible for these to be transferred to the UWSA to cross-subsidise its sanitation work. Therefore, although local government is likely to have stronger interests than the UWSA in improving household sanitation in informal settlements, under the current governance structure it is the UWSA which would have to implement interventions and pay for them. This misalignment of government interests and responsibilities and their associated costs and benefits may be an additional barrier to local level action on urban household sanitation.

Exploring how local government could increase its own revenue and support low-cost interventions in informal settlements is one solution to tackling sanitation issues in these cities, and this is explored further in Section 4. However, financing sanitation upgrades in informal settlements would be far easier if central government were to provide specific financial and policy direction. In theory, public finance could be redirected from the UWSA to local government to lead sanitation interventions in informal settlements. But the UWSAs' have a commercial model of service provision, which acts as a disincentive to investing in informal settlements where cost-recovery is likely to be low.

3.4. Informal settlements are left behind

What is clearly missing in both Mwanza and Arusha is a city-wide approach to the whole sanitation chain. The concept of 'city-wide planning' for urban sanitation emphasises the need for different forms of sanitation in different areas of the city, and that sanitation planning has to be integrated into plans for other urban service systems (Medland et al., 2015).

In Mwanza, the only sanitation activities with government participation directed at informal settlements is a simplified sewerage pilot project. This is led by donors and is part of the 'Lake Victoria Water and Sanitation Programme', funded by the African Development Bank. The pilot project aims to connect some households in an informal settlement to a simplified sewerage network. City planners described enthusiasm that they were finally being supported to tackle a technically difficult problem, which

they could not solve alone. Here, local government officers appear to be motivated to improve sanitation in informal settlements but without political backing, they lack the power to enforce regulation, invest resources or apply technical expertise to this challenge. Currently, government involvement in intermediary solutions for sanitation in areas of the city which are not served by the main sewerage network is always led by a donor. If they can show tangible success, central government may be persuaded to invest more.

3.5. Why does the problem persist?

Understanding the specific nature of the sanitation problem in Mwanza and Arusha reveals why the change processes which happened in other cities to improve sanitation are not driving change in these two Tanzanian cities now. We reflect on why this is the case, comparing the drivers of change in the 19th and 20th century cities with the situation in Mwanza and Arusha, and make suggestions for what might drive change in Tanzania instead.

Political incentives to improve sanitation in Tanzania

In the examples of 19th and 20th century cities, we see political interest in improving sanitation coming from four broad areas:

1. Better sanitation needed for economic productivity because it affects the health of all city inhabitants;
2. Better sanitation considered a sign of modernity and important for a city's reputation;
3. Sanitation valued culturally; and
4. Sanitation considered important for state legitimacy.

In Tanzanian cities, the first reason for improving sanitation – economic productivity – is weak since public health problems caused by poor sanitation in Tanzanian cities now are localised and occasional, compared to the widespread outbreaks of cholera in 19th century British cities. As a result, water-borne diseases do not seem to affect the urban population as visibly, and so there is not widespread fear of disease noticeably holding back economic productivity.

The second argument – city reputation – is stronger. We see local government officials expressing frustration at the presence of informal settlements because they perceive them to be visible signs of under-development in their city. This is similar to aspirational visions of modernity, as seen in South Korea, which could drive public sector investment in services to informal areas.

Again, the third source of political incentives – cultural values – appears to be relatively weak in Tanzania. Government health departments in Tanzania do not perceive sanitation as integral to their work, as they did in Britain. Ideologically driven interventions to support the poorest households to access sanitation, as seen in

eThekwini, are not led by Tanzanian government but come mainly from non-government organisations and international donors. Even those who are most affected by poor sanitation are not vocal in asking government to improve this and instead call on local politicians to improve other services, such as healthcare.

The lack of public pressure and interest in sanitation also means that the fourth source of political interest – state legitimacy – does not have as much relevance in Tanzania. While public demands for politicians to improve public services may be growing, this is directed at the most visible services, such as schools and hospitals, whereas less visible and more private services such as sanitation receive little public attention. Some international development organisations have tried to encourage communities to make stronger demands on government for better public services but on its own, this approach is rarely effective (Fox, 2014). Activities aiming to increase public understanding of the importance of sanitation may be important for the uptake of sanitation services (Mason et al., 2013). But, given that the households who are most affected are socially marginalised, a stronger demand for sanitation from this group is unlikely to be enough to elicit a favourable response from political leaders.

Limited mobilisation of resources

In the face of weak political incentives to improve urban sanitation, government attention to sanitation policy, cross-sector coordination, financial investment and technological improvements for sanitation will also remain weak. While finance and technology for better sanitation is supported in part by donors, the notion of public health does not play a central role in government discourse and so there is little government coordination of sanitation interventions for health outcomes. Even the local government health departments seem to overlook the connection between health and sanitation, which means sanitation is treated as a technical engineering task serving formal areas of a city.

