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Factors impeding on the successful implementation of SDG 6 in Africa

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Abstract

The infrastructure supporting water supplies will inevitably be under ongoing strain for several reasons, which the article attempts to examine. Therefore, practical steps must be taken to address the issues associated with water. Rapid urbanization, migration, and climate-related disasters in African nations create water concerns that need for tailored, strategic solutions. The article aims to explore the water infrastructure (focus) challenges in African context (locus). This may assist policymakers in identifying factors that may restrict the achievement of sustainable development goal (SDG) 6. The article uses a qualitative research approach to compile information. The data was collected using secondary sources hence performed document review of available published works. The findings explore various challenges linking to migration, population, climate change, etc. that implies pressure on water infrastructure. The article proposes the consideration of public private partnership arrangement to share the challenges and find solutions in a manner benefiting all stakeholders.

Keywords: *Africa, public private partnership, qualitative, sustainable development goal 6, water.*

Introduction

According to Ohwo and Ndakara (2022), progress in sanitation coverage in Sub-Saharan Africa was assessed based on the proportion of the population utilizing at least basic sanitation or engaging in open defecation. Attaining the SDG target 6.2a in the region necessitates that all individuals possess "safely managed sanitation" and that open defecation (OD) be eradicated by 2030. Notwithstanding the intrinsic advantages of reaching this objective, the majority of SSA nations remain well behind in making substantial progress, as the degree of coverage fluctuates both among and within countries. For instance, the average coverage of at least basic sanitation in Sub-Saharan Africa indicates that rural regions had 21% in 2015 and 23% in 2020, compared to urban coverage of 44% in 2015 and 46% in 2020 (World Health Organisation [WHO] and United Nations Children Fund [UNICEF], 2021). This indicates a service disparity of 23% favouring the metropolitan region. Correspondingly, the deficiencies in the practice of open defecation (OD) were more pronounced in urban areas, with just 7% and 5% of the urban population engaging in OD in 2015 and 2020, respectively, whereas the rural population exhibited higher rates of 31% and 27% during the same timeframe (WHO and UNICEF, 2021). This clearly indicates that the rural sector of SSA significantly contributed to the region's 22% and 18% numbers for OD practice in 2015 and 2020, respectively. Given the present national annual rate of change (-0.72%) in OD practice in SSA (refer to Table 1 below), the area will fail to meet target 6.2a if the current rate of advancement persists.

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Table 1: Percentage of population using at least basic sanitation and open defecation

Table 1: Percentage of Population Using at Least Basic Sanitation and Open Defecation

