Chapter 9
The Intricacy of Water and Sanitation Management in Masvingo City, Zimbabwe

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Abstract Effective water supply and sanitation management remains an uphill task in most cities in the South, especially in Zimbabwe. Using a qualitative methodology, this chapter explores the different strategies for improving the water supply and sanitation management system in Masvingo City. Data were collected from water and sanitation experts directly and indirectly involved in water and sanitation issues at city and district levels. Data analysis was carried out through thematic and content analyses. The study found that the management of water supply and sanitation in Masvingo City is increasingly threatened by institutional weaknesses, unfavourable water governance structures, and financial instability. The operational water and sanitation coordination framework in Zimbabwe is creating confusion, tensions, and overlaps in the water and sanitation sector, especially at the district level. The separation of urban and rural water and sanitation management is a weakness that sets up water and sanitation institutions for failure. The study proposes several strategies that can improve water supply and sanitation management: the amalgamation of rural and urban water supply and sanitation governance structures; the promotion of inclusivity, concerted efforts, and shared responsibility among water and sanitation stakeholders; and the promotion of 'resident patriotism' as a way of improving the city's revenue base.

Keywords Inclusivity · Institutional resilience · Sanitation · Water finance · Water governance

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9.1 Introduction

The quest to improve water supply and sanitation has become a global concern as the number of people who lack access to safe managed drinking water and sanitation services is approximately 2 billion and 3.6 billion, respectively (World Health Organization (WHO) and the United Nations Children's Fund (UNICEF) 2021). Unsustainable water use and management patterns, high levels of pollution, and inadequate water infrastructure are some of the factors that aggravate water scarcity in terms of quantity and quality (Cooley et al. 2014). Due to this, the lack of access to water, sanitation, and hygiene (WASH) at the global level is associated with approximately two million annual deaths (World Health Organization (WHO) 2019).

Although the global population that lacks access to basic drinking water services decreased from 1.123 billion to 771 million between 2000 and 2020, sub-Saharan Africa (SSA) experienced an increase from 350 to 387 million people in the same period (WHO and UNICEF 2021). Consequently, SSA accounts for 53% of the global WASH-attributable deaths (WHO 2019). The lack of improved sanitation is the main source of contamination as faecal matter from open defecation usually finds its way into surface water bodies, the widely used source of drinking water in low-income countries (Johnston et al. 2011). In Zimbabwe, water supply and sanitation standards are still low, and coverage is higher in urban than rural areas (Bayu et al. 2020; Nhapi 2015). The management of water and sanitation is governed by a national water and sanitation coordination framework, shown in Fig. 9.1.

The central institution in this framework is the National Action Committee (NAC), which coordinates all water and sanitation issues in rural and urban areas (Nhapi 2015). However, most cities in Zimbabwe have a history of acute water shortages and poor sanitation, especially Harare, Bulawayo, and Chitungwiza (Gambe 2013a, b, 2015a, 2019; Musemwa 2010; Nel and Berry 1992; Nhapi 2009; Zvobgo and Do 2020). Poor water governance is the common challenge behind water woes. The lack of adequate coordination of water utilities has affected water supply and sanitation (Nhapi 2015). The water crisis in most urban centres is the result of political interference in municipal water and sanitation governance decisions (Musemwa 2010).

Masvingo is one of the districts in Masvingo province and is made up of Masvingo City (Fig. 9.2), Masvingo Rural, Mashava, and Renco Mines (Musingafi et al. 2015). Masvingo City has an estimated population of 87,886 people (Zimbabwe Statistical Agency (ZIMSTAT) 2013). Although Masvingo City Council (MCC) manages water and sanitation in the city area, Masvingo Rural District Council (MRDC) has responsibility for the areas outside of the city boundaries (Musingafi et al. 2015). However, the suburb of Victoria Ranch, in terms of legal boundaries, is under MRDC, but the water and sanitation issues of the suburb are co-managed with MCC.

This chapter explores the strategy options for enhancing the water supply and sanitation management systems in Masvingo City. The specific research questions are (i) What is the current state of water and sanitation provision in Masvingo City? (ii) How does the relationship of MCC, its development partners, and government institutions at the district level influence water supply and sanitation management

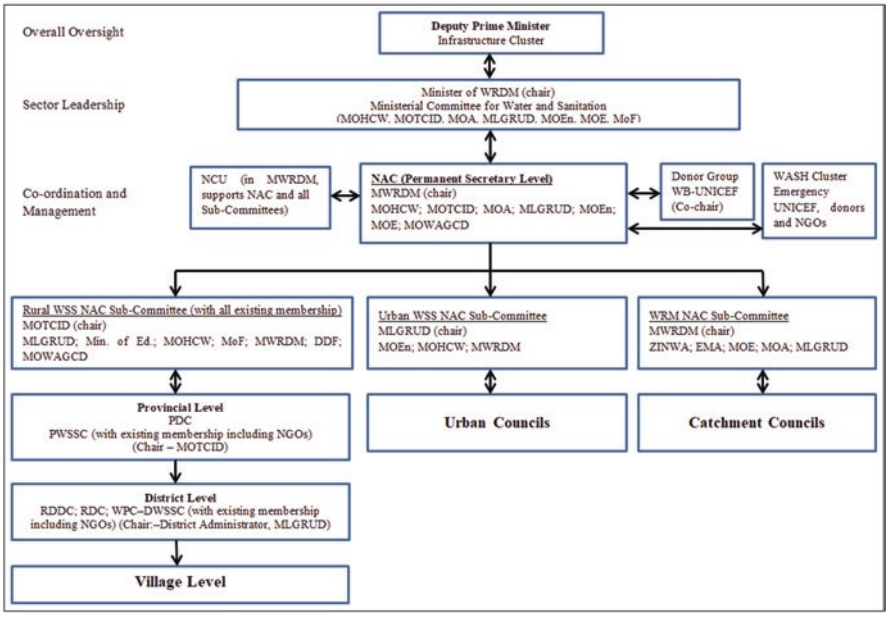

Fig. 9.1 Water and sanitation coordination framework in Zimbabwe. (Adapted from the Ministry of Water Resources Development and Management (MWRDM) 2010)