In the other example cities, government coordination, policy, and institutional mandates for sanitation services were strong. Local governments were therefore encouraged to make concerted efforts to improve and invest in sanitation. It is difficult to compare levels of spending from one city and one period of history to another but the examples from other cities suggest that sustained and relatively high levels of investment are needed. Tanzania is not a wealthy country but it does receive financial assistance from donors to improve its sanitation infrastructure. The greater obstacle to investing in sanitation in Tanzania therefore seems to be the weak political interest in doing so, which means it is not prioritised in government budgets.

Sanitation outcome

Most households in Mwanza and Arusha do have ways of containing their wastewater, albeit imperfectly. As a

result, government efforts are focused on improving the communal treatment of wastewater, since this cannot reasonably be left to private action alone. This may be a logically justifiable use of limited public resources but it means that the problem of unimproved household latrines and containment units remains unlikely to change. Households and communities are left to develop coping mechanisms or small-scale improvement projects. Consequently, while most of the cities' inhabitants can

avoid water-borne diseases, those living in marginalised, informal areas cannot. In informal settlements, these problems are compounded by low-incomes, insecure tenure, poor accessibility, ill-health and usually limited access to other basic services too. In such a context, a city's development cannot reach its full potential and given the rapid rate of population growth in Tanzanian cities, these problems are set to get worse.

4. What could drive improvements in Mwanza and Arusha?

In this section, we argue that sanitation provision in Mwanza and Arusha requires action by different parts of government at each stage of the sanitation chain – not just in wastewater conveyance and treatment. Comparing across the different cities discussed in this research, we consider what might create sufficient political interest to invest resources, focus government attention, and apply technological expertise to improving sanitation in Mwanza and Arusha. By identifying what is already working well for sanitation in Mwanza and Arusha, we also discuss possible transition strategies so that the urban sanitation system reaches those who are currently outside of it.

4.1. Political incentives to solve the problem

There are four areas of political will identified from the analysis of progress in other cities:

1. Better sanitation needed for economic productivity because it affects the health of all city inhabitants;
2. Better sanitation considered a sign of modernity and important for a city's reputation;
3. Sanitation valued culturally; and
4. Sanitation considered important for state legitimacy (see Figure 1).

In Mwanza and Arusha, two of these possible drivers of political interest may be relevant. Firstly, cultural pressure and assistance from international donors and NGOs to improve the living standards of the poor; and secondly, reputation and the aspirations of city leaders to improve their city's image by formalising and upgrading informal settlements.

The international development community is emphasising far more than before the importance of whole-chain and city-wide sanitation systems. Tanzanian government sanitation policy has not prioritised sanitation for the urban poor but organisations such as UN-Habitat are supporting and advocating for action on the issue in Tanzania. For example, the pilot project for simplified

sewerage in one of the informal settlements in Mwanza is supported by UN-Habitat, with the participation of the city council and the UWSA, with the Tanzanian government contributing 15% of the budget.

The existence of the Tanzanian National Sanitation Campaign (NSC) is also an indication of government compliance to donor-led programmes to improve sanitation services. The second phase does not include informal settlements but the existence of the campaign may be a first step from which further government programming on sanitation for the urban poor could be built. While the 2009 Public Health Act and the National Sanitation and Hygiene Policy still maintain that government should not subsidise household sanitation facilities, the government has committed to supporting public promotion campaigns on hygiene and the development of more suitable sanitation technologies (Tremolet and Binder, 2013). Turning a donor-led agenda into a domestic one is key and it may be that as national government seeks to improve its international reputation, international expectations of sanitation standards can push further government investment in this area.

Currently, the presidential directive on better hygiene directs attention to solid waste management not sanitation but this concern for environmental health could also be leveraged by those who want to see sanitation improvements too. Arguing that preventing pollution from household latrines is necessary for environmental health and that issuing fines for pollution is not sufficient to address this problem. Cross-sector, politically engaged work by non-government actors could also build alliances to advocate for greater attention to public health in cities. Collaborating with others who support better road safety, air quality, waste disposal and other core services which affect the environmental and public health may be an effective way of advocating for better urban health.

The other potential driver of political attention to urban sanitation in Mwanza and Arusha is city leaders' pride in their city's reputation. City leaders may gain pride and credibility if they are recognised for cleaning-up and regularising their city. Local governments are often

reluctant to extend formal services to informal settlements in case this is considered an endorsement of the settlement (Bakker et al., 2008). However, inter-city competition and awards for improving sanitation have been found to create an incentive for political leaders to increase public investment in sanitation services in their city – that includes those in informal settlements (WaterAid, 2016). In Tanzania, public attitudes to informal settlements are largely negative, they are considered unsightly and illegal areas of cities. These public attitudes may encourage city leaders to engage more in urban planning. These inhabitants are already engaged, albeit negatively, with the public image of their city; they are concerned about these informal settlements and are likely to notice efforts to upgrade them, allowing inhabitants to feel more pride as the city improves. There are early signs of this in the settlement upgrading projects implemented in several cities in Tanzania and current plans in the Mwanza Urban Master Plan. This suggests that donor-led initiatives to improve services in informal settlements are being adopted by domestic actors, albeit with the different aim of formalising settlements and improving the image of their cities.