S/N	Country	At Least Basic Sanitation				Open Defecation				Remark
		2015	2020	Annual rate of change	2030	2015	2020	Annual rate of change	2030	(meet or miss target by 2030)
1	Angola	47	52	1.21	64.1	23	18	-1.24	5.6	Miss target
2	Benin	15	17	0.39	20.9	55	52	-0.80	44.0	Miss target
3	Botswana	75	80	1.41	94.1	12	10	-0.60	4.0	Miss target
4	Burkina Faso	20	22	0.55	27.5	48	40	-1.63	23.7	Miss target
5	Burundi	46	46	0.03	46.3	3	3	-0.01	2.9	Miss target
6	Cabo Verde	70	79	1.98	98.8	23	14	-1.85	0.0	Miss target
7	Cameroon	43	45	0.35	48.5	6	6	-0.12	4.8	Miss target
8	Central African Republic	16	14	-0.32	10.8	25	25	0.12	26.2	Miss target
9	Chad	11	12	0.11	13.1	66	64	-0.36	60.4	Miss target
10	Congo	19	20	0.43	24.3	9	8	-0.01	7.9	Miss target
11	Côte d'Ivoire	31	35	0.68	41.8	28	25	-0.53	19.7	Miss target
12	Democratic Republic of the Congo	17	15	-0.43	10.7	12	12	0.08	12.8	Miss target
13	Djibouti	61	67	0.98	76.8	17	16	-0.16	14.4	Miss target
14	Equatorial Guinea	66	66	0.03	66.3	3	3	-0.01	2.9	Miss target
15	Eritrea	12	12	0.03	12.3	67	67	-0.01	66.9	Miss target
16	Ethiopia	7	9	0.31	12.1	32	17	-3.00	0.0	Miss target
17	Gabon	49	50	0.79	57.9	2	2	-0.01	1.9	Miss target
18	Gambia	46	47	0.21	49.1	1	<1	-0.27	0.0	Miss target
19	Ghana	19	24	0.81	32.1	19	18	-0.19	16.1	Miss target
20	Guinea	24	30	1.05	40.5	16	12	-0.79	4.1	Miss target
21	Guinea-Bissau	14	18	0.65	24.5	16	10	-1.30	3.0	Miss target
22	Kenya	32	33	0.11	34.1	11	9	-0.46	4.4	Miss target
23	Lesotho	41	50	2.11	71.1	28	22	-1.27	9.3	Miss target
24	Liberia	17	18	0.25	20.5	41	38	-0.86	29.4	Miss target
25	Madagascar	10	12	0.41	16.1	42	42	0.16	40.4	Miss target
26	Malawi	25	27	0.27	29.7	7	4	-0.53	0.0	Miss target
27	Mali 37	45	1.48	59.8	9	5	-0.81	0.0		Miss target
28	Mauritania	43	50	1.62	66.2	35	31	-1.22	18.8	Miss target
29	Mayotte	89	99	2.01	100	<1	<1	-0.07	0.0	Meet target
30	Mozambique	29	37	1.40	51.0	30	21	-1.95	1.5	Miss target
31	Namibia	34	35	0.36	38.6	49	47	-0.46	42.4	Miss target
32	Niger	13	15	0.47	19.7	72	68	-0.69	61.1	Miss target
33	Nigeria	38	43	0.70	50.0	21	19	-0.39	15.1	Miss target
34	Réunion	99	99	0.29	100	<1	<1	-0.07	0.0	Meet target
35	Rwanda	64	69	1.17	80.7	2	2	-0.12	0.8	Miss target
36	Sao Tome & Principe	41	48	1.36	61.6	50	43	-1.41	28.9	Miss target
37	Senegal	52	57	0.97	66.7	14	11	-0.66	4.4	Miss target
38	Seychelles	99	99	0.29	100	<1	<1	-0.07	0.0	Meet target
39	Sierra Leone	15	17	0.31	20.1	19	16	-0.49	11.1	Miss target
40	Somalia	34	39	0.96	48.6	31	23	-1.78	5.2	Miss target
41	South Africa	74	78	0.99	87.9	3	<1	-0.60	0.0	Miss target
42	South Sudan	11	16	0.96	25.6	66	60	-1.27	47.3	Miss target
43	Sudan	35	37	0.82	45.2	27	24	-1.35	10.5	Miss target
44	Togo 16	19	0.45	23.5	49	45	-0.70	38.0		Miss target
45	Uganda	19	20	0.16	21.6	7	5	-0.49	<1	Miss target
46	United Republic of Tanzania	26	32	1.33	45.3	11	11	0.03	10.7	Miss target
47	Zambia	30	32	0.49	36.9	15	11	-0.83	2.7	Miss target
48	Zimbabwe	38	35	-0.47	30.3	25	23	-0.36	19.4	Miss target
49	**Sub-Saharan Africa**	**30**	**33**	**0.50**	**38.0**	**22**	**18**	**-0.72**	**10.8**	**Miss target**

Source: WHO and UNICEF, 2021.

