



Essence of Water Governance for SMEs for Sustainable Consumption in Nairobi, Kenya

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Abstract

Water governance is mostly faced with multifaceted uncertainties owing to rapid demographic changes, urbanization and climate change. Building on recent studies on water governance in urban areas, this study aims to shed light on the importance of water governance for sustainable consumption and posterity for Small and Medium Enterprises (SMEs) in Nairobi County. The paper discusses current trends in water governance and proposes policy solutions based on the existing OECD framework. It also highlights the critical role water governance plays in enhancing business bottom lines through institutional arrangements and policy implementation. Inadequacies in water supply and water infrastructure are significant challenges affecting sustainable water utilization for SMEs in Nairobi. Despite concerted efforts for reforms in water governance provided by the Water Act 2016, there still exist multi-level governance gaps in this sector. Weak regulatory arrangements, over-institutionalization, overlapping roles, and lack of coordinated approaches are some of the challenges that need to be addressed. Unseen players in the water sector in Nairobi also exist to determine the outcomes of the market forces that affect SMEs in this sector. Addressing some of the challenges facing this sector can be achieved by adopting the OECD Principles on Water Governance. These principles may promote and design tangible and outcome-oriented public policies through the facets of effectiveness, efficiency, trust and engagement; and enable better design and implementation of water governance in Nairobi that will enhance sustainable water consumption among the SMEs.

Keywords: *Small and Medium Enterprises, Sustainable consumption, Water governance, Nairobi*

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Introduction

Water governance is an evolving concept whose growth has spurred in recent decades and further enhanced by the global climate changes affecting the water sector (Gupta *et al.*, 2013; Romano and Akhmouch, 2019). Governance also had growth in its definition in recognizing institutions' complexities in the implementation of policies that affect sustainable consumption and production (Romano and Akhmouch, 2019;

Tortajada, 2010). In its evolution water governance, the water sector on a global level has various stakeholders, interests and consensus on water science components and their impacts (Gupta *et al.*, 2013). Water is not just a global but a multi-level governance challenge requiring further study and research in increasing its efficiency and effectiveness in management. Reforming water policy requires an

understanding of existing complex institutional settings such as Small Medium Enterprises (SMEs) and how the two can complement each other ensuring governance of water is up scaled (Biswas and Tortajada, 2019; Tortajada, 2010).

SMEs serve a pivotal role in the economic development and creation of jobs in Kenya whose majority of the workforce lies in the youth category (Muriithi, 2017; World Bank, 2020a). Jobs created by SMEs in the Kenyan employment space spur more than 80%, thus underscoring their critical space in the country's GDP (Muriithi, 2017; Osano, 2019). SMEs are recognized in Kenya's constitution under the Micro and Small Enterprise Act of 2012, which outlines micro-enterprises with a maximum annual turnover of KES 500,000 and employ less than 10 people. Further, Small enterprises are described as having between KES 500,000 and 5 million annual turnover and employ 10-49 people. Medium enterprises are not covered under the act, but have a turnover of between KES 5 million and 800 million and employing 50-99 employees (KNBS, 2019).

Kenya's economic growth averaged 5.7%, placing Kenya one of the fastest-growing economies in East Africa by recent economic expansion boosted by a stable macroeconomic environment, positive investor confidence and a resilient services sector (ITC, 2019; Osano, 2019; World Bank, 2020a). Kenya's overall GDP growth is projected at 6.4% in 2017 with this positive growth projection based on several assumptions, including increased rainfall and enhanced agricultural production, continued low oil prices, and reforms in governance and justice sectors. Through this positive growth projections, the future of SMEs is enhanced therefore explicating the need to ensure water governance as prescribed by the OECD water governance principles which efficiency, effectiveness and trust and engagement (Adeyeye, 2016; Osano, 2019).

Water governance in SMEs becomes critical for sustainable consumption and posterity in the Kenyan economy when institutions and policies are well undertaken (Ribeiro and Johnsson, 2018; Romano and Akhmouch, 2019). Recent water sector policy reforms are geared to improve water

management, accessibility, and efficiency, thereby impacting sustainable consumption and production which in turn is in support of the water governance component of efficiency (Hassenforder and Barone, 2019; Leclert *et al.*, 2016).