4.2. Technology, finance and institutional arrangements

The current government vision for urban sanitation is to have city-wide sewerage coverage but government plans acknowledge that this will be a slow process. In Mwanza, the UWSA business plan has a target of expanding the sewerage network to only 20% of the city population by 2018. Until sewerage eventually reaches the whole urban population, households are expected to continue to use private on-site sanitation services. Whether or not city-wide access to sewerage is an appropriate way of achieving universal sanitation, intermediary interventions will still be necessary so that all households have better access to sanitation in the meantime. Here, we suggest that comparatively low-cost and local-level interventions are needed. Learning from the approach taken in eThekweni, these should be pragmatic actions to improve sanitation in the short to medium term, enabling the poorest households to have improved latrines and connect to either simplified sewerage or private sector on-site services.

Technology

Various forms of sanitation technology have been developed to overcome the practical challenges of improving sanitation in informal settlements. Experience from cities across the world shows how different types of latrine and latrine emptying systems can work in dense and informal areas. For example, in Dar es Salaam the Federation of the Urban Poor and the Centre for Community Initiatives (CCI) use community mapping to first gather data on the sanitation problem in informal

settlements, then work with communities to offer loans for latrine construction using a range of technologies. These include simplified sewerage, small wastewater treatment areas (dewats), simple latrine emptiers (gaspers) and ecological toilets to create culture and location-appropriate sanitation systems. This experience, and others elsewhere, could inform wider government supported interventions and form a base for larger scale investment in Mwanza and Arusha.

Another approach could be to focus on supporting poorer households to access on-site sanitation services. The UWSAs acknowledge that most households in Mwanza and Arusha do not have a sewerage connection and so may rely upon privately-managed on-site sanitation services to collect and remove household wastewater. These privately operated services function well in both cities. An important intermediary step could, therefore, be to enable more households to use private on-site sanitation. This could involve a range of interventions such as subsidising the cost of vacuum truck services, improving road access to informal settlements, and investing in shared toilet facilities or communal septic tank systems. Similar to actions taken in eThekweni, local government could aim to facilitate access to sanitation in different ways, depending on current income levels, household facilities and vehicle access in different parts of their city.

Finance

Currently, there is very little reliable information about how developing country governments finance sanitation across the whole sanitation chain or at the city level (Medland et al., 2015). In Britain, local government borrowed heavily from central government against a reliable future revenue stream of property taxes. In South Korea, national public funds, user-fees and international aid supported sanitation investments. While in eThekweni, local government used cross-subsidisation from its own revenues as one source of finance. A feasible form of financing therefore depends largely on the country's intergovernmental relations and level of decentralisation, and on each local government's ability to administer local tax collection and to borrow (Nixon et al., 2015).

The case studies clearly show that the financing for sanitation can come from different sources. It is first important to understand the availability of different financial resources, such as household willingness to pay, potential for local government revenue generation, central government budget allocations, and the interest of donors. Different sources of finance may also be more appropriate for different interventions. For example, donors are often well-placed to fund large infrastructure and provide low-cost loans, whereas local government budgets may be used to redistribute finance to support services which the urban poor often cannot afford.

We argue that whichever model of financing a government uses for sanitation, the costs are high and need

to be sustained. While budgetary figures are not directly comparable to other cities, eThekweni's EWS spent \$9 per capita on sanitation alone. This is compared with the \$12-13 per capita cost allocated for all water and sanitation costs in Mwanza and Arusha in 2012 and 2014 (MWAUWASA, 2014; AUWSA, 2012). The reason for this is, in part, because local government in Tanzania has very low financial capacity since it no longer has control of property tax collection, and there are many restrictions on local government borrowing. For example, LGAs must obtain the permission of the minister for local government who then must consult with the Minister of Finance – this is a lengthy process. Moreover, the size of the loan cannot exceed the total own source revenues which the LGA raised in the previous financial year, and LGAs cannot borrow internationally. These constraints suggest LGAs need to either demand greater fiscal autonomy and/or be supported financially by central government to invest in sanitation. In the absence of political support for investing in urban household sanitation, international donors may be the only source of finance for this. This finance could be offered, national legislation permitting, as low-cost loans from development banks, analogous to those available to local government from central government in 19th century Britain.

Critically, however, the slow and costly process of expanding networked sanitation means that expectations of how quickly formal sewerage networks will reach an entire urban population must be realistic. While not always popular, investing in intermediary solutions for areas of the city not yet connected to the main sewerage is necessary. This will require central government to broaden its investment strategy to financially enable UWSAs and/or local government authorities to develop sanitation systems in informal settlements. Here, recent work by the German Development Agency (GIZ) to support local governments in Tanzania to improve their own revenue collection could be valuable.

