

Poverty politics and governance of potable water services: the core – periphery syntax in Metropolitan Accra, Ghana

Abstract

In developing countries, increasing urbanization amidst chronic financial constraints sharply limits the authorities' ability to provide universal urban infrastructural services. This tendency creates complex networks of governance that remains largely understudied and not clearly understood. This article examines this nascent literature, focusing on Metropolitan Accra's experience through the **sustainable development goal** lens: "Ensure availability and sustainable management of water and sanitation for all". Based on the analysis of 26 in-depth interviews with key informants about the current processes, technologies, and multiplicities of governance approaches, we demonstrate how the private sector does not only play a significant role in shaping the water dialogue, but has introduced its own modes of governance, which sometimes usurps preferences for public services. Ultimately, differences in procedural legalities and functionalities have spurred (un)healthy competition between the multiple governance modes, spearheaded by the private firms. Concluding, we caution that the multiplicity of management practices devoid of efficient and effective regulatory framework creates indecisive outcomes. Further, we suggest that the development of water-related capacity, both at the individual and institutional levels, will be fundamental in the realization of **sustainable development goal** 6 by 2030.

Keywords: disadvantaged communities; independent water providers; inefficient regulatory framework; Metropolitan Accra; Sustainable Development Goal 6.

1. Introduction

The provision of city services lags behind its rapid growth. In most cities, the provision of improved drinking water¹ is mostly erratic and increasingly unreliable with no easy solution, though if water problems were fixed, most water-related risks would have been resolved (see Trevett, et al., 2005). Many a time, water supply inadequacies are felt disproportionately in disadvantaged (and peri-urban communities) but such distortions remain hidden in cities' aggregated statistics. It was thus a landmark when in 2000, the **United Nations** (UN) entered into an anti-poverty drive that translated into eight inspiring Millennium Development Goals (MDGs) with target 10 of Goal 7 aiming to "Halve, by 2015, the proportion of people without sustainable access to safe drinking water and basic sanitation" (UNDP, 2006). In the same spirit, during the 'Rio+20' summit in 2012, UN-member States, mindful that the MDGs were 'expiring' by 2015 without significant improvement in the living conditions of the poorest of the population, committed to develop a new set of goals to build on the successes of MDGs and extend these to the whole global population, including the poorest and most vulnerable (UN, 2012). So when in September 2015, the 193 UN-member states consented to 17 Sustainable Development Goals (SDGs), it was an important milestone that, Goal 6 explicitly focused on water and sanitation (UN, 2014; SDSN, 2015).

Retrospectively, most sub-Saharan Africa countries without doubt missed the MDG Target 10. The latest report by the Joint Monitoring Programme

¹ Defined by the Joint Monitoring Programme (JMP) as: "a source that by nature of its construction or through active intervention, is protected from outside contamination, in particular from contamination with faecal matter" (UNICEF/WHO, 2015).

(UNICEF/WHO 2015) estimated that the proportion of the sub-Saharan Africa (SSA) population using improved sources of drinking water rose from 48% in 1990 to 68% in 2015, reducing the proportion of the population without improved water supply from 52% to 32%. Ghana however exceeded the target, as the percentage using improved water sources increased from 56% to 89%, reducing the gap from 44% to 11% (WHO/Unicef, 2010). Relatedly, the 2010 Population and Housing Census estimated that the proportion of people in Ghana with access to improved water sources was at 81.6% (GSS, 2012b), while the **Ghana Living Standard Survey (GLSS) 6 (2014)** put the figure at 78.6% in 2013. Though emanating from different sources, the data undoubtedly highlight Ghana's significant improvement in access to improved water sources since 1990.

A critical analysis of Ghana's feat however revealed that aggregate data mask important geographical differences. A more nuanced analysis shows the progress bypassed those who occupied the lowest ebb of the economic ladder located in disadvantaged communities creating pockets of chronic water stress areas with periphery conditions being more pronounced (see Ainuson, 2010; Songsore et al. 2014). This is in spite of the many political promises, policy initiatives and interventions to stymy the chasm of inequalities in urban water supply (Obeng-Odoom, 2011). One such policy intervention was in 2010, when the authorities in Accra launched an Integrated Urban Water Management Project, spanning till 2030 with the vision that states inter alia:

By 2030, everyone in the City of Accra, regardless of economic and social status, will have access to uninterrupted water supply, at an affordable price within a reasonable distance from the house.....