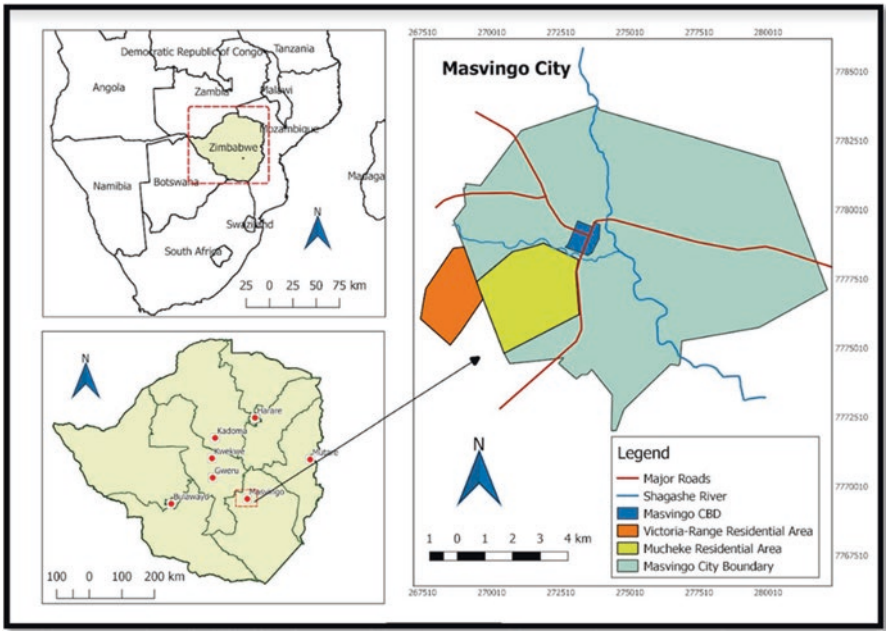

Fig. 9.2 The study area. (Source: Created by authors 2022)

in the city? (iii) What are the strategy options available to address the weaknesses of the institutions involved in water supply and sanitation management in Masvingo City?

To address the stated research questions, this chapter adopts a qualitative methodology and draws from the experiences of water and sanitation experts involved in the management of water and sanitation in Masvingo City. This article recognises that effective water and sanitation management practices, institutional resilience, and reliable financing mechanisms are key factors that can improve access to water and sanitation services in countries in the South. To promote a common understanding, the chapter proceeds by briefly reviewing the literature on water governance, institutional resilience, and water and sanitation financing. The governance-resilience-financing nexus needs to be enhanced as a way of improving water and sanitation management in Masvingo.

9.2 Conceptualising Water and Sanitation Development

9.2.1 Water Governance

Despite various and often contesting conceptualisations of governance, there is a consensus that governance is broader and more inclusive than government as it includes both state and non-state actors (Akhmouch and Correia 2016; Araral and Wang 2013; Castro 2007; Cleaver and Hamada 2010; Hill 2013; Rogers and Hall 2003). Since water is central to social and economic development, its sustainable use must be guided by adequate and inclusive policies (Akhmouch and Correia 2016). Resilient institutions or structures are required to balance varied and competing interests in the provision and management of water and sanitation services. Water governance can be defined as 'the range of political, social, economic and administrative systems that are put in place to regulate the development and management of water resources and the provision of water services at different levels of society' (Global Water Partnership 2002, p. 14). Therefore, the formulation and implementation of water and sanitation policies require the participation of different actors in society that range from civil society, politics, government at all levels, and the private sector (Akhmouch and Correia 2016; Jiménez et al. 2020).

Governance can be classified as either good or poor, although the distinction is usually normative (Akhmouch and Correia 2016; Franks and Cleaver 2007; Hill 2013; Rogers and Hall 2003). Governance is classified as good if fairness and inclusion constitute the core of the process of achieving results in a society (Akhmouch and Correia 2016). The main dimensions of good governance include effectiveness, inclusiveness, efficiency, accountability, participation, transparency, predictability, responsiveness, and trust and engagement (Rogers and Hall 2003). Poor governance, which is common in poor countries in the South, is associated with the failure to fulfil these dimensions (Araral and Wang 2013) and generates superfluous bureaucratic systems that fail to address the needs of citizens (Akhmouch and Correia 2016).

The concept of water governance involves the design of socially acceptable policies and institutional frameworks and how these are supported through the mobilisation of social resources (Rogers and Hall 2003). This has important implications for institutional resilience in two ways. First, the design of institutions determines whether they remain relevant over a period of time. Second, institutions must be socially acceptable and supported by different stakeholders at various levels if they are to continue to meet their mandate. We adopt these two perspectives in the analysis of the water supply and sanitation institutions in Masvingo City.