The sanitation coverage for nations in Sub-Saharan Africa, as illustrated in the Table above, reveals significant disparities in services. The prevalence of at least basic sanitation in Sub-Saharan African countries varied from 7% to 99% in 2015 and from 9% to 99% in 2020. Ethiopia exhibited the lowest range for both 2015 and 2020, whilst Réunion and Seychelles recorded the largest range in 2015, and three nations (Mayotte, Réunion, and Seychelles) achieved the maximum range in 2020. Only 18 (37.3%) nations experienced a five percent or more growth in the utilization of at least basic sanitation from 2015 to 2020 (Ohwo & Ndakara, 2022, 1145). Consequently, it is not unexpected that merely 12 (25%) countries exhibited an annual growth rate of one percent or higher in the utilization of at least basic sanitation in the

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region from 2015 to 2020. Zimbabwe recorded the lowest annual growth rate at -0.47%, and Lesotho achieved the best annual growth rate at 2.11% (Ohwo & Ndakara, 2022, 1145). Furthermore, just 10 (20.8%) nations had 50% or more of their populations utilizing at least basic sanitation in 2015, however this number increased to 14 (29.2%) countries in 2020. Furthermore, utilizing the annual growth rates of the individual countries to forecast for 2030 revealed that only 18 (37.5%) countries will achieve 50% or more of their populations utilizing at least basic sanitation (Ohwo & Ndakara, 2022, 1145).

These results indicate that sanitation services in numerous nations within the region are advancing at an unsatisfactory pace, which supports earlier findings (Hopewell & Graham, 2014; Ukoji & Ndakara, 2021). This condition may cause numerous countries to fail to achieve the SDG target 6.2a.

The article is qualitative. The rationale, according to Cloete, Wissink and Coning (2006,61; Machete, 2025,7) is that understanding the technique and procedures of qualitative research is closely linked to how qualitative researchers conceptualize the work they are doing. Because of this, qualitative research can be thought of as existing on a continuum, with a comprehensive, nearly paradigm-like approach indicating one dimension and situational pragmatic and opportunistic methodological approaches characterizing the other. The information is compiled using document review. According to Mogalakwe (2006,221; Mutandwa, 2022,41), A document review is the process of examining documents that provide details about the topic being studied. It takes easily accessible documents and pulls useful information from them. The significance of using document review in this article was to capture the dynamics of water management, water governance in Africa and public private partnership (PPP) uptake.

Factors impeding on the successful implementation of SDG 6 in Africa

Worldometer (2020) reported that in 2020, there will be 1.3 billion people living in Africa, making it one of the most populous continents in the world. According to the report released by the Worldometer (2025), by 2025, the world's population will have grown by about 0.85% annually. It is projected that the existing population is growing by about 70 million people annually. The Organisation for Economic Co-operation and Development (OECD) (2021) argued that about 30% of the increase in per capita GDP over the last 20 years in Africa can be attributed to urbanization. As a result, Sub-Saharan African nations have seen a shift in water-use efficiency trends throughout time, see Figure 1.

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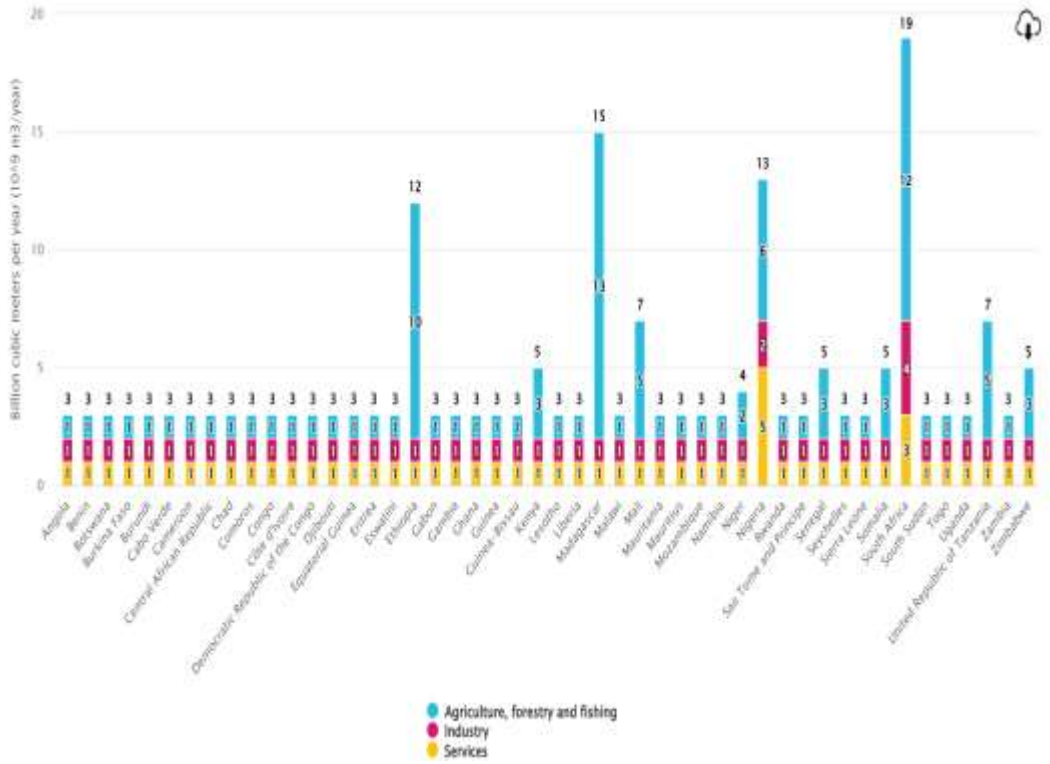
Figure 1: Change in water-use efficiency over time in Sub-Saharan Africa, progress over time