Coincidentally, this vision is consistent with the tenets of SDG 6, whose attainment is predicated on a governance structure that provides all stakeholders equal leverage in participation and financial architecture to operate (Grant, 2015; Arfrvidsson et. al, 2016). Consequently, this article examines the practicability of the current governance structure, or possible modifications needed to greatly enhance the prospects of achieving SDG 6. Essentially, the universal application of the SDGs (unlike MDGs, which was predominantly global-South focused) calls for deeper reflection and revision of the definition of poverty, progress and development beyond material living standards (i.e. income, consumption and wealth) alone. Rather, we must understand how all stakeholders including the informal actors complement or inhibit the formal sector's attempts to actualize world leaders' pledge to ensure "no one will be left behind" or their desire to "address social, economic and environmental aspects of sustainable development in a coherent and comprehensive manner" (UNEP, 2015: 4).

We concur that there are strong, complex, and dynamic complementarities and interrelationships between formal and informal activities (Groenewald et al, 2013; Arfrvidsson et al., 2016). In this context, our study moves beyond the rather sterile debates that set just a binary formal-informal discourse, and examines how the current governance structure addresses the water challenge in Metropolitan Accra. We seek to achieve our objective by answering two major questions: What

has changed in policy and practice, since 2000 in the provision of potable water? What are the prospects, and the best governance framework for sustaining potable water services in Accra? These insights are not creating the awareness intended to undermine the roles of any of the stakeholders in the water industry. Rather, we deem that critical on how their complimentary roles enhance and/or disrupt potable water supply in Metropolitan Accra, and the prospects of attaining SDG 6. More importantly, such empirically-based insights will provide appropriate basis for targeted policy formulation, as the world journeys to fight against extreme poverty, reduce inequality within and among nations, and attain sustainable consumption and production by 2030.

2. Urban governance and service provision.

Policy prioritization is a wise response to unlimited human needs. This manifests in potable water provision where institutional bottlenecks, weak regulatory mechanisms and insufficient financial resources lead to erratic and unreliable services (Water-Aid, 2005; Ainuson, 2010). In such situations, the pertaining governance philosophy determines who gets what, how and when; and in what form, quality and quantity. In sub-Saharan Africa, the term 'governance' has been corruptly and ideologically abused rhetorically, and in most cases, has been used to camouflage the provision of urban services based on neoliberal policies (Amenga-Etego and Grusky, 2005; Myers 2011). Such policies, whose main goal is to introduce market principles have been coined differently – privatization, decentralization, liberalization, democratization, etc – and entail different modes of service delivery; ranging from private sector participation (PSP) to partnerships

(Adama 2007). They also translate into varied financial architecture, including full cost recovery which arguably is seen as a more efficient method for delivering and managing public utilities in order to bring much needed private capital investment and improve technical know-how (Hall et al., 2004; Ainuson, 2010).

From this perspective a city's governance discourse presents a litmus test for examining outcomes and spatiality of its existing services (Miraftab 2004; Samson 2009). This is particularly so when privatization of utility services remains the most preferred option for most city managers and donors (Smith 2004). Since 2000, the policy has become a consistent feature of urban governance in most Africa cities (Myers 2011); a process which does not fit into Africa's paradigm of urbanisation development, which Pieterse (2013: 4) describes as '*rogue urbanism*'. Africa's urbanization is producing cities where the environmental and health costs are sometimes too prohibitive for water agencies to undertake any progressive water supply planning. These are cities, where according to Hermanson (2016: 2) "Millions of people live in garbage-strewn conditions because there is no municipal trash collection;... surrounded by environmental pollution because there are no or too few toilets.... And too many people are crowded into cramped quarters, facilitating the spread of disease.... simply because there are no other options.... People living in slums know they do not have a recognized "right" to live there, and most recognize that they can be removed at someone's will or whim or something else quite beyond their control".