9.2.1.1 Institutional Resilience

The concept of resilience is broad and widely debated in the literature (Breathnach et al. 2014; Martin 2012; Martin et al. 2015; Saikia et al. 2022; Simmie 2014; Simmie and Martin 2010; Sjöstedt 2015; Tóth 2015). Notwithstanding its wide application in various disciplines, the notion has its origins in the ecological discipline (Martin 2012; Sjöstedt 2015; Tóth 2015). A derivative of the Latin word *resiliere*, resilience in simple terms means to leap back or rebound (Martin 2012; Simmie and Martin 2010; Tóth 2015). Of all the different perspectives resilience can take, including engineering and ecological, this study adopts the adaptive evolution approach (Wink 2012). This approach is derived from the theory of complex adaptive systems and stresses the capacity of a system or institution to reconfigure and adapt its structure to overcome different shocks and stresses (Martin 2012; Simmie 2014).

Two perspectives adopted under evolutionary resilience are generalised Darwinism and path dependence. The former has an emphasis on diversity being the linchpin of resilience, while the latter links resilience to the development and history of a system or an institution (Simmie and Martin 2010). In light of these two perspectives, institutions with a diverse structure have better chances of adapting to different types of transformations. Similarly, institutional trajectories influence institutional resilience. The way an institution is formed and envisioned determines a certain path in which the institution will evolve (Sjöstedt 2015). Therefore, the development and history of an institution can have lock-in effects that result in its growth or decline (Simmie and Martin 2010).

Institutional resilience can be defined as the ability of institutions to adapt to both endogenous and exogenous changes and to continue to effectively fulfil their functions over a period of time (Aligica and Tarko 2014; Barin Cruz et al. 2016; Steinberg 2009; Young 2010). For the purposes of clarity, we perceive institutions as 'synonymous with formal bodies and organisations (e.g., national ministries, sub-national agencies, multi-stakeholder management institutions, and planning departments; and the policies, plans, and other actions carried out by those organizations)' (Hill 2013, p. 18). In the context of this study, we therefore define institutional resilience as the ability of water supply and sanitation management institutions (such as local authorities, government institutions/committees, non-governmental organisations (NGOs), and water point committees) to continually provide affordable water and

sanitation solutions to communities within their areas of jurisdiction. Institutions should at the minimum be able to provide water and sanitation services that meet the minimum acceptable quantity and quality standards. Institutional resilience therefore borders on the ability to create institutions that are able, over the long term, to continually and effectively address the challenges faced by society (Steinberg 2009). This means that institutional design is an important aspect of institutional resilience (Barin Cruz et al. 2016).

Although resilience has become a catchword, its application in practice has been limited (Butler et al. 2016; Saikia et al. 2022). Operationalising resilience is difficult, and this emanates from a lack of a commonly agreed definition and approach to its analysis (Butler et al.; Johannessen and Wamsler 2017; Laitinen et al. 2020; Sensier et al. 2016). Notwithstanding the difficulties mentioned above, we adopted a practical approach that analyses institutional resilience by evaluating diversity in the composition of institutions, the nature of their design/creation, and whether institutions are continuously fulfilling the purpose for which they were created. This is important because institutions must be resilient to be able to provide an uninterrupted supply of water and sanitation services (Laitinen et al. 2020). The shocks threatening institutions include political interference, an acute decline in municipal revenue, and an unprecedented rate of urbanisation. These shocks impede the ability of water and sanitation institutions to offer water and sanitation solutions adequately and continually to residents within their areas of jurisdiction.

Most studies that adopt the notion of resilience in urban water supply and sanitation are more inclined towards the resilience of urban water systems or urban water services (Butler et al. 2016; Johannessen and Wamsler 2017; Laitinen et al. 2020; Saikia et al. 2022), although others cover both the governance and urban water system perspectives (Saikia et al. 2022). Owing to this, various frameworks (Saikia et al. 2022), approaches (Butler et al. 2016), and key principles (Johannessen and Wamsler 2017) have been propounded to improve water resilience, the ability of both stakeholders and water systems to adapt to different types of shocks and stresses (Saikia et al. 2022). Our study departs from those previously highlighted: it is not inclined towards urban water systems but on the resilience of institutions/stakeholders that operate in the water and sanitation sector. This focus is motivated by the fact that even where water resources are available in abundance, water scarcity persists in cities in the SSA due to weak institutions, poor governance systems, and inadequate financial resources. Thus, improving the governance-resilience-finance nexus can improve water supply and sanitation services.

9.2.2 Water Supply and Sanitation Financing

From global to community level, funding in the water supply and sanitation sector is limited (Cooley et al. 2014). However, large investments are required in the renewal and upgrading of the water and sanitation infrastructure (Romano and Akhmouch 2019). The investments required range from the protection of freshwater resources to the adequate provision and maintenance of water and sanitation

infrastructure (Organisation for Economic Co-operation and Development (OECD) 2011). The low revenue collection efficiency characterising cities in low-income countries has a negative implication on the management of water supply and sanitation (Romano & Akhmouch). This affects the progress towards achieving SDG 6, which seeks to ensure the availability and sustainable management of water and sanitation for all. In addition to inadequate financing, the achievement of SDG 6 also faces challenges that include the increase in the world population and the growing scarcity of water originating from climate change (Alaerts 2019). This calls for an inclusive dialogue at all levels of water and sanitation management that involves different types of stakeholders (Alaerts 2019).