Source: UN Water, 2025.

Figure 1 shows that there is water withdrawal in Agriculture, forestry and fishing sector. The amount of water extracted annually for irrigation, cattle, and aquaculture uses that is self-supplied (for one's own use only, rather than being distributed to other economic units). It comprises water from primary renewable freshwater resources and secondary sources, as well as water from desalinated water, direct use of agricultural drainage water and (treated) wastewater, and excessive extraction of renewable groundwater or removal of fossil groundwater. Industrial water extraction includes water for the meat and dairy industries as well as for the industrial processing of produced agricultural products (UN Water, 2025). The water withdrawal in Industry shows that the amount of water extracted each year for industrial use. In addition to water from primary renewable freshwater resources and secondary sources, it also includes the possible use of desalinated water or direct use of (treated) wastewater, as well as excessive extraction of renewable groundwater or removal of fossil groundwater. Self-supplied businesses that are not a part of the public distribution system are referred to as this sector. It is estimated that the net consumption to withdrawal ratio is less than 5 percent. It does not contain hydropower, but it does include water for thermoelectric plant cooling (UN Water, 2025). The water withdrawal in services shows that annual amount of water extracted, mostly for the population's direct usage. Among these are water from primary renewable freshwater resources, secondary water sources, and the possible over-abstraction of renewable groundwater or removal of fossil groundwater, as well as the direct use of treated wastewater or desalinated water. Usually, the entire amount of water extracted by the public distribution system is used to calculate it. Those sectors of the economy that are linked to the municipal network may be included. Between 10 and 50 percent in rural areas and 5 to 15 percent in urban areas, the ratio of net consumption to water withdrawal can vary (UN Water, 2025).

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Most countries in the African continent therefore continue to face many challenges that inhibit the successful implementation of SDG 6 objectives. A literature scan shows that some of these impeding factors include the following.

Water Governance Challenges

The obstacles encountered by nations in Sub-Saharan Africa in attaining water security indicate a pervasive deficiency in management throughout the region (Gain et al., 2016). The inadequacy of water governance is intensified by the geographical and temporal shifts of freshwater supplies, the transboundary characteristics of numerous basins, and the limited collaboration among riparian governments in transboundary water management (Kanyerere, Tramberend, Levine, Mokoena, Mensah, Chingombe, Goldin, Fatima & Prakash 2018, 97). This indicates that the quality of water traversing national borders is affected by varying local catchment management strategies; water extraction is influenced by competing demands within each country, and flood and drought management policies differ among each riparian state (Nkiaka, Bryant, Okumah & Gomo, 2021, 10).