Suffice to state that the spirit of the SDG's framework that addresses causal explanations of poverty and promotes agency rights and universal equality is at

variance with such market-oriented policies (Simon, 2015). In that respect, the universal commitment of governments to “save the planet”, lift people out of poverty and advance sustainable and inclusive economic growth stands endangered. Ever since the government introduced Private Sector Participation (PSP) in water delivery in 1994 and established the Public Utility Regulatory Commission (PURC) in 1997, gains accrued towards reducing ‘abject and dehumanizing conditions of extreme poverty’ have been mixed and ambiguous (Igoe and Kelsall 2005; Freund 2010) particularly regarding “*public goods*” whose wholesale marketization can actualize a common societal risk – the *Tragedy of the Commons* (Hardin, 1968). The challenge seems to be the inability of the PURC to facilitate convergence among the interests of government, the private-profit motivated sector and civil society, making reliance on the PSP policy as a tool to achieve the SDG agenda controversial (UNEP, 2015).

The overall implications of governments’ water governance remain unclear and especially their spatial manifestations in geographically disadvantaged areas. Certainly, ensuring good governance warrants appropriate regulation, which “is generated within temporally and spatially embedded social contexts” (Goodwin and Painter, 1996: 638). Such regulations are formulated to curtail unevenly developed social practices, which translate into patchy administrative coverage and uneven service provision. Our paper is not arguing that the impact of direct state involvement is always positive nor the role of the independent providers is negative. What is clear nonetheless is that the proliferation of PSP in water delivery in poor

urban areas demonstrates vividly the failure of state agencies to keep pace with urban growth and needs (SDSN, 2015; Simon, 2015).

Our paper argues that most experiences show that regulatory frameworks, encompassing a range of institutional ensembles, formal procedures, laws and social norms operating together in a mutually reinforcing way favour the affluent in the society and perpetuate spatial inequality (Lucci, 2010). Operationally, city authorities may genuinely lack capacity to carry out their regulatory role (Oteng-Ababio 2010) but existing structures conspicuously privilege the rich (Kendie 1999). To achieve the SDG agenda, authorities need to operationalize an all-inclusive government that adopts a human rights-based approach, and adhering to the principles of equality, empowerment, participation and non-discrimination, with a focus on the most excluded poorest groups including persons with disabilities (UNEP, 2015). This involves identifying and addressing all physical, policy or attitudinal barriers. Such an approach will highlight areas neglected by the MDGs and the different logics of our urbanism (less judgmental about pervasive urban poverty) and embrace the creative spirit and resilience of urban informal institutions in re-imagining cities and their future possibilities.

3. Materials and methods

The data presented here come from a **European Union** (EU)-funded project on African Rural-City Connections in four countries - Ghana, Cameroon, Uganda Tanzania and Rwanda. It builds on and extends our earlier fieldwork and data collection, details of which are described by Gough et al (2015). Within each of the project countries, two cities were selected as fieldwork sites: the largest city and a

rapidly growing intermediate-sized city; the rationale being that it is essential to understand and compare the factors driving the urban dynamics. In each city, five residential areas were selected to cover a range of settlement characteristics – older and newer areas, income levels and types of location and population movement. This phase of the study which examines governance structure of disadvantaged communities, for methodological and pragmatic reasons, employed a predominantly qualitative methodology. Principally, qualitative research methods are particularly adept at obtaining data capable of expanding an understanding of the ‘sets of meanings which people use to make sense of their world and their behaviour within it’ (Cohen et al. 2011, p.9). A story-based approach was thus used to elicit accounts of important/notable infrastructure use in relation to several themes: education, livelihoods, healthcare, political and religious life, etc., in order to document the full range of infrastructure uses and associated impacts. This second interview technique involved asking policy makers about the policy implications of our earlier findings.

For this paper, 26 key informants interviews were conducted in Accra, principally with community leaders, officials of the Environmental Protection Agency (EPA), the Ministries, agencies, and organisations responsible for urban infrastructure service management including private providers. Drawing on their long experience, interviewees recounted details of often mundane, day-to-day services and social networking that provided an important counter-balance to the more ‘exceptional’ accounts. The aim was to test emergent governance policy implications from the interview data and establish patterns of services usage and

impacts particularly on low-income communities.