Institutional mandates

In many countries, governments consider sanitation as a household responsibility or something which international donors can deliver (WaterAid, 2016). However, examples of progress seen in Britain and in South Africa suggest that local government involvement can be very beneficial.

Currently, local government departments in Mwanza and Arusha all point in opposite directions from addressing the gap in the first stage of the sanitation chain. The UWSAs are responsible for the water and sewerage systems but do not intervene at the household level. Local government health departments are focused on curative health, not on the public and preventative health benefits of sanitation, except by enforcing legislation, and environmental health focuses on solid waste management, rather than preventing water and ground pollution. Finally, urban planning officers could theoretically have oversight

of their city's infrastructure and housing development but these plans are often side-lined as each government department pursues its own objectives. This underlines the importance of having a clear institutional mandate for sanitation and specific authority able to lead and coordinate its implementation.

The current institutional direction on sanitation instructs local government to step aside to give the UWSAs responsibility for networked and non-networked sanitation. The role of other ministries at the national level, and departments at the local level remains vague and so government officers outside of the UWSAs are not compelled to act on sanitation. Advocacy to central government may therefore be important to demand clearer policy and targeted financing for LGAs to address sanitation problems outside of the UWSAs' mandate.

Coordination

In 19th century Britain, the establishment of local sanitary authorities to coordinate cross-sector sanitation improvements helped to align the different government sanitation initiatives. While challenging, cross-sector involvement in sanitation means interventions address all aspects of the sanitation chain to enable sanitation programmes to be paid for by the departments which reap most of the benefits. The current Tanzanian NSC is an example of this since the campaign involves a range of ministries, including the Ministry of Health, Community Development, Gender, Elderly and Children (MoHCDGEC), Ministry of Education and Vocational Training (MoEVT), the Ministry of Water and Irrigation (MoWI) and the President's Office for Regional Administration and Local Government (PORALG), NGOs, donors and private sector organisations, and is led and coordinated by the Ministry of Health and Social Welfare (MoHSW). This demonstrates the capability of the Tanzanian government to coordinate cross-departmental and cross-sector sanitation intervention. Now is the time for this cross-sector programme to focus on household level urban sanitation.

Aligning and possibly joining up government sanitation programming with the work of non-government organisations in informal settlements is another important coordination task. Learning from years of trial and error in cities across the world, some of the most well-known examples of sanitation in informal settlements, such as the Orangi Pilot Project in Pakistan, involve service users and often a brokering organisation such as an NGO (Das, 2015). WaterAid and CCI are already engaged in this kind of work in some Tanzanian cities. Studies of sanitation projects in cities in India and Johannesburg found that when communities are supported by local government or another organisation, collective efforts by households to improve sanitation can be coordinated with larger interventions to catalyse wider change (Adegun, 2015; Das, 2015). This is reinforced by research in Dar es Salaam

which found that expansion of the formal sanitation network to community-led initiatives in informal settlements can help to close the gap in the sanitation chain (Jenkins et al., 2014)

An increasingly popular way of connecting communities in informal settlements to local government is through community mapping. This work, in which households in informal settlements map the needs of their community, is being led internationally by Shack/Slum Dwellers International. Studies of this approach have found that it can be effective in building a relationship between communities and local government to reveal to local

government the extent of the problem (Banana et al., 2015). Currently in Mwanza, the Federation of the Urban Poor works in isolation from local government and so simply joining up local-level initiatives and sharing the Federation's survey findings on sanitation with local government could be a useful first step.

This set of recommendations is directed at the specific sanitation challenges in Mwanza and Arusha. In the following section, we look at urban sanitation more broadly and discuss a set of common principles identified from the case studies which could be relevant to other developing cities experiencing urban sanitation problems.

5. Taking action on an urgent urban problem – a summary

Our analysis of the political drivers of improved sanitation in cities across the world suggests that political interest in sanitation can emerge for different reasons. Once political commitment is strong, the necessary finance, technology, leadership and coordination can be marshalled to overcome the practical difficulties of delivering urban sanitation. Where political commitment is not strong, as in Tanzania, thinking about multiple, different pathways for building political incentives and tapping into different political motivations is a necessary first step. Using this analysis we present a framework of principles to be considered by policy-makers and practitioners attempting to improve urban sanitation systems.

5.1. A framework of considerations for other fast-growing cities with sanitation problems

1. Finding the break(s) in the sanitation chain

The first step is understanding the nature of the sanitation problem: which part of the sanitation chain requires attention for full public and environmental health benefits to be achieved? In Tanzanian cities, government intervention is focused on the secondary stages of the sanitation chain: wastewater removal, conveyance and treatment, and these services function relatively well. The gap in the chain causing the most public and environmental health problems and where government intervention is all but absent is household sanitation facilities. The inability of the poorest urban households living in informal settlements to access improved sanitation is a persistent problem.