Conflict and Migration

Demand for water resources has been a longstanding source of conflict, resulting in numerous assertions regarding the correlation between shortages of water, conflicts, and migration (Ayana et al., 2016). Tensions over water resources are anticipated to escalate owing to climate change, as droughts that exacerbate water scarcity are projected to occur more frequently because of unpredictable rainfall patterns (Levy, 2019). This might have severe repercussions for individuals residing in regions currently experiencing water scarcity, like the Horn of Africa, the Sahel, and the southern African sub-region. Conflicts arising from economic and social problems and political crises can jeopardize the supply of water by damaging water supply networks, diminishing the operational capacities of governmental agencies, and potentially undermining transboundary water governance (Kut, Sarswat, Bundschuh & Mohan, 2019; Roach & Al-Saidi, 2021). Numerous continuing conflicts in Sub-Saharan Africa have led to the forcible relocation of individuals, both internally and as refugees. The substantial displacement of individuals has significant ramifications for water security and may incite conflict between host communities and internally displaced persons (IDPs) (Kamta, Galukande, Maeda Luboga & Amn, 2021). The effects of conflicts on water security in Sub-Saharan Africa are inadequately researched; yet, establishing peace and stability in the region may be essential for achieving water security.

Urbanisation and Population Growth

Accelerated population expansion has resulted in a rising trend of urbanization throughout Sub-Saharan Africa, with the urban populace anticipated to surpass 1.3 billion by 2050 (Güneralp, Lwasa, Masundire, Parnell & Seto, 2017). This trend is anticipated to exhibit regional variation, with coastal regions undergoing the most significant population expansion and urbanization, propelled by relocation from arid and semi-arid regions due to climate-induced water scarcity (Henderson, Storeygard & Deichmann, 2017). Heightened migration to urban areas will result in augmented water demand (Dos Santos, Adams, Neville, Wada, De Sherbinin, Bernhardt & Adamo, 2017). Since most of the urban water supply is sourced from surface water bodies in rural catchments, heightened pollution from agricultural fields in these regions will escalate the financial burden of water treatment, which will be passed on to urban residents by water utility companies (Niasse & Varis, 2020). Attaining water security in urban regions may be hindered by insufficient investment in water infrastructure relative to the swift urbanization and the deterioration of aged systems (Dos Santos et al., 2017; Nlend, Celle-Jeanton, Huneau, Ketchemen-Tandia, Fantong, Boum-Nkot & Etame, 2018). Limited access to water supply in informal settlements in Sub-Saharan Africa is compelling inhabitants to depend on contaminated shallow groundwater wells and surface water bodies, consequently heightening their vulnerability to waterborne infections (Niasse & Varis, 2020).

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Lack of Infrastructure and Funding

Diarrheal illnesses, caused by the consumption of unclean water and inadequate sanitation, constitute 7% of annual fatalities in Africa (WHO, 2016, 4). According to Chitonge, Mokoena and Kongo (2020, 10), resolving the challenges of access to adequately managed water and sanitation has consistently been a pressing concern in numerous African nations. Numerous African nations have reacted by enhancing water and sanitation infrastructure for their underserved populations. National initiatives have been augmented by foreign financial and technical support; nevertheless, this financing source has not always proven reliable. Several nations have prioritized water and sanitation infrastructure to mitigate the risk of waterborne infections (Chitonge, Mokoena & Kongo, 2020, 10). Establishing sufficient and consistently maintained infrastructure has posed a challenge in numerous countries, particularly in rural regions.

The financial landscape demonstrates considerable regional variations among end users. A significant portion of the Global South contends with financial deficits for essential water initiatives (Evaristo, Jameel, Tortajada & Wang, 2023, 2). In Southern Africa, there is a significant shortfall in investments for WASH services (Tseole, Mindu, Kalinda & Chimbari, 2022, 7). This deficiency exacerbates existing disparities in access and leads to negative health outcomes (Khamara et al., 2012, 12). The African water sector is further impeded by the persistent undervaluation of water. Tariffs, fundamentally, ought to assist in reducing the expenditure disparity. However, tariffs frequently insufficiently cover expenses, complicating the funding of operations and maintenance. Structural and operational inefficiencies, coupled with insufficient institutional capacity, inadequate data, analytical tools, and sector expertise, exacerbate the issue. Furthermore, a clear disparity exists between the supply and demand in finance, deterring prospective commercial investors due to substantial initial capital requirements and prolonged return on investment timelines (Evaristo et al., 2023, 4).