Two-research assistants took hand-written notes during the interview, with as much verbatim detail as possible; these were typed up shortly after each interview, translated into English (leaving untranslatable terms in the original language) and manually coded for themes. The results were analyzed in the light of current literature and detailed personal observation, which was a crucial method in assessing the level of infrastructure availability in the various research communities. Analysis was thematic and primarily inductive, based on the principles of grounded theory, whereby theoretical insights emerge from the data rather than vice versa. Generally, the analysis of the data was underpinned by the fact that achieving water security is a fundamental part of poverty alleviation and forms part of the critical infrastructure that attracts foreign investments (Oteng-Ababio, 2013).

4. Geographies of water services in Metropolitan Accra

4.1. Overview of potable water provision capacity

Many communities in metropolitan Accra are water-stressed. Legally, the Ghana Water Company Limited (GWCL) has the formal and principal responsibility for urban water supply and manages two main sources of drinking water (i.e. the Weija and Kpong dams). With a combined installed capacity of 424,134 m³/day, and an average production rate of 363,417 m³/day these two facilities are currently producing below capacity [86%]. This translates into between 93 and 106 litres/day per capita, which is considerably lower than the average optimal demand (including losses) of 150 litres/day per capita (Verhagen et al. 2008). Significantly, per its

current capacity, the water company is unable to provide potable water to all Accra residents due to production and distribution limitations. The challenge of insufficient capacity compelled city authorities to construct sixty (60) mechanized boreholes to augment supplies. A further response was the inclusion of the private sector in water delivery since 1994. The restructuring saw the establishment of various institutions including the Water Resources Commission (WRC) and a regulatory body (PURC) to regulate, monitor and coordinate activities and future investments in the industry, particularly, with increasing Small-Scale Independent Providers (SSIP) of water. Table 1 presents the various sources of drinking water for households in Metropolitan Accra as captured in the Ghana Living Standard Surveys 5 and 6.

INSERT TABLE 1

The most revealing observation from the table is the direct relationship between increasing use of sachet water with increasing urbanization (with only 8.6% representation in 2005 to over 70% in 2012). Thus, the rapid population growth has brought in its wake a number of entrepreneurial water vendors, selling water either straight from their tap (filling jerry cans, etc.), or packaged as sachets with varying degrees of filtration or disinfection (see Stoler et al., 2013). Many reasons could explain this, but quite obviously, most peri-urban and informal settlements, which have become the dormitories for most economic migrants are also the least connected to **official** water services. In that respect, we can conclude

that though the sachet water industry diverts an unknown quantity of water from the already under-capacity **official** systems, it nonetheless extends improved water coverage deeper into most disadvantage settlements. Accordingly, most households adopt multiple strategies to meet their water demands; e.g. sachet water for drinking, while dams, streams or even sea water are used for bathing and laundry etc.

Interviews with officials of the water company confirm that, just over half of Accra's residents (51.2%) receive water directly from their official household connections. However, a critical evaluation of the claims by the officials raises lots of concerns about the accuracy of the official reports. Our fieldwork points to a possible under-reporting since most residents living in slums, kiosks, containers, markets and other informal areas normally escape the lens of census enumerators, even though many still remain illegally connected. Indeed, the current population of Accra itself has been a source of great controversy and intense debate among researchers (see Potts, 2012; Owusu and Oteng-Ababio, 2015) though this is outside the scope of this article. What however remains obvious is the fact that about 48% of residents rely on unprotected and intermediate service from SSIP. It shows their activities are widespread in disadvantaged communities. Though the small-scale private entrepreneurs (or SSIPs) appear committed to poor communities, yet such presumption appears too simplistic and needs further unpacking, particularly when the general water supply in Accra is described as erratic and unreliable. Lack of such nuanced interrogation can pretend misleading information and ultimately, uninformed policy prescription.

4.2. Governance of water services in Metropolitan Accra

The provision of potable water in Metropolitan Accra has been treated as part of other social services (e.g. electricity; roads; etc;) which cities must provide to make livelihood comfortable. A unique feature of urban water governance is its fragmented and complex nature due to the multiplicity of actors and administrative institutions some with potentially confusing and conflicting roles, interests and responsibility (Oteng-Ababio, 2011). Table 2 lists the key event, actors and institutional framework for water governance in Ghana.