The financial resources required to meet national water and sanitation targets are scarce in African countries (UN-Water Global Analysis and Assessment of Sanitation and Drinking Water (GLAAS) 2017). The main sources of finance are households (tariffs and self-supply solutions), government (mainly taxes), external sources (aid and grants), and repayable finance (mainly loans) (GLAAS 2017; OECD 2011). There have been growing calls for the private sector to participate in water and sanitation provision (Alaerts 2019; Johnston et al. 2011). However, the main challenge is the weak creditworthiness of water authorities, which increases the risk that the lender fails to recover capital (Alaerts 2019). Furthermore, water is treated as a right in some African countries, including Zimbabwe and South Africa (see Gambe 2015b; Morinville and Rodina 2013; Ziganshina 2008), and its 'commercialisation' is not widely supported. This discourages the active participation of the private sector in the provision of water supply and sanitation.

The financial resources available for urban and rural sanitation programmes in Zimbabwe constitute less than 50% of what is required (GLAAS 2017). In 2016, approximately 30% of WASH funding was sourced from the government, with the remaining 70% provided by external investors in the form of aid and grants (GLAAS 2017). This is a serious weakness in terms of resilience thinking because, if the central government fails to provide financial resources and external funders withdraw from WASH activities, then local authorities struggle to manage the situation. Diverse sources of funding are encouraged in resilience thinking so that if one dries up, others will cover the gap, and thus the situation becomes manageable. The overreliance on the central government and external funders without giving enough room for the private sector's participation in the water and sanitation sector (Chigonda and Chazireni 2018) is one of the anomalies that need to be rectified.

9.3 Methodology

In this study, we adopted a qualitative methodology that involves the combined use of a workshop and in-depth interviews as data collection tools. Workshops are increasingly regarded as a promising tool for data collection (Ahmed and Asraf 2018; Ørngreen and Levinsen 2017). Participants in a workshop, usually selected by purposive sampling, can share rich data that can be useful in a study (Ahmed and Asraf 2018). Therefore, this chapter draws on the discussions that occurred during

a water and sanitation reflection workshop held in Masvingo City in October 2020. The workshop was organised and hosted by three organisations: Dialogue on Shelter for the Homeless Trust (DoS), Masvingo City Council (MCC), and the Zimbabwe Homeless People's Federation (ZIHOPFE). One of the researchers played an important role in organising the workshop. The focus of the workshop was to create a platform where different stakeholders come together to discuss water supply and sanitation challenges in Masvingo City and how they could be addressed.

Purposive sampling was used to select participants for the workshop. The targeted participants were institutions that are directly or indirectly involved in the management of water supply and sanitation in Masvingo City. MCC is the main institution responsible for water supply and sanitation services in the city. However, it operates in conjunction with partners at the community, city, and district levels. Consequently, 11 institutions were selected: DoS; MCC; ZIHOPFE; Masvingo ward councillors; District Water and Sanitation Sub-Committee (DWSSC); Young People's Federation (YPF); District Development Fund (DDF); Ministry of Women Affairs, Community, Small and Medium Enterprises (MWACSMED); Agricultural Technical and Extension Services (AGRITEX); Christian Care Zimbabwe (CCZ); and Great Zimbabwe University (GZU). Each organisation was asked to send experts in water and sanitation issues to the workshop. As a result, a total of 43 participants attended the workshop (see Appendix for the detailed list).

To maintain the overall control of workshop proceedings, one of the researchers was the main facilitator, while the other was not only a part of the organising team but also a participant. Therefore, we both acted as participant observers throughout the workshop and had the opportunity to probe in circumstances where participants provided inadequate data or incomplete responses. The workshop facilitation and participation arrangement gave us some control over the issues discussed. We had an opportunity to persistently observe the participants and assess the credibility of their contributions. Participants were advised beforehand that the workshop was to be recorded in video and audio. Consent was therefore acquired verbally. Two organisations among the co-hosts (DoS and MCC) were responsible for video recording and taking minutes, while the facilitator handled audio recording. A comparison of recorded materials and minutes from three different sources improved the comparability and credibility of the data that were collected.

We also conducted in-depth interviews with experts from institutions directly involved in water supply and sanitation issues in Masvingo City, which include MCC, DoS, CCZ, DWSSC, ZIHOPFE, and water point committee leaders, representing Garikai, Mucheke Hostels, Nemanwa unplanned settlement, and Victoria Ranch in Masvingo Rural. Since the interviews were conducted as a follow-up exercise, their purpose was to complement and verify the data collected during the workshop. This exercise gave us the opportunity to fill in data gaps and look for more data from experts in a different setting. We analysed the data using thematic and content analyses. Variables targeted in the analysis include political interference in the design and operation of water supply and sanitation institutions, the diversity of stakeholders in the institutions, and continuity in the delivery of water and sanitation solutions to communities. Politics was regarded as one of the variables because

it plays a major role in institutional design and ultimately in institutional resilience (Sjöstedt 2015; Steinberg 2009). This guided our analysis as the design of resilient institutions should involve making them receptive to contributions from different political views and actors. If institutions are dominated by a single political party, their resilience becomes vulnerable, especially in circumstances that involve regular changes in political leadership (Steinberg 2009).