Socio-Economic Challenges

The other significant concern is the disparity in access to safely managed water and sanitation (Chitonge et. al., 2020, 10). The achievement of SDG 6 objectives relies on the formation of effective partnerships at regional, national, and international levels to address existing inequities in access. The challenges of forming successful partnerships at both national and international levels to mitigate disparities are rarely addressed at water forums and conventions, as they have been considered inconsequential for decades. A primary reason for this is that most individuals impacted by the inequitable distribution of water resources are marginalized from decision-making processes (Chitonge et. al. 2020, 10).

Political Commitment

The Sustainable Development Goals aim to fulfil several objectives that the Millennium Development Goals did not touch. Political commitment at the national level is essential to accomplish the objectives specified in the SDGs. The absence of commitment from politicians and policymakers in African countries has hindered the achievement of the MDGs. The deficiency of commitment to the SDGs is evidenced by the minimal budgetary provision for water services, as exemplified by Chitonge (2011, 6). Should the current business-as-usual approach persist, the realization of the SDGs by 2030 is improbable. Beyond assertions in policy documents, there is few evidence that African heads of state have earnestly dedicated themselves to financing and executing efforts to enhance water and sanitation, particularly for the impoverished. The absence of political commitment jeopardizes the advancement of achieving SDG 6 on the continent.

Policy Challenges

The policy environment is fraught with difficulties in creating and sustaining sustainable water systems. Islam and Islam (2021, 59) simply delineate this obstacle by emphasizing the widespread problem of "coordination gaps" in water quality management. This includes a wide range of issues, such as policymaking, technological implementation, financing, monitoring, data management, and capacity development. A significant disparity has been identified between technological progress and scholarly discussion compared to the practical implementations by policymakers (Basu & Dasgupta, 2021, 24). This

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disconnect indicates that, despite the increasing scientific literature endorsing SDG 6, the focus remains on water governance concerning surface and groundwater, as well as wastewater collection and treatment, while emerging concepts such as water security, the water-energy-food nexus, and potable water reuse are still in their infancy (Evaristo et al., 2023, 6). This ultimately results in a policy lag, highlighting the necessity to reconcile the gap between science and policy for more effective water governance systems.

Water infrastructure is also impacted by climate change. Climate change is causing variations in water availability (Dong, Jiang, Zeng, Guo & Zeng, 2020). According to Dong et al., (2020), extreme hydrological events appear to be becoming more frequent and larger, endangering urban water infrastructures and leading to more catastrophic urban flooding or waterlogging disasters as well as a more severe water shortage crisis. Dong et al. (2020) further emphasised that it is predicted that climate change would significantly alter the time and intensity of rainfall events, which will impact flooding that happens in many urban areas worldwide and, absent adequate mitigation, raise the risks and costs of future floods. It is considered that climate change has increased the frequency and severity of urban conditions of drought, which are made worse by a shortage of rainfall, affecting the water supply, availability and infrastructure to operate effectively.

Discussion and Findings

Various challenges are explored above to reason out water challenges in African context. Bodo (2019, 39) points out that urban regions in many countries are expanding quickly due to a shortage of socially beneficial services. To improve the welfare of citizens, social benefit services are defined by access to housing, work, healthcare, and education. Additionally, it is considered that trends in migration and urbanization in African nations have put strain on the labor market and service delivery, leading to a rise in unemployment, poverty, and food insecurity (refer to Madden & Gutman, 2020). Lack in town planning, urban planning, engineering, infrastructure, all may cause situations whereby people start establishing slum areas and living in settlements with poor health and hygiene situations (refer to Cobbinah, 2022). Such situations may further cause overcrowding in slums that are against urban planning processes and congestion, causing pressure on water infrastructure, supply and availability on daily basis.