SMEs in Kenya have a couple of challenges which include access to finance and the cost of doing business, high costs of water and energy and growing number of staff turnover. However, very little has been highlighted on water governance and its impacts on SMEs' posterity (Irungu and Arasa, 2016; ITC, 2019; Muriithi, 2017; Olagunju *et al.*, 2019). The gap on the impacts of water governance highlights potential pockets for SMEs to capitalize on and improve their bottom lines and create platforms for further wealth creation (Berkes *et al.*, 2001; King-Okumu *et al.*, 2018; Kombo *et al.*, 2014).

Nairobi county is noted for its business versatility and opportunities, SMEs will have a thriving angle when water issues are well tackled to improve consumption practices. Projections of cities population doubling by 2050 provides SMEs an opportunity to build on their posterity when they undertake the effectiveness component of the OECD water governance principles (Hassenforder and Barone, 2019; Kombo *et al.*, 2014; Mwihi, 2018).

In the recent past, water governance becomes a critical component in the day to day running in SMEs with an urgency focused on its impacts on sustainable consumption and production (Karar and Jacobs-Mata, 2016; Sinha *et al.*, 2019; World Bank, 2020). This paper's objective is to shed light on the importance of water governance for sustainable consumption and posterity for SMEs in Nairobi County and highlight the critical role water governance plays in enhancing business bottom lines through institutional arrangements and policy implementation.

Different studies have identified four inter-related dimensions of water governance; social, political, economic and environmental (Agarwal, 2000; Bressers and Kuks, 2013). The social dimension addresses equitable sharing of water resources necessitated by the uneven distribution of water in time and space and various socio-economic strata. The economic dimension focuses

on efficiency in the utilization of water resources and its role in economic growth. The political dimension emphasizes the need for stakeholders and citizens' political empowerment to influence and check political processes and outcomes in managing water resources. Further, the OECD water governance framework augments the need for SMEs to adopt this framework if they are to enhance water governance in the business setting. Thus, this paper explicates the essence of water governance critical in sustainable consumption and production by SMEs in Nairobi, Kenya.