In our analysis, we also treated diversity as one of the key factors that influence institutional resilience. Water and sanitation institutions should include actors from multiple governance levels, that is, from national, provincial, district, city, and even community levels (Steinberg 2009). This promotes inclusivity in the water and sanitation sector. Therefore, enhancing the resilience of an institution requires sustaining its mission and maintaining an arrangement that enables continuity in terms of function and the fulfilment of the goal.

9.4 Findings

The study found that Masvingo City has a daily water demand of approximately 45 megalitres despite its capacity to pump 27 megalitres. To supplement the water supply in the city, 39 functional boreholes were installed that use the lift pump system. However, MCC indicated that lift pumps are not very efficient because their water discharge is not directly proportional to the amount of energy required to pump the water. This has motivated the need to replace lift-pump systems with those that are solar powered. The provision of sanitation in Masvingo City is mainly through a reticulated sewerage system; however, there are a few areas that are not yet connected. These areas are currently using ecological sanitation (eco-san) toilets whose construction and maintenance are managed by the MCC building inspectorate.

The management of water and sanitation in Masvingo has benefitted from the concerted efforts of MCC, its development partners, and local communities. This partnership is responsible for the co-production of water and sanitation data through community- and city-wide level profiling. The partnership has also created a platform to share ideas and proposals for water and sanitation development without restrictions. This development eased a tight and bitter relationship that existed previously between MCC and the communities studied. The improved relationship became a critical tool in mobilising project partners around targeted water supply and sanitation interventions that include the construction of the Garikai Market pay toilet, the upgrading of Mucheke hostels, and the establishment of the Masvingo City Fund.

The study revealed that the provision of water and sanitation services in peri-urban settlements is still a tall order for both MCC and its neighbouring local authorities. An example is Victoria Ranch, a low-income settlement within the geographical boundaries of MRDC that was developed primarily through self-help housing schemes. Victoria Ranch is therefore not connected to water and sewerage reticulation systems. Consequently, water and sanitation are provided through

communal boreholes and eco-san toilets. This is almost the same scenario in the Garikai and Nemanwa communities, although they do not have eco-san toilets. The sanitation situation in these two communities is dire as open defecation is widespread.

Water point committees (WPCs) are actively involved in controlling and managing various communal water points in the city. The leaders of the four WPCs that operate in settlements experiencing acute water and sanitation shortages (Victoria Ranch, Mucheke Hostels, Garikai, and Nemanwa) indicated that they are responsible for ensuring that residents access water and sanitation facilities in an orderly manner. They also supervise how residents use water and sanitation facilities to avoid infrastructure vandalism. One WPC member indicated:

> To avoid the vandalism of communal water infrastructure, we lock our water points and access is prohibited during the periods we experience scheduled water supply disconnections. Members only regain access when water supplies are restored.

It was also found that minor maintenance and repair works are coordinated by the WPCs by mobilising residents to contribute towards such work. Only major repairs are reported to and addressed by MCC.

In addition to working with WPCs in different suburbs, this study found that MCC also works with NGOs such as DoS, CCZ, and ZIHOPFE to improve water supply and sanitation. The partnership agreement between MCC, DoS, and ZIHOPFE has implemented a variety of water and sanitation projects in the city. MCC had this to say:

> With the assistance of our development partners, we managed to construct the Garikai Market pay toilet, upgrade Mucheke Hostels (two blocks occupied by approximately 30 households) and renovate two residential blocks at Mucheke Hostels. Organisations such as CCZ made a financial contribution towards the purchase of sewer de-blocking equipment, donated a water-testing kit, contributed towards the rehabilitation of public toilets, conducted capacity building trainings targeting WPCs, and donated items such as water containers in a bid to promote community hygiene.

To improve water supply and sanitation financing, MCC made a commitment to contribute funds in each annual budget to the improvement of the water and sanitation infrastructure in the city. Although MCC has managed to honour this commitment, the funds are still below the amount required to construct, renovate, and maintain the water and sanitation infrastructure in the city.

At the district level, we found that MCC works in partnership with the District Water and Sanitation Sub Committee (DWSSC), although it is not mandatory to do so. The water and sanitation coordination framework in Zimbabwe (see Fig. 9.1) clearly shows that urban councils are supposed to report directly to the NAC Urban Water and Wastewater Subcommittee. However, this has created coordination challenges at the district level. As the chair of DWSSC, the District Administrator's Office (DA) noted:

> Development partners that wish to work on WASH issues in the district should first approach the DA's office and register their intention. The DWSSC will then advise the concerned local authority of the NGOs' intentions to work in its area of jurisdiction. This has not been happening and there is need to correct that. Over the years, we have been working mainly with MRDC and it's not surprising to notice that there may be a lot of development partners working in Masvingo Rural than Masvingo City.

These sentiments show the complexities associated with Zimbabwe's water and sanitation coordination framework. Development partners who intend to work in the WASH sector in Zimbabwe usually approach the National Action Committee (NAC). At this level, they are directed to work in certain provinces, depending on the need. The Provincial Water and Sanitation Sub-Committee (PWSSC) directs the development partners to the DWSSC, which is responsible for water and sanitation issues in districts. As the DWSSC is mainly mandated to work with rural district councils (RDCs), the development partners are therefore directed to work in areas managed by RDCs. This is how Masvingo City is excluded from WASH interventions that are introduced in Masvingo District through the Rural NAC channel. The development partners currently working in the city are those who approached MCC directly without following the NAC or DWSSC route.