2. Identify political incentives to address the problem

Attempts by international organisations to support improvements to public services and public sector effectiveness often have limited results (Andrews, 2013). This is attributed to the tendency for externally-led development programmes to focus on technical and financial support, overlooking the complex and political processes needed to create the government incentives to maintain technical improvements (Blum et al., 2012; Cummings, 2015). Increasing the coverage of urban sanitation is a technically difficult, time-intensive and expensive problem and so political incentives for focusing public resources and skills on overcoming these problems are essential.

Our analysis of historical cases of progress identified four areas of political incentives to improve urban sanitation:

1. Better sanitation needed for economic productivity because it affects the health of all city inhabitants;
2. Better sanitation considered a sign of modernity and is important for a city's reputation;
3. Sanitation is valued culturally; and
4. Sanitation considered important for state legitimacy.

On top of this, in the Tanzanian case studies the second and third factors appear to be most relevant: city leaders' pride in improving the reputation of their city, a broad public opinion that informal settlements should be formalised and cleaned-up, and pressure from international development organisations to improve the living conditions of the urban poor.

The main challenge is to consider how domestic government interest in sanitation can be strengthened, to support local organisations and actors to leverage and

strengthen these sources of domestic political interest in sanitation, local organisations and actors working on sanitation may benefit from external support. Depending on the intergovernmental relations and decentralisation process in each country, city mayors, sector ministers, or the prime minister may be most important for driving a sanitation agenda. A good understanding of how political priorities at the national and sub-national level may relate to sanitation is therefore important.

3. Be strategic and work collectively

Studies of improvements to public sector problems often describe the presence of a coalition of local actors who are able to generate enough pressure and create sufficient incentives to change the status quo (e.g. Booth and Unsworth, 2014; Faustino and Fabella, 2011). The examples of 19th century British cities and Durban in South Africa post-apartheid support this idea, demonstrating how public pressure from a number of angles can be a powerful force for changing political priorities.

To encourage improvements in public sanitation services, it may therefore be useful for organisations and individuals to work collectively and strategically. There may be a range of different local, national or international stakeholders who have a shared interest in urban health (albeit for different reasons). These stakeholders could build a cross-sector and multi-level alliance, across health departments, urban planning departments, community organisations, and NGOs to increase political attention on urban sanitation. Moreover, this report argues that the drivers of political interest in sanitation are specific to each city or country context. Therefore, any advocacy, negotiation, or campaigning strategy will need to tap into the particular political priorities of each locality and work within the existing political context.

Identifying where organisations and initiatives are already having some success may also be a useful way of approaching the problem. In Mwanza and Arusha, the private sector on-site sanitation services function well and there are projects by community-based organisations offering loans to households in informal settlements to build improved latrines. Pockets of effective action on sanitation problems such as these could be supported and connected so that their achievements are taken to a larger scale and can demonstrate how some of the barriers to sanitation can be overcome.

4. Sanitation programmes need pragmatism and realism

A long-term goal of universal sanitation is of course important but improving sanitation is a slow and expensive process. Governments may aim to achieve universal sanitation by building an extensive sewerage system but

there is still an urgent need for short- to medium-term solutions to sanitation problems.

We acknowledge that there is not a ready-made solution to urban sanitation problems. Supporting the development of intermediary solutions will therefore need to take an incremental approach, experimenting with different activities, and led by those who have a stake in improving sanitation in specific country contexts (c.f. Booth and Unsworth, 2014; Faustino and Booth, 2014). Our case studies show that interventions typically learn by doing, discovering more effective ways of solving sanitation problems by trial and error. For example, government legislation and policy may have to adapt as progress is made in some areas but not others, some community-based projects may be taken to scale while others cannot, and new sources of finance may become available as projects show they are successful. This calls for government or externally-led programmes for urban sanitation to be flexible and reflective so that they can learn from their experiences and respond to changing challenges (Valters et al., 2016) – in the same way that legislation in 19th century Britain was gradually amended and improved, and user-fees in South Korea were raised as incomes increased.

While integrating sanitation provision into the city's system of services and its development vision is important, this also needs to be realistic. Mapping the current patterns of access and provision across the sanitation chain and across the city should improve government understanding of where the gaps exist. Likewise, having a realistic estimation of the time needed to achieve improvements in sanitation is important for avoiding disappointment or fatigue as, typically, interventions take time to show results. Common to other difficult development interventions, formulating a strategy that is based on detailed understanding of the local complexities of the challenge, and having targets which are incremental and can be revised is helpful (Valters et al., 2016).

Political prioritisation needs to come first

There are many studies into different financing options, technical solutions, and institutional structures for urban sanitation services and this report does not aim to recommend which are best. Rather, this framework of considerations emphasises that sanitation has to become a political priority before the technical challenges can be overcome. Unpacking the blanket term 'political incentives', this report identifies different ways in which political leaders can become motivated to direct public resources at sanitation services, even in challenging contexts. Finding ways to strengthen political interest in sanitation is a critical first step before the details of government coordination, policy, financing, and city-scale planning can be tackled.