Materials and Methods

Study Area

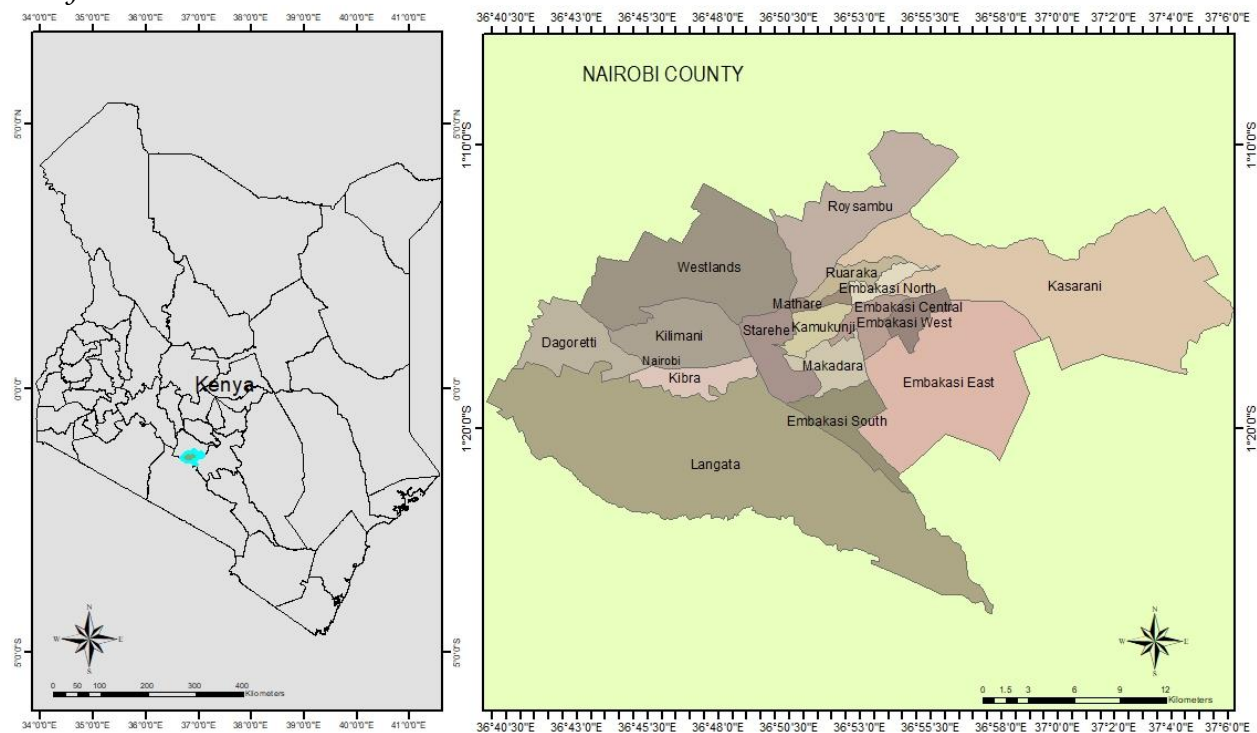


Figure 1: Location of Nairobi County in Kenya

Study Design

This study adopted an exploratory research design, employing both qualitative and quantitative methods. The study's scope was limited to Nairobi County; however, the findings can be applied up to the national level because MSMEs have similar characteristics across different geographical zones. Most of the data used were gathered from the review of existing literature. The data captured included the role played by SMEs, institutional bodies and organizations on water governance. This also

Nairobi County is one of the 47 Counties in the Republic of Kenya. It is the capital and the largest city of Kenya. Despite being one of the smallest counties in the country, Nairobi has approximately 4.4 million people (National Population and Housing Census, 2019). Nairobi has experienced some of the highest growth rates of any city in Africa. However, formal employment has remained low, thus forcing many residents into the informal sector illustrating the growth curve of SMEs taking on a variety of products and services. Nairobi experiences a subtropical highland climate with two rainy seasons in a year.

included information on policies, policy implementation, and institutional hierarchy and their importance in effective water governance for MSMEs. The study also explored opportunities, experience and challenges faced by MSMEs and governing Institutions in water governance. Desk research and review were also conducted to include lessons and best practices from countries with established water governance systems.

Characteristics of Small and Medium Enterprises

Most SMEs in Nairobi comprise a mixture of enterprises involved in activities mainly within the service sector, including communication and transport, wholesale and retail trade, manufacturing, construction, finance, real estate, personal services and insurance (KNBS, 2019). These comprise both formal and informal SMEs, with the majority of them operating informally. Typical characteristics of SMEs include but not limited to the following; their nature of the operation is small-scale in nature, use labor-intensive technologies, low-level skill requirements, require little initial capital, low organizational level, engage in unregulated and competitive markets, and have limited access to formal credits (Wairimu, 2015).

SMEs are considered a critical sector to economic growth because this sector generates employment, provides goods and services, complements large enterprises, enhances competition and innovation, drives industrialization and stimulates growth and development. An Economic Survey Report by the Central Bank of Kenya (2014) reported that SMEs comprise 98% of all businesses in Kenya, creating 30% of jobs annually. However, SMEs challenges include inadequate capital, poor infrastructure, rapid technological changes, and limited access to the market. Due to these challenges, Kenya National Bureau of Statistics (KNBS) reports indicate that many SMEs do not celebrate their second birthday - eliciting concerns of sustainability of this sector. The majority of the SMEs that face sustainability concerns are in wholesale and retail trade, motor vehicle and motorcycles sectors whose water needs are immense therefore requiring effectiveness in its management (KNBS, 2016).

Regulation of the Water Sector in Kenya

There have been major historic reforms in the water sector in Kenya, mainly triggered by the Water Act 2002 with an overall objective of increasing efficacy in water management. This Act is the backbone of the existing Institutional Framework reforms and was critical in decentralizing water provisional services so as to enhance stakeholder engagements in the sector. The Act necessitated reforms in the management of water resources and strengthened institutions