The DWSSC is responsible for compiling district water and sanitation reports that are submitted to PWSSC for continued submission to NAC. However, reports in some cases do not adequately capture the record of WASH activities in Masvingo City and therefore do not show the true picture that prevails throughout the district. Despite this, Masvingo City's efforts to regularly participate in DWSSC activities have opened communication channels and created a positive working relationship. The participants unanimously noted that the separation of rural and urban councils in WASH issues is partly behind the challenges of water supply and sanitation experienced in peri-urban settlements such as Victoria Ranch. The suburb is legally under the jurisdiction of MRDC, yet MCC has been under immense political pressure to intervene and provide municipal services in the settlement. One of the MCC officials indicated:

> it is not easy for us to take full charge of water supply and sanitation development in Victoria Ranch without legally incorporating the settlement into the city's boundaries. This process has taken longer than is necessary.

We found that the incorporation process, if it is to happen, should receive a green light from the central government and the MRDC. However, the major drawback has been the lack of cooperation from land developers (behind the subdivision and selling of stands in the suburb) in terms of financial contribution towards the installation of water and sanitation infrastructure.

9.5 Discussion

The design and composition of WPCs, such as water and sanitation management institutions at the community level, are in line with resilience thinking. However, the main threat remains the ownership of water initiatives in communities. It has not yet dawned on some committee members that they need to take ownership and exercise full control of the water and sanitation infrastructure in their communities. In terms of their design, the WPCs were created to specifically control, secure, and maintain communal water points. The membership of these committees was drawn

from the beneficiaries of the communal water points involving both male and female members of different age groups. Thus, the issue of diversity was addressed. Furthermore, MCC, in collaboration with its development partners, conducted training sessions designed to capacitate the WPCs. In terms of their design and diversity, the WPCs as a water management institution at the community level were poised for success. Continuous capacity building and sensitisation are some of the ways that participants suggested to improve the resilience of WPCs. This is consistent with existing literature that highlights that investments in governance are necessary for the improvement of water and sanitation management systems (Zvobgo and Do 2020). Therefore, capacity-building programmes constitute an important investment in water supply and sanitation management.

Like other cities, the resilience of the Masvingo City Council (MCC) is threatened by political interference (Musemwa 2010; Nhapi 2009). The central government has been pressurising MCC to take over the mandate to provide and manage the water and sanitation infrastructure in Victoria Ranch, a suburb outside the city boundaries and created by land developers, the majority of whom are supporters of the ruling Zimbabwe African National Unity, Patriotic Front (ZANU PF). This is against a background that land developers are not forthcoming in handing over a part of their proceeds from the sale of land to MCC as a contribution towards servicing costs. Another threat is in the form of an Operation Restore Order (also known as Operation *Garikai/Hlalani Kuhle*) – which provided for parallel development in Zimbabwean cities and towns. This operation created urban settlements without reticulated water and sewerage facilities as the beneficiaries did not manage to contribute to the servicing of their settlements. In Masvingo, MCC has inherited the burden of addressing this anomaly. However, the MCC has managed to overcome these and other shocks by successfully instilling a sense of shared responsibility among different stakeholders in terms of the provision and management of water and sanitation. The concerted effort and unity of purpose created by the partnership of MCC, its development partners, and residents of the suburban areas studied improved the overall management role of MCC.

Diversity as a measure of institutional resilience is largely adhered to in Masvingo City. MCC has created a platform for the development of water and sanitation that allows willing stakeholders to participate and contribute in any way possible. However, it is mainly the NGOs (DoS, ZIHOPFE, CCZ, etc.) and the residents that have responded. To promote inclusive dialogue at all levels of water and sanitation management and involve different types of stakeholders (see Alaerts 2019), a Memorandum of Understanding (MOU) was signed involving MCC, DoS, and ZIHOPFE. The MOU encourages continuous dialogue between city management, residents, and development partners on possible ways to address the challenges of water and sanitation in Masvingo. The partnership arrangement has recently included Great Zimbabwe University (GZU), the largest tertiary institution in the city. An MOU involving GZU was drafted and is in the signing stage. Overall, city management has created a platform for all interested stakeholders to participate and help address water and sanitation challenges. However, the missing link is the active participation of the private sector, which in Zimbabwe is almost insignificant

(Chigonda and Chazireni 2018). The hesitancy of the private sector to join is influenced to some extent by the limited profit-making opportunities in the WASH sector (Alaerts 2019).

One of the major shocks faced by MCC in terms of the development of water and sanitation in the city is limited financing and/or financing mechanisms. Although the MCC has made a commitment to set aside some funds from its annual budget for the purposes of financing water and sanitation infrastructure, the funds fall short of what is required. Development partners such as DoS and CCZ have also contributed to the city's WASH interventions through the Masvingo City Fund, yet there is still a huge gap. Shortage of financing has stalled the city's water and sanitation development projects, especially the expansion of water and wastewater treatment plants, the completion of the main sewer trunk line, the drilling of new communal boreholes, and the installation of solar-powered pumps in some of the existing boreholes. These findings reinforce the claim that the financial resources available for urban and rural sanitation programmes in Zimbabwe constitute less than 50% of what is required (GLAAS 2017). Despite the various shocks explained in the above discussion, MCC exhibits some level of institutional resilience. The city has been able to continually deliver water and sanitation solutions to communities within its jurisdiction. While the level of water and sanitation supply might be below the expectations of the communities that participated in this study, the MCC has managed to maintain an above-average supply, which translates to an 'acceptable' level of access.