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Annex A: Mwanza and Arusha case studies

The accompanying case studies explore how two current day developing secondary cities are experiencing political and financial challenges in ensuring improved sanitation. The case studies aim to assess the potential for government-led improvements in the whole sanitation chain.

Decentralisation and urban governance of sanitation in Tanzania

Local government in urban areas is comprised of city, municipal and town Councils, ward development committees (WDCs), and mitaa (neighbourhoods). However, local government in Tanzania, as in many other sub-Saharan African countries, remains heavily controlled by central government (Boex and Martinez-Vazquez, 2006). For instance, national party leaders nominate candidates for local council positions and the ruling party Chama Cha Mapinduzi (CCM) has, until recently been strongly represented by councillors at the local level, with limited political opposition (Venugopal and Yilmaz, 2010). Likewise, the Public Service Recruitment Secretariat (PSRS), which is a central government agency, recruits civil service staff for local government positions, and the most senior positions are appointed by the President or the PORALG (Ridder et al., 2015). The situation has changed following the last national election in 2010, which saw a significant increase in representation of the opposition parties at the local level, especially in the urban areas. Examples include Dar es Salaam and Arusha City Councils, and Kinondoni and Ilala Municipal Councils in Dar es Salaam.

The relatively high centralisation of political and administrative power in Tanzania persists despite two national decentralisation reform programmes: the Local Government Reform Program (LGRP) I and II. By 2008, after the first phase of the LGRP, responsibility for some basic services had been decentralised to LGAs along with the deconcentration of some responsibility for water, sanitation and roads (Government of Tanzania, 2016). However, the second phase of the LGRP has not been fully implemented and central government has recentralised the management of local government staff (Government of Tanzania, 2016).

For urban water and sanitation, decentralisation processes have resulted in significant management changes. At the national level, sanitation is primarily the responsibility of the Ministry of Water and Irrigation (MoWI) which develops water policy and strategy. However, Urban Water and Sanitation Authorities (UWSAs) have been introduced which are now responsible for water and sanitation in urban areas. UWSAs are accountable to the MoWI and are regulated by the central Energy and Water Utility Regulatory Authority (EWURA).

The provision of sanitation and wastewater management concerns public and environmental health, local infrastructure development, human settlement planning, and road development which is the responsibility of LGA departments as well as their respective ministries, the Ministry for Lands, Housing and Human Settlements Development (MLHSD) and the Ministry for Health and Social Welfare. Local government authorities (LGA) plans and budgets are closely overseen by the PORALG. However, UWSAs are not accountable to the LGAs operating in the same area, and so UWSAs can contradict LGA by-laws and plans, obstructing cross-sector coordination of urban sanitation services at the local level (Government of Tanzania, 2016).

Financing for urban services has also changed as a result of decentralisation. The LGRPs led to an increase in intergovernmental transfers to local government budgets due to higher intergovernmental transfers, although the proportion of public funds transferred from central government to LGAs has hardly changed (Tidemand and Msami, 2010). LGAs are highly dependent on intergovernmental transfers, on average receiving 91% (Government of Tanzania, 2016) of their revenue from central government (Tidemand and Msami, 2010). To support LGAs in generating greater revenues themselves, the government has passed a Public Private Partnership Act (2010) and a Public Procurement Act (2011), which allow UWSAs and LGAs to seek private sector involvement in the provision of services (Government of Tanzania, 2016).

A new mechanism for financing infrastructure at the local level was introduced in 2004 in the form of the Local Government Capital Development Grant (LGCDG), which has now become the Local Government Development Grant (LGDG) System (Government of Tanzania, 2016). However, central government strongly influences how these

transfers are spent resulting in the alignment of nearly all LGA plans with central government spending priorities (Fjeldstad et al., 2010; Tidemand and Msami, 2010). Moreover, central government often issues directives to LGAs that have significant expenditure implications for the approved budgets. A massive drive to provide primary and secondary schools desks and a previous directive on construction of laboratories in all secondary schools are recent examples. In addition to this development funding, LGAs receive intergovernmental transfers for recurrent and concurrent costs, of which the bulk is for concurrent expenditure managed by central government. Intergovernmental transfers for local recurrent costs are mostly spent on staff salaries, over which LGAs also have little control because the number of staff recruited locally and their salaries are largely decided by central government (Venugopal and Yilmaz, 2010). Consequently local government has limited power to direct its budget towards locally determined development planning priorities.