which is supported in the OECD principle of trust and engagement focusing on capacity building of stakeholders (Hassenforder and Barone, 2019; Leclert et al., 2016; OECD, 2018). The Ministry of Water and Irrigation was tasked with overall oversight of the Water Sector, and its roles include policy formulation and coordination. Institutions born by the Act include Water Services Regulatory Authority, Water Services Boards and Water Services Providers (WASREB, 2020). These are to provide standards and services for water and sewerage which have the potential for being additional challenges for SMEs if not well addressed (OECD, 2018; WASREB, 2020). Under the management of water resources, the following institutions were created; Water Resources Management Authority (WRMA), Water Services Regulatory Board (WASREB), Water Services Boards (WSBs), Water Services Providers (WSPs) and Water Resource Users Associations (WRUA's) (Ondigo et al., 2018). Other reforms realized include commercialization of water resources and stakeholder's participation in water resources management which pivotal in water governance (OECD, 2018; WASREB, 2020). The Constitution of Kenya 2010 further provides for adequate access to water by all citizens as a fundamental right, while the decentralization of power through a devolved governance system ensures participation of different stakeholders in managing water resources (Government of Kenya GOK, 2010; Ondigo *et al.*, 2018). The devolution of water functions to the local level has increased transparency and accountability in the water sector and underscores the trust and engagement principle which is critical in enhancing water governance (OECD, 2018). The National Water Policy 2012 aims at ensuring the preservation, conservation and protection of water resources through efficient management of the resources by various stakeholders. It also seeks to enhance the supply of quality and sufficient water to meet different needs and ensure proper wastewater disposal which have a contributory role in water governance for SMEs (WASREB, 2020).

Water Governance in Urban Areas

The water governance concept has been defined by the Water Governance Facility (WGF) of the UNDP as the political, socio-economic and administrative systems that have been put in place, directly/indirectly affecting development, management and use of water resources and water service delivery to the society (Agarwal, 2000).

The status and effectiveness of water governance systems can be assessed by evaluating adherence to National and County governance standards, adopting sustainable consumption practices, and a well-structured and efficient decision-making process. Prioritizing good water governance is critical to ensuring that the right to water and sanitation is realized (Bressers and Kuks, 2013; Ondigo et al., 2018). Devolved governance structure in Kenya meant that Nairobi city is one of the 47 county governments, thus characterized with abrupt leadership and management changes associated with democratic jurisdictions have far reaching impacts on water governance affecting the bottom lines of SMEs (Irungu and Arasa, 2016; Muriithi, 2017; Osano, 2019). National standards

such as the Water Act 2016 have not been well appreciated at the County level thereby an obstacle to water governance on various levels. Water governance indicators include service standards, financial management, human resources, utility oversight/supervision, information and control systems, and user consultation (WASREB, 2020). The weighting of these indicators is illustrated in figure 2 where utility/ oversight supervision and financial management have significance at 40% and 28% respectively. Figure 3 shows water governance performance comparing the listed indicators for cities and towns in Kenya for 2017/2018 and 2018/2019 with human resources and service standards having a steady rise on average. Interestingly, there was a drop in the utility/ oversight and information control aspect which are found in the efficiency and trust and engagement component of OECD water governance principles (OECD, 2018). Additionally, water governance indicators, namely utility oversight, financial management and information and control systems, are the foundational parameters and carry more than half the total weight.