People living in such settlements may also struggle to pay municipal taxes and rates, causing financial pressure on authorities to maintain water infrastructure within their areas of jurisdiction (refer to Eludoyin & Olanrewaju, 2021, 6). Such situation, with lack of financial resources and support, may further cause maintaining the adequate urban and town planning processes to maintain water infrastructure. This is substantiated by the opinions of Habtemariam, Gelaye, Du and Mahendra (2021, 10) stressing that a weak economy has an impact on investors' desire to invest. Low investment returns will discourage investors from making new investments.

Carden and Fell (2021:11) explained that in contrast to other urban services, water resource management is frequently thought of as a last resort in the municipal planning process. Water resource management receives the least attention, which results in poor planning for water supply and management of water resources and/or facilities. Carden and Fell (2021:11) further stated that increasing the availability of water services to impacted communities is prioritized over infrastructure maintenance and environmental capital to address the injustices of the Apartheid era. As a result, inadequate planning for the management of water resources might result in subpar water resource management and quality.

It should be noted that there are governance problems with PPP projects that result in significant expenses and time consequences when the institutional framework is unable to develop PPP initiatives (Kumar, 2014,11). To end the cycle of subpar services, slow collection, weak finances, inadequate maintenance, deteriorating assets, and lacking coverage, several African governments have acknowledged the necessity of structural reforms (Cross & Morel, 2005,51-57). Institutional and policy reform are necessary to break this cycle of stagnation and improve financial and technological performance. The reason for this is that, in many cases, reforms depend on public-private partnerships, even though it is commonly believed that the public sector is the only one that can effectively assist the poor (Cross & Morel, 2005,51-57).

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However, to help maintain water infrastructure, PPPs require the backing of national governments, political parties, businesses in country-contexts. According to the Economic and Social Commission for Asia and the Pacific (2008, 40) because the government may offer various incentives and subsidies if a PPP project is economically successful but not financially effective, the financial and economic aspects of PPPs are significant to the government. For instance, revenue and tax breaks for a specific time frame. To promote PPPs, the government provides them to encourage increased output or maintain the water supply at affordable rates. Olsen (n.d: 1) states that PPPs can also be supported by the government by offering administrative assistance and coordination, securing project assets, and shielding private enterprises or investors from expropriation and legal changes. By doing this, PPPs will be able to carry out their duties efficiently and depend on government assistance.

SDG 6 Interventions and challenges in the global context: The case of Finland

Finland serves as a pertinent focal point for this study, having consistently ranked highly in international assessments of water availability and access, governance practices, transboundary river basin cooperation, and trust in legal systems (Ahopelto, Sojamo, Belinskij, Soininen& Keskinen, 2023, 155). Finland is considered a paradigm for water supply systems. Presently, around 90% of Finnish households are integrated into centralized water supply networks, around 85% of the population is connected to sewerage and centralized wastewater treatment systems, while the remainder utilizes decentralized and individual systems (Marttunen, 2019: 4). Finland possesses a wealth of freshwater resources, averaging over 20,000 cubic meters per capita (Eurostat, 2017: 1). Due to enhanced industrial and municipal wastewater treatment, nutrient flows have markedly diminished since the 1980s. Overall, surface waters are evaluated to be in good or high condition in 85% of Finnish lakes and 65% of rivers (Putkuri, Lindholm & Peltonen, 2013, 5).

Nevertheless, the infrastructure is deteriorating, and estimates indicate that current investments for the maintenance and replacement of water delivery systems constitute 0.5–1% of the networks' capital value. Ageing or inadequately maintained distribution systems can lead to the degradation of piped drinking water quality, resulting in significant health hazards (Marttunen, 2019, 4). A recent analysis by water and wastewater specialists assessed the status of Finland's built environment, assigning its water and wastewater infrastructure a rating of 7 on a scale from 4 to 10. Additional studies highlight that the current state of the Finnish water and wastewater infrastructure, together with the necessity for rehabilitation and replacement, is not precisely understood, and that rehabilitation requirements differ markedly among municipalities and networks (Laitinen, 2020, 42).