LGAs also have little control over their tax rates, the ceiling for which is set by central government, and any changes to LGA taxes require the approval of the PORALG (Venugopal and Yilmaz, 2010). The central government agency, the Tanzania Revenue Authority (TRA) is charged with collecting simple local taxes, such as taxes on large businesses and hotels, while LGAs are responsible for more time intensive revenue collection, such as business licencing (Kombe and Namangaya, 2016). LGAs may lack up-to-date databases to collect such taxes, and these are also politically unpopular taxes to impose. Moreover, LGAs have limited power to enforce local taxation. As a study by Braathen et al. (2005) reports, 51% of people interviewed in Tanzania towns and cities thought that people should refuse to pay taxes until services improve. The Local Government Finance Act does allow LGAs to impose fines for non-compliance but pursuing this can be a lengthy process (Venugopal and Yilmaz, 2010). A recent programme (the Support to Local Governance Programme- SULGO), co-funded by the Government of Tanzania and Deutsche Gesellschaft für Internationale Zusammenarbeit (the German Development Agency-GIZ), supported the technical capacity of local governments to collect property tax and so widened urban authorities' tax bases (Masaki, 2015). However, the responsibility to collect property tax has recently been transferred to the TRA. It is not yet known how this will be redistributed and given that property tax is often a large proportion of local revenues, this could have a significant impact on local government budgets. Considering the limited local power to allocate intergovernmental transfers towards locally defined needs, expanding forms of revenue available at the local level could be important to funding improvements in services which are not prioritised at the central level.

National government approach to urban sanitation

At the national level, wastewater management and wider sanitation services are not prioritised in budget or policy. Budget allocations to solid waste management are much greater than allocations to wastewater management, and sanitation is not very visible in the national budget. Policy on sanitation is also limited. A central government policy on sanitation was begun in 2005 but this is still in draft form and responsibilities for sanitation across government departments have not been clearly defined since legislative changes in 2009. Consequently, there is some confusion over the sanitation responsibilities of different departments. Most of the responsibility for sanitation rests with the MoWI but the EWURA and the MoHCDGEC also have roles to play, which has led to institutional disagreements.

The lack of funding and clear policy around sanitation services is primarily due to neither central nor local government perceiving sanitation as a priority. The sector lacks political appeal because there is little demand from the general public for improved sanitation. In addition, the MoWI assumes that the urban water and sanitation authorities can provide sanitation services on a cost-recovery basis, cross-subsidising sanitation services with revenue from water services. This means that central government does not provide substantial grant funding to expand urban sanitation services.

National government priorities strongly influence local development and these are channelled to local governments through the PORALG. In line with national government plans, the PORALG priorities include education, infrastructure, health, energy and the urban sector. Investment in infrastructure in urban areas aims to support employment creation and revenue generation. Most of this infrastructure is built using donor funds and local government is expected to be able to manage and resource the operation and maintenance costs. For example, the Tanzanian Strategic Cities Project is a World Bank funded scheme investing in urban infrastructure, in particular roads.

Sanitation is not a national government priority but following a recent cholera outbreak, government interest in hygiene has increased. For example, the President has issued a directive designating every last Saturday of the month for public general cleansing. It is telling, however, that this directive focuses on solid waste management, which is more visible than wastewater management, but not as important for preventing cholera.

The National Sanitation Campaign

One government scheme which is focused on sanitation, however, is the NSC. This was initiated in 2012, is funded primarily by donors, and led by the MoHGECE in collaboration with Ministry of Education and Vocational

Training, Water and Irrigation, and the PORALG. The campaign is focused on sanitation in schools and in households in rural areas. Community leaders worked with health, education and community development officers at the local level to develop a sanitation profile of their community. Households in the community then collectively commit to improving their own sanitation facilities.

The experience of the NSC is particularly interesting for two reasons. Firstly, it shows that national government, with support from donors, takes a more proactive role in improving rural households' access to sanitation. In contrast, in urban areas households are not given any support to build latrines and the focus is only wastewater collection and treatment despite there being many households without access to an improved latrine. Secondly, as more households have flush or pour latrines and the volume of wastewater increases, local government has to address the later stages of the sanitation chain as well. This highlights the need for government to address the whole sanitation chain and view it as a system which needs integrating with wider urban or rural development plans.

Sanitation transfer to urban water supply and sanitation authorities

Government responsibility for sanitation in urban areas is currently being transferred from urban municipal governments to UWSAs. This is meant to delineate responsibility for these services and relieve local governments of what is perceived to be a technical urban development task. LGA directors in urban areas will no longer have planning control over water and sanitation infrastructure in their city as the UWSAs are controlled centrally by the MoWI and EWURA.

When these water authorities are established, they usually cover up to 90% of the urban areas. However, due to the increase of peri-urban populations (urban sprawl), most are currently only covering of 40-60% of the total urban population. As a result, urban councils are still responsible for the provision of water and sanitation services in areas not covered by the UWSAs. Unlike local authorities, however, the UWSAs operate on a business approach to services delivery and are not democratically accountable to the local population.

There has been a long-standing bias within the MoWI of allocating resources to water supply projects at the expense of wastewater infrastructure. This may be due to

many factors, including: the high cost of infrastructure for wastewater management, the bias among engineers towards water engineering with little or no training on wastewater engineering, and a focus on the quantity not quality of the public water that is supplied.

In order to improve management of sanitation and improve hygienic standards, MoWI now requires every water supply project to have a wastewater and faecal waste management project included alongside it. More investment is being put into the construction of dry beds and oxidation ponds and the acquisition of vacuum emptying trucks. Noticeably, however, this only addresses the latter part of the sanitation chain and so urban households which do not have a latrine connected to a septic tank or sewerage pipe will not benefit from these investments.