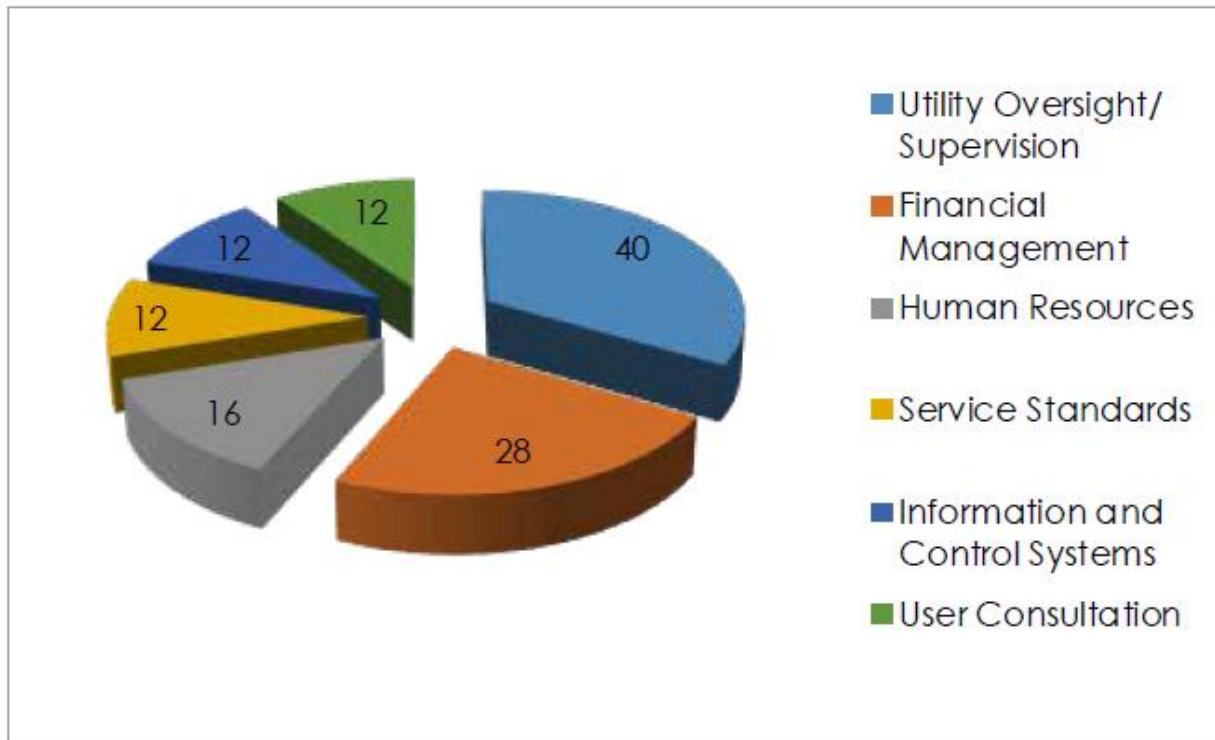


Figure 2: Weights of water governance indicators. Source: (WASREB, 2020)

There was a decline in the three major indicators' performance (utility oversight, financial management and information control systems) over the period 2017/2018 and 2018/2019. These three core governance indicators are supposed to build firm structures and systems, which

translates to improved performance in other areas. Their impact on SMEs sustainable consumption and production would add to the recent challenges SMEs in Kenya would be facing (Abisuga-Oyekunle et al., 2020; Irungu and Arasa, 2016; ITC, 2019).