The provision of water services in Finland is extensive. The Finnish Ministry of Agriculture and Forestry (2016, 4) reports that centralized water supply services encompass over 90% of Finnish households, while wastewater services account for over 85%. Municipalities are legally obligated to develop water services; however, they are not directly accountable for the development of these services. The predominant portion of the populace is served by municipally owned utilities. User-owned groups, such as water cooperatives, are particularly significant in less urban areas. In the least populous regions, water availability frequently relies on private wells and onsite sanitation systems (Takala, 2017, 506).

Coordination of land use, sanitation, and water supply falls under the purview of the Centers for Economic Development, Transportation, and the Environment. Along with advising and directing regional operators to encourage improved water supply and sanitation, they also oversee the implementation of the legal targets for water intake, sanitation, and supply. Laws and the ways in which public agencies operate are always evolving. To guarantee a sustainable water supply and sanitation, it is critical to encourage open collaboration amongst various operators (Ministry of Foreign Affairs of Finland, 2020, 5). Water resource usage and management information systems are developed and maintained by the Finnish Environment Institute. In 2016, a water supply and sanitation services database was launched. A public information network gives everyone free access to important data that details the effectiveness and caliber of water supply and sanitation facility operations. The presentation of data makes it simple to utilize and comprehend (Ministry of Foreign Affairs of Finland, 2020, 5).

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Overall, water services in Finland are not experiencing any immediate crisis; operations are functioning adequately. Additionally, there is optimism regarding the exportation of Finnish water expertise, aiming to establish it as a successful international enterprise (Takala, 2017, 506). For instance, a primary initiative of the Finnish Government is the blue bioeconomy, which posits that water will become Finland's next significant export commodity, leveraging the country's advanced water expertise and technology (Finnish Ministry of Agriculture and Forestry, 2016). There should be an opportunity to evaluate issues pertaining to the long-term sustainable development of the water services sector and the requisite expertise. Consequently, it is important to open a dialogue by inviting sector experts to share their insights on sustainable development within water services.

Conclusion

Rapid urbanization is occurring in several African nations. Numerous factors, including subpar living circumstances, unemployment, and insufficient service delivery, are to blame for this. Because there are many people with endless needs to meet and limited resources, urbanization can make it difficult for the government, and local governments in particular, to offer effective and adequate services. There is a need for water services, thus the government and local governments must make sure that the infrastructure is adequate and well-maintained to supply water in cities.

Nations would have modified water rates to finance and establish efficient urban water infrastructure because lots of people live in cities. Prioritizing urban water infrastructure and urban planning would have allowed countries to engage in successful resource mobilization. Some African nations have adopted PPPs as an alternative to upgrade their urban water infrastructure.

Certain nations have benefited from PPPs by attracting investments in water infrastructure projects. The public sector is encouraged to operate more effectively by the fresh projects, actions, talents, and procedures that the private sector brings to the table. By completing competently managing and executing urban water infrastructure, PPPs have improved service delivery in the water sector.

It is crucial to plan strategies to lessen the influx of migration and urbanization to alleviate the problems associated with urban water infrastructure and establish the function of PPPs. This could help public service departments successfully carry out their service delivery mandate. Effective water management procedures may be enhanced by the participation of numerous stakeholders and efforts in the domains of town planning, urban planning, engineering, and water governance.

Alternative strategies are needed to address the daily water supply shortage because homes, businesses, and the public sector all depend on water. Farmers must also be prepared to handle the prudent use of water for agricultural reasons. Water is necessary for crops because a shortage could result in food insecurity. This could make it possible to connect SDG 6 with SDG 2, which is to lessen food insecurity. To handle water problems that could impact their agricultural output, farmers must be aware of disaster management methods. As a result, it is evident that there are numerous challenges related to water governance, which may be covered in more detail in subsequent publications.

The study's absence of empirical research is regarded as a weakness. Future publications can assess the importance of PPPs as lessons learned, incorporating a subset of municipalities from selected nations.

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