In urban areas, only a few NGOs such as the Centre for Community Initiatives (CCI) and WaterAid are supporting household sanitation, on-site wastewater treatment in informal settlements, and latrine subsidisation. CCI, for example, champions micro-financing to households to improve their latrine, giving out loans and working with communities.

Overall, sanitation in urban areas receives very little government attention. Low political interest in sanitation services or services to informal urban settlements, and high public demand for investment in more visible urban infrastructure, such as roads and schools has pushed sanitation to the bottom of the list.

Sanitation at the city level

Urban sanitation provision across Tanzania continues to be a serious public health problem. In urban areas, the proportion of residents using traditional pit latrines is high, at 50% in Dar es Salaam, 54% in Arusha, and between 36% and 44% in other cities (CPCS, 2015). Sewerage is very limited in Tanzanian cities and so nearly all sanitation facilities are on-site. On-site sanitation requires systems for wastewater collection, treatment and disposal but shallow pit latrines are liable to overflow and the contents of septic tanks are often emptied into storm water drains likely polluting underground water sources (CPCS, 2015; Government of Tanzania, 2016). The accompanying two case studies, published separately to this main report, explore in detail the factors underlying these problems in the cities of Mwanza and Arusha.

Annex B: Methodology

This research set out to ask how the challenge of universal sanitation in secondary cities today compares to the historical challenges which were overcome in the development of sanitation systems in the UK, South Korea, and South Africa. To do this, we undertook several desk reviews and conducted two case studies in the Tanzanian cities of Arusha and Mwanza.

The first stage of the research process was a desk review of the literature on sanitation systems in developing urban areas. The findings from this literature review narrowed the focus of our research question and enabled the development of the case studies. Using data from cities across the world, the two case study cities were selected as examples of rapidly growing cities in a country with a high rate of urbanisation, but which also had high numbers of urban households without improved sanitation. From the literature review, we developed a framework with which to analyse the situation in Tanzanian cities. This was centred on the financial and political constraints preventing universal access to the whole sanitation chain.

The initial research questions were:

- How can faecal sludge management (FSM) in secondary cities be regulated and financed effectively?
 - What public financing sources are available to invest in FSM and how can this be incentivised?
 - What are the incentives for improving public regulation of FSM services?

The two case studies were conducted by three researchers with complementary experience in Tanzanian local government, water and sanitation service delivery, and political economy analysis. In each city, key informant interviews were held with officials from across the four local governments (Arusha District Council, Arusha City Council, Mwanza City Council, Ilmela District Council), the two urban water and sanitation authorities (MWAUWASA and AUWASA), households living in informal settlements, private on-site sanitation providers, Federation of the Urban Poor, UN-Habitat, the city mayors, and an urban planning consultancy working in both cities.

Interviews were also held with national government officials from the National Environment Management Council, the President's Office for Regional Administration and Local Government (PORALG), Tanzania Strategic Cities Programme, National Sanitation Campaign, Energy and Water Utility Regulatory Authority (EWURA),

Ministry of Water and Irrigation (MoWI), as well as with an MP and staff from WaterAid and the Centre for Community Initiatives (CCI). Copies of government documents from the two cities were also obtained, including local government budgets and plans, Urban Water and Sanitation Authorities' (UWSA) budgets and plans and information on water-borne disease outbreaks.

The case study data was analysed against the following set of questions:

1. How is faecal sludge managed in the city? (roles, practices, functions, costs, coverage, tariffs, challenges)?
2. Who influences how FSM is managed at the city level (relating to plans, funding and policy)?
3. What importance is given to FSM (relating to funding and population coverage) compared to other government activities?
4. Who is considered responsible for the different stages of the faecal waste management chain?
5. What factors are preventing the safe disposal of all faecal waste in the city area?
6. Are there emerging areas of improvement relating to FSM? What is driving this? What limits this?

A second literature review was conducted to compare the situation in the case study cities with sanitation progress in more recently developed cities as well as historically in the UK, South Korea and South Africa. The findings from the literature review together with the case study findings revealed the importance of improving urban household sanitation in the informal settlements. Drawing on these findings, the research questions were amended to ask:

1. How can the whole sanitation chain be governed and financed effectively so that it is accessible to all inhabitants in secondary cities?
2. Where are the most common and urgent gaps in an urban sanitation chain?
3. What are the political constraints and opportunities to improving urban sanitation?
4. What are the financial constraints and opportunities to improving urban sanitation?
5. What are the common factors driving progress in universal urban sanitation?
6. What can be learnt from Tanzania for improving sanitation outcomes in Tanzanian cities and other developing cities?

The interview notes and data, and the literature review material were analysed against this set of questions to produce this report. A policy brief published in 2017 accompanies the report. See <https://www.odi.org/> for more details.



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