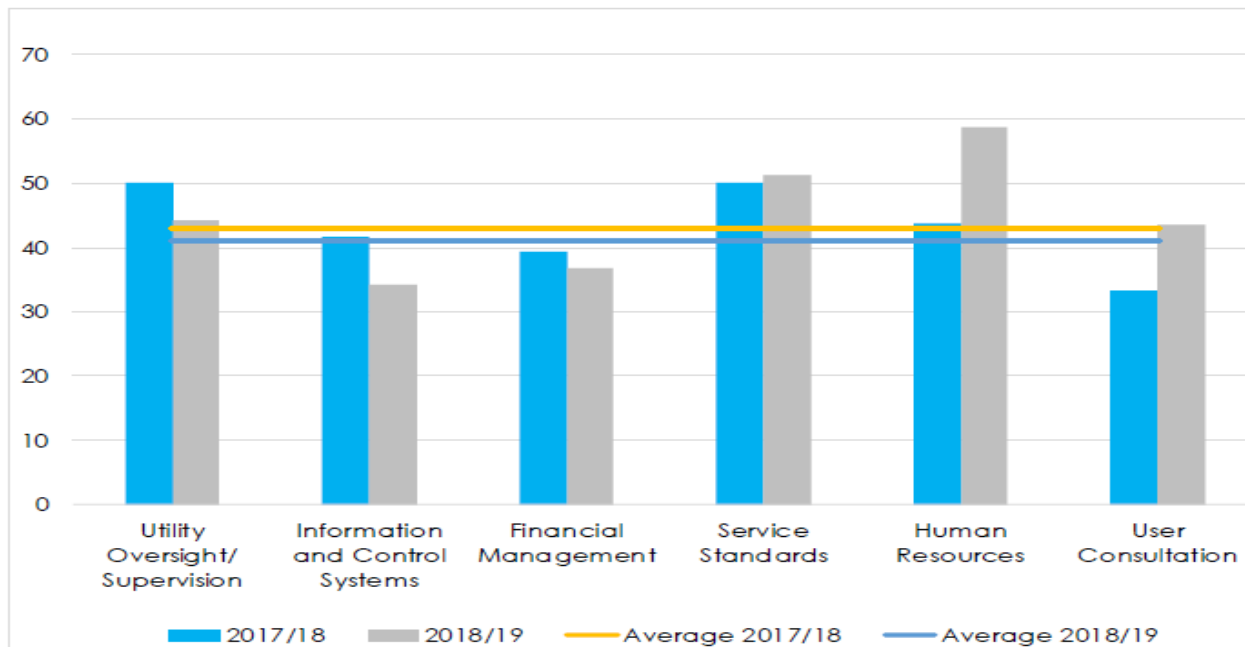


Figure 3. Performance comparison among the governance indicators. Source: (WASREB, 2020)

Factors affecting water governance in Nairobi

In the recent past (figure 1), water scarcity has significantly impacted Nairobi's businesses, thereby reducing SMEs profits (Muriithi, 2017; World Bank, 2016, 2020a). The average cost of water and per capita daily water consumption in Nairobi County is high in the western and central parts (WASREB, 2020). These areas are characterised by high population densities than the Easterns parts. Figure 4 shows that the average water cost is high, where per capita average daily water consumption is high which

with the projected doubled city population outlines the challenges SMEs could have in sustainable consumption and production. The contrary is also true, which further impacts on sustainability by SMEs on water resources. This has an implication for SMEs since densely populated areas are likely to harbour more SMEs than sparsely populated areas increasing the water demands and needs in these areas.

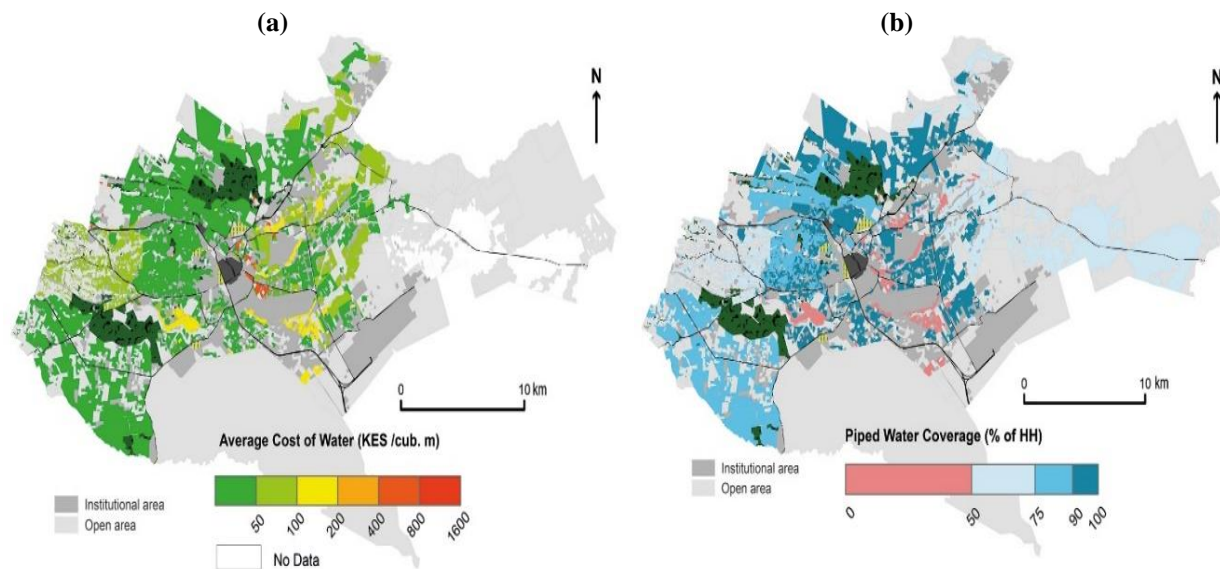


Figure 4. Average cost of water in Nairobi (a) and per capita average daily water consumption (b) in Nairobi County. Source: Ledant, 2013