Some of the water and sanitation challenges experienced by MCC come mainly from institutional design issues at the district level. The Water and Sanitation Coordination Framework in Zimbabwe, which was established in 2010 during the era of a government of national unity (GNU – which expired in 2013), has outlived its useful life. The separation of rural and urban WASH activities in the framework contributes to the challenges in Masvingo City. A district in Zimbabwe is made up of rural and urban local authorities. Thus, separating the two in terms of water and sanitation management creates some coordination complexity as the DWSSC becomes an institution for the RDCs only. This leaves the MCC to make its own water and sanitation development arrangements that are independent of the DWSSC. Although being neighbouring local authorities, the framework does not encourage collaboration as Masvingo City is expected to work with the Urban NAC Subcommittee, and Masvingo Rural works with the Rural NAC Subcommittee (see Fig. 9.1). This arrangement fails to recognise that some water and sanitation challenges cut across the urban-rural divide, and thus urban and local authorities that share boundaries need to collaborate to address them. The case of Victoria Ranch exemplifies this. Although it is a growing low-income settlement within the jurisdiction of MRDC, the services required in the settlement are of an urban nature. Thus, this settlement can become liveable and productive if MCC and MRDC work together to provide the required services.

The separation of urban and rural WASH management creates tension, confusion, and overlaps among institutions working on WASH issues at the district level. The expectation of the chairperson of DWSSC that all partners working in the development of WASH in the Masvingo district must pass through and be registered

with the DA's office is not provided in the operational framework. Tension arises if, for example, MCC decides not to participate in DWSSC meetings. The DA's office as DWSSC's chair takes this as a defiance of the district's leadership structures. Perceived politically, the tension can even be worse. The DAs are political appointees that serve not only government interests but also the agenda of their political party, in most cases the ruling ZANU PF. Therefore, the failure of MCC (led by a mayor from the opposition party) to attend DWSSC meetings may be taken as a direct refusal of an opposition-led city to submit to the ruling party and the government – represented by the DA's office. This has repercussions for Masvingo City as government funding and support may be reduced. Political alienation of local authorities is common in Zimbabwe. This has happened in Bulawayo, the second-largest city in the country. In the post-independence era, the political rivalry between the Harare-based ZANU PF and the Bulawayo-based Zimbabwe African People's Union (ZAPU) caused the central government to limit water infrastructure financing and development projects in the second-largest city (Nel and Berry 1992). MCC has managed to overcome this potential shock by voluntarily participating in DWSSC meetings and activities.

The DWSSC has a membership that includes approximately 21 government departments. In addition, DWSSC works with different NGOs that are implementing projects in the district and that are introduced to the committee through Rural NAC and PWSSC. The private sector is still not very active in providing water and sanitation at the district level. However, the lack of participation of the private sector in water and sanitation is linked to one of the weaknesses of DWSSC as an institution. Its operations are entirely financed by the central government and development partners. This limits the role of DWSSC to mere facilitation as water and sanitation development projects are mainly implemented through the initiatives of DDF and various NGOs. This explains why more than 50% of Zimbabwe's WASH financing is sourced from external funders mainly in the form of aid and grants (GLAAS 2017).

The DWSSC membership is dominated by government departments, which, according to one of the participants, include 'security departments such as the president's office and the police'. This is a possible obstacle to the participation of the private sector and other stakeholders in the DWSSC. The president's office in Zimbabwe is linked to the dreaded Central Intelligence Office (CIO). The presence of the CIO in this committee is intimidating, especially for those with divergent political views. Yet the design of resilient institutions should involve making them receptive to contributions from different political views and actors (Steinberg 2009). This observation is related to the response given by one of the DWSSC members when participants suggested an amendment to the structure of the water and sanitation framework. The participant responded: '…as DWSSC members, we don't make or question policy but we implement policy'. The response implied that it is not the duty of DWSSC members to question or suggest amendments to the structure of the framework. The member expressly indicated that doing so is the duty of politicians. Yet this affects the resilience of government institutions as employees or members sometimes do not take it upon themselves to propose to government officials the changes required to improve institutional effectiveness and efficiency.

The result becomes poor governance as public institutions fail to respond to the needs of the citizens. The response by the DWSSC members shows unnecessary bureaucracy that takes away the power of committee members to suggest, to those in the higher echelons of power, structural adjustments that improve water supply and sanitation management.

9.6 Conclusions and Policy Recommendations

The management of water supply and sanitation in Masvingo City is increasingly threatened by institutional design issues and financial constraints. The operational water and sanitation coordination framework in Zimbabwe is creating confusion, tension, and overlaps in the water and sanitation sector, especially at the district level. The separation of urban and rural water and sanitation management is a weakness that sets up institutions, such as DWSSC, for failure. Separation discourages concerted efforts among stakeholders, which are expected to complement each other for the betterment of water and sanitation development. The case of Victoria Ranch provides enough motivation for the amalgamation of rural and urban WASH management. If implemented, it creates a platform for MCC and MRDC to partner in the provision and management of WASH facilities in Victoria Ranch. Additionally, MCC will be able to benefit from the DDF borehole drilling programme in the district. The distribution of WASH resources in the district becomes easier with MCC being a member of DWSSC. This avoids the overconcentration of resources in rural district councils at the expense of urban councils.