INSERT TABLE 2

In terms of policy, the Ministry of Water Resources, Works and Housing (MWRWH) is responsible for policy formulation and coordination. The ministry also spearheads activities for soliciting funding from external agencies, and advises government on water issues. Operational-wise, the water company is responsible for the production, distribution and management of urban water supply. The introduction of the private sector envisaged that the operation and maintenance of water supply systems were to be ceded to private operators while the company continues with planning and development. In the same vein, the regulator's (PURC) Act, (Act 538), makes the commission an independent body, solely responsible for examining and approving reasonable tariffs, and ensuring quality of services. The Ministry of Local Government and Rural Development (MLGRD), the umbrella ministry for the various **metropolitan, municipal and district assemblies** (MMDAs), is to oversee efficient delivery and operation of urban water infrastructure, while the assemblies regulate tariffs in community-managed piped systems. Meanwhile, the Ministry of Finance and Economic Planning (MOFEP) is to bankroll the activities of the sector, and also mediates between the sector and its foreign donor agencies (Abraham, 2007).

As a way of attenuating public spending, debt and inefficiency in the industry, the government has consistently come under pressure from its donor agencies to privatize the public utility provision (Adank et al, 2011). The water company which has since 1999 been operating as a limited liability company subsequently entered into a five-year management contract in 2006 with Aqua Vitens Rand Limited (AVRL) – a Netherlands company and its Ghanaian subsidiary. Principally, their scope of work included system expansion, rehabilitation of existing water systems, capacity building to enhance the skill and

competence of the local staff (Ainuson, 2010). Five years into the contract, the results remained uncertain and the contract was consequently abrogated (Adank et al., 2011).

The 'success' of the many policy interventions in Accra ironically manifest in the acute water shortage in most disadvantaged urban communities experiences. The spatiality of potable water and poverty levels within the city is presented in Fig. 1. This pattern of water distribution has a direct relationship with the current water governance framework. For example, the PURC is aware of the existence and continuous proliferation of secondary and tertiary providers of water within most low-income communities, these are neither recognized, monitored nor regulated as expected. There are also some indications that the authority of the commission conflicts with that of the Water Resources Commission (WRC), established under Act 522, 1997, to regulate and manage the use of water resources and co-ordinate all policies related to its functions. There also exists overlapping roles between the ministries of local government and finance in relation to the control, disbursement and general management of external funding in the water sector. It is also not clear where the authority of community water and sanitation division ends and where that of Ghana water company begins particularly in the peri-urban areas. These administrative ambiguities compromise the fate of residents 'caught in the web'.

INSERT Fig. 1

*Supply duration means no of days per week when water is supplied
Source: The authors' Own Construct based on data collected from GWCL.

The study significantly reveals that the water company ordinarily responds only to its 'customers' and unless one is officially connected to its mains, one is not recognized as a customer though one consumes water. This has festered a variety of intermediate, privately managed service providers, servicing disadvantaged residents on their own terms and charges. These tend to be over and above official charges that are based on an increasing block tariff (IBT) system whereby costs per litre rise as consumption increases at the meter. The applicable water tariffs since July 2015 is provided in Table 2. In addition, the company levies 1% and 2% on the total bill of a consumer's for fire fighting and rural water development respectively.

Table 3: Ghana Water Company approved end user water tariff (June, 2015)

INSERT TABLE 3

Source: PURC, 2015

Apart from the discriminatory charges, our interview participants highlighted the perils of the multi-faceted governance framework for water pumps in Accra. These included the difficulty in getting connected to the water company's main grid which emerged as the most recurring theme, mentioned by 8 of every 10 respondents. In terms of processes, it was explained that a prospective client must obtain an application form, fill it and attach a building permit or an indenture of the premises; a requirement many informal dwellers could hardly provide. A forty-year mechanic who also doubles as a catchiest in Ashaley Botwe noted:

And even when they accept your form, you must pay the full cost of installation [close to GH¢700 or \$164.14] after which you will officially have to wait weeks and months unless you are prepared to make additional informal payments.

A landlord in Gbawe described his experience as

..... not only frustrating and shameful but despicably worrying and time consuming.

An interviewee from Abuja teasingly remarked:

The commitment of the authorities to meet our water needs is reflected in the way service lines are connected. Here, most connections are installed in ad hoc ways, mostly illegally; tapping into the distribution mains at different points and are laid on or close to the surface and can be easily damaged and contaminated.