Factors affecting water governance in Nairobi SMEs include shortfalls in water supply, projected at 25% of the city's water provider, NCWSC which affects the sustainability aspect in consumption and production of SMEs (World Bank, 2020b, 2008). These shortfalls are accelerated by rapid urban migration, and notably, barely half of Kenya's urban population has access to water and crippled further by introduction of water cartels (Chini and Stillwell, 2020; World Bank, 2020b). For instance, less than a third of Nairobi's population has access to improved sanitation, and only 40 per cent is connected to a sewerage system, thereby affecting SMEs water governance in that efficiency and effectiveness principles are curtailed by the decreased number with access (Abisuga-Oyekunle *et al.*, 2020; Iro Ong'Or and Long-Cang, 2007).

Water infrastructure is another factor affecting the Water and Sanitation in Nairobi for SMEs in that it has not been improved and upgraded to meet the growing water demand from various facets (Hassenforder and Barone, 2019; Mwhiki, 2018; Olagunju *et al.*, 2019). Due to lapses in water infrastructure development, water supply is unreliable to cater to the small majority who directly connects to tapped water in Nairobi city

necessitating SMEs to take alternatives of water vendors to sustain their consumption and production (Irungu and Arasa, 2016; ITC, 2019; World Bank, 2016). Alternative measures to address water shortages such as water harvesting and water storage tanks are challenged by the high purchase cost for SMEs thereby not a remedial measure sought after in the long run (Abisuga-Oyekunle *et al.*, 2020; Irungu and Arasa, 2016; World Bank, 2020b). This situation allows the stark differences in socio-economic between the wealthy and the poor to translate into unequal and inequitable consumption of the available water, which is also mirrored in SMEs taking on service industry nature in Nairobi (Bakker and Demerouti, 2007; Ledant, 2013; Ondigo *et al.*, 2018; World Bank, 2020b).

Multi-level governance gaps in water management in Nairobi

Multi-level governance gaps in Nairobi's water governance exist despite substantive reforms in the water sector as supported by the Water Act 2016 (Government of Kenya GOK, 2010, 2007). Water reforms clarified the roles of different actors and water institutions' mandates to mitigate the water sector's lapses however the same has not translated to better management of the water sector (Ledant, 2013; Ondigo *et al.*,

2018). Despite intense engagement by many stakeholders in the sector coupled with the weak regulatory arrangements, it gives rise to over-institutionalization, overlapping roles, lack of coordination, and uncertainties about the implementation of reforms in the water sector and management in entirety. This has an overall impact on water governance for SMEs which manifest in increased costs of water supply and treatment (Biswas and Tortajada, 2019; Gallagher *et al.*, 2016; Jacobsen *et al.*, 2013).

Further, vested interests, undistinguished stakeholders' roles, and relatively small circles of those making decisions process lead to strong disincentives for real transparency and independence in Nairobi's water governance. Under the OECD water principles on effectiveness, clear roles and responsibilities, policy coherence and capacity building ensure that water governance can be attained thereby when implemented can improve water management by SMEs (Chini and Stillwell, 2020; Osano, 2019).

Another critical governance bottleneck is real accountability despite the presence of various stakeholders in the water sector, the same is still evidenced in the day to day running of SMEs (Jacobsen *et al.*, 2013; Kombo *et al.*, 2014; Olagunju *et al.*, 2019). Notably, water corruption enhances this bottleneck by frequent launches of new 'sectoral reviews' which do not fully act as watchdogs in the water sector failing the OECD water governance principle of trust and engagement (Abisuga-Oyekunle *et al.*, 2020; van Leeuwen *et al.*, 2019). Enforcement of the water reforms is inadequate as many stakeholders perceive, where the institutions mandated with water resources management need capacity building and empowerment to perform as illustrated in figure 3 (Irungu and Arasa, 2016; Ledant, 2013; Romano and Akhmouch, 2019).