Political interference is a threat to water supply and sanitation management in Masvingo City. The insistence of the DA's office that MCC should be a part of DWSSC without any legal provision can be perceived as political coercion. Participation, in some cases, has no direct benefit to MCC but, instead, is a cost in terms of financial and time resources. The DWSSC is composed of numerous stakeholders, yet it is dominated by government departments that seem to scare off other stakeholders, such as the private sector. As a result, active participation of the private sector in WASH activities at the city and district levels is lacking. This leaves a gap in terms of financing the development of the water and sanitation infrastructure.

To improve the water and sanitation management system in Masvingo City, we propose four strategies that can stimulate positive change. First, the Rural and Urban Water Supply and Sanitation NAC Sub-Committees should be amalgamated. A consolidated approach in the management of water supply and sanitation at the district level is more needed now than ever before, considering the proliferation of peri-urban settlements. These settlements are better managed under a partnership of urban and rural councils since the services required in such settlements are more urban in nature. This strategy can be achieved through lobbying. Water institutions at the district level can come together and lobby for positive changes in the water and sanitation framework.

Second, MCC should continue to promote inclusivity and concerted efforts among stakeholders in the water and sanitation sector of the city. Already, the city has benefitted from this strategy through grants sourced from NGOs to address water supply and sanitation issues. However, more institutions operating in Masvingo can be involved. There is an opportunity for greater integration with higher education institutions. The MOU (involving MCC, DoS, and GZU) that is currently under consideration is the first step towards this integration. Other institutions that can be included are Reformed Church University and Masvingo Polytechnic. MCC can benefit from the innovations in water and sanitation produced by these institutions, especially during this time when all tertiary institutions in Zimbabwe are mandated to focus on innovation and industrialisation as their core business. Tertiary institutions have the opportunity to apply for research grants that focus on addressing water and sanitation issues in Masvingo City. However, this needs an all-stakeholder platform where these opportunities are discussed and agreed upon.

Linked to the second one, the third strategy emphasises shared responsibility among the water and sanitation stakeholders in Masvingo City. MCC has already started the initiative, although it can be broadened. MCC should expand its drive to instil a sense of ownership among stakeholders. The sense of ownership and shared responsibility makes stakeholders realise and play their role in water and sanitation management. Through WPCs, MCC has managed to create a working relationship with residents of the communities studied. Continuous engagement motivates residents to settle their water and other bills in time and in full to enable MCC to continue providing services. On the other hand, the tertiary institutions in the city should lead the search for new and affordable technologies that help MCC provide and manage water supply and sanitation effectively. Such technologies should consider the financially constraint nature of MCC. An example is the eco-san toilets in Victoria Ranch. This is a technology that enabled residents to stay in areas of the city without reticulated water and sewerage systems. Although MCC believes that eco-san toilets have outlived their tenure, it is important for tertiary institutions to advance research on ways to improve this technology. The hope is that the research culminates in an improved version that is cheaper to construct, allows residents to settle in areas that are not serviced, and is sensitive to the natural environment.

The fourth recommendation is to improve the city's revenue base. The current financing arrangement, which is dominated by government and donor agencies, threatens the resilience of MCC as the main water and sanitation institution. The withdrawal of donor agencies from the financing arrangement has a higher likelihood of crippling the development of water and sanitation in Masvingo City. Although partial privatisation of water and sanitation development can lure private sector finance in the WASH sector, MCC should first explore possible ways to improve revenue collection. Promoting 'resident patriotism' improves the resilience of the MCC through improved revenue collection. In simple terms, resident patriotism can be perceived as the desire and zeal of residents to support the growth and development of their city. Therefore, we recommend that MCC should identify and reach out to residents who have a history of settling their bills on time and create an

association that can be termed the 'Masvingo club of patriots'. Discounts and other incentives should be given to these patriots as a way of motivating them to settle their rates and other bills continuously and timely. This strategy can produce three outcomes: (i) increased loyalty of the members of this 'club', (ii) motivation among other residents who can pay their bills on time but are not taking it seriously, and (iii) a guaranteed level of income. In terms of operationalisation, this strategy might face resistance from those residents who do not value the timely settlement of municipal bills. However, this should not discourage MCC as continuous engagement with residents makes them understand their role in the management of water and sanitation. Opening different platforms for dialogue helps clear the misconceptions and wrong assumptions that residents may have in the management of water and sanitation.

Appendix: List of participants

Selected organization	Representatives	Total number
Masvingo City Council (MCC)	The Chamber Secretary Department (1) Housing & Community Development Department (2) The City Engineer's Department (3) The City Health Department (3) The Building Inspectorate Department (3)	12
Zimbabwe Homeless Peoples' Federation (ZIHOPFE)	Community leaders of various suburbs in Masvingo (6) ZIHOPFE Leaders from Harare, Bulawayo & Masvingo (8)	14
Young People's Federation (YPF)	Projects officers (2)	2
District Water and Sanitation Sub-Committee (DWSSC)	The District Administrator's Office (1) Committee member (1)	2
Christian Care Zimbabwe (CCZ)	Projects officer (1)	1
Great Zimbabwe University (GZU)	Facilitator (1)	1
District Development Fund (DDF)	Chairman (1)	1
Ministry of Women Affairs, Community, Small and Medium Enterprises (MWACSMED)	Officer (1)	1
Agricultural Technical and Extension Services (AGRITEX)	Officer (1)	1
Politicians	Masvingo ward councillors (3).	3
Dialogue on Shelter for the Homeless Trust (DoS)	Directors (2) Projects officers (3)	5
Total		**43**

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