The mapping of water governance actors in Nairobi with an analysis of their relationships in formal and informal behaviors illustrate that in the urban areas, unseen players are determining the outcomes of the market forces that affect SMEs, which include formal and legal transactions, but also informal arrangements, strong rent-seeking efforts, illegal commercial activities and other exciting governance

dynamics (Chini and Stillwell, 2020; Iro Ong'Or and Long-Cang, 2007; Ledant, 2013). For instance, in the cities, water providers for drinking or sanitation obtain large profit margins from high prices, reflecting both the water scarcity and the inefficient way in which the little available water is managed. It is further complicated by the geopolitics associated with the water sources for which the city draws from thereby the cost of water supply dependent on cordial relationships of the perceived water owners (Irungu and Arasa, 2016; WASREB, 2020; World Bank, 2020b).

Policy responses to mitigate fragmentation and foster integrated urban water management in Nairobi

Several cases of over-institutionalization and overlapping roles demonstrate the water sector policy reform lapses and their effective in urban water management (Abisuga-Oyekunle *et al.*, 2020; Osano, 2019). Water sector coordination remains challenged despite the many institutions and insufficient human resources that can focus on coordination and management of water services. This in the long run affects water supply, access and quality which are vital in sustainable consumption and production of SMEs (Hassenforder and Barone, 2019; Ledant, 2013; Ribeiro and Johnsson, 2018).

Water governance in Nairobi for SMEs can be enhanced by the adoption of the OECD principles of water governance which include effectiveness, efficiency and trust and engagement (Akhmouch *et al.*, 2018; Neto *et al.*, 2018). Effective water governance can greatly contribute to efficient water management for SMEs in Nairobi that is on design and implementation of water policies, in shared responsibility across levels of government, civil society, business and water sector stakeholders to reap the economic, social and environmental benefits of good water governance (Neto *et al.*, 2018; OECD, 2018). SMEs have rolled out ISO training to improve their water efficiency, a critical principle in the OECD water governance framework and which factors in the aspect of sustainability in consumption and production encouraging zero waste (Irungu and Arasa, 2016; OECD, 2018).

The OECD Principles on Water Governance are designed to contribute to tangible and outcome-

oriented public policies, based on three mutually reinforcing and complementary dimensions of water governance which can apply in Nairobi for SMEs as follows:

Effectiveness relates to the contribution of governance to define clear sustainable water policy goals and targets at all levels of government, implement those policy goals, and meet expected targets. SMEs in Nairobi would benefit from water effectiveness by institutions mandated, thereby translating to increased profits. The effectiveness principle would offer SMEs an opportunity to have individual water policies within their working space which in return enhances water governance (Neto et al., 2018; OECD, 2020, 2018).

Efficiency component contributes to governance by maximizing the benefits of sustainable water management and welfare at the least cost to society where SMEs would enhance their sustainable consumption and production. Efficiency takes on the form of data information, regulatory framework, financing and innovative governance which provides for platforms for SMEs to come up with innovative ways of recycling and re-using their waste water and managing their water efficiently (Abisuga-Oyekunle et al., 2020; World Bank, 2020b).

Trust and Engagement component contributes to governance through building public confidence and ensuring stakeholders' inclusiveness through democratic legitimacy and fairness by stakeholders which SMEs too can be included in the water governance structures. This brings all

stakeholders, including SMEs in the water governance, thereby building on public confidence and integration. Besides stakeholder engagement, this component also focuses on monitoring and evaluation which is a key element of ISO training hence critical in assisting SMEs monitor and evaluate their costs (Murphy, 2013; Neto et al., 2018; OECD, 2018). Additionally, this components also shed lights on integrity and transparency which are critical for the SMEs and the water institutions if water governance is to be enhanced in increasing their bottom lines (Ledant, 2013; OECD, 2020, 2018; WASREB, 2020). Through leveraging the tradeoffs between rural and urban, SMEs can find business niches in the water sector and further increase their profitability and overall improve their consumption and production (Abisuga-Oyekunle et al., 2020; ITC, 2019; OECD, 2018).

Conclusion

Water governance for SMEs is fundamental for sustainable production and ensuring posterity of the same. Water governance involves various stakeholders who impact the bottom lines of SMEs, especially in city settings. Weak institutions and water policies affect SMEs' sustainable consumption and, in the long run drain off the profits of SMEs on additional costs for water treatment and availability. Policy fragmentation hinders the sustainability component in water governance for SMEs in the city, further crippled by an ever-increasing urban population. Without proper water governance, sustainable consumption by SMEs becomes unattainable.

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