Our findings resonate with studies that implicated official procedural demands including connection fees as barriers to access particularly for low-income households' ability to connect to the utility mains (UN-Habitat, 2011). The proliferation of independent service operators since 2000, without any efficient regulatory policy framework was identified as prominent concern and a worrying outcome. Most participants (about 75%) including public officials attributed this failure to the authorities' perception that the role of private providers is a short-term fix to urban water inadequacies and therefore will disappear with time. However, there is growing evidence that these private entrepreneurs have played and will continue to play an important role in the Accra water sector for many years (see Ainuson, 2010). Relatedly, it is envisioned that the authorities feel more

comfortable working with the larger enterprises than the heterogeneous smaller-scale providers. Further, aside the perceived official neglect, international technical standards also do not recognize the activities of these small-scale operators (Water Aid, 2005). This has deepened the chasm of inequality between beneficiaries of official direct services and those depending on private providers, whose services are superficially antithetical to the equity and social justice tenets of SDGs.

From all indication, the urban poor are the hardest hit by the current framework. This confirms earlier studies which showed many of them rely on public standpipes or water vendors for their daily water needs, paying 10 to 20 times more than those connected to official network (Oteng-Ababio, 2013; Melara et al., 2013). In Accra, a typical 18 litre jerrycan full or Kufuor gallon costs GH¢0.20 (\$05) with residents in Ashaley Botwe sometimes paying up to GH¢ 0.50 (\$12) for the same quantity. Our results further reveal that the lack of attention creates a serious regulatory gap, especially from the point of view of residents in disadvantaged communities. Thus, adopting policy interventions that regulate the quantity, quality and prices of the independent providers can close this regulatory gap. There are enough evidences that formal recognition will make it easy for small-scale water providers to be effectively organized into cooperative associations through which their activities can be better regulated.

5. Spatiality of potable water services: keeping SDG 6 in focus

The geography of potable water services in Metropolitan Accra resonates with a remark by an American journalist and author, David Grayson (1870 - 1946) that “What we get in the city is not life, but what someone else tells us about life”

(quoted in Clapp, 2014: 148). Typically, water resources, both in terms of quantity and quality, are not limited within Accra Metropolis (see Ainuson, 2010). However, ineffective governance framework has made water service delivery poor, resulting in drudgery, inconvenience externally costly for a large section of the urban population. The current supply chain and the associated cost implication indicate that residents in disadvantaged settlements, where urban poverty is increasingly concentrated, people live in truly woeful conditions, having been physically, economically and socially separated from the core. These are places where water from public sector sources is non-existent, compelling residents to rely on independent providers which are prohibitively expensive (see Fig. 2), or depend on rivers and lagoons whose quality have been severely compromised (Blacksmith Institute, 2013); and groundwater which is often too saline (Melara et al, 2013).

INSERT Fig. 2

Source: Adapted from Adank et al. 2011

Coincidentally, the geography of water poverty in Accra is closely related to the level of planning and the degree of a household's wealth. In conformity with earlier studies (see Water-Aid, 2015; Ainuson, 2010), three broad cohorts are discernable from Fig. 2 (though different permutation exists on the ground with different cost implications); the first group is made up a small minority of residents (10%) of normally restricted, priority users who are connected directly to the GWC water supply network. They enjoy 24 hour-services a day, and pay for water at the official rates, ie, between \$0.0019² and \$0.007 per jerrycan. The second cohort involves a larger proportion of residents who live in areas which are connected to official network but go through rationing regime. These people have to supplement their water needs through independent providers at prices between \$0.15 and 0.25 a bucket. The final group, the majority but mostly the poor and vulnerable earning less than a dollar a day, living in slums/low-income and peri-urban areas, include those who were connected but disconnected due to non-payment of bills as well as those not connected at all. Like some residents in the second cohort, they depend on independent vendors for their water needs or the polluted pond and streams. To such residents, who normally end having large household size, water is not only essential but expensive commodity (see Melara et al., 2013).

The direct and indirect costs that residents and governments pay for such a dichotomous framework may well be higher than the costs of ensuring that strict hygiene standards are adhered to by providing continuous potable water for all (UN-Habitat, 2011; Simon, 2015). For example, we observed that in the midst of

² At the time of the research, US\$1.00 was GH¢ 4.27950

water poverty and deprivation, the disadvantaged communities adopt different coping strategies to meet their water needs. For those on the coast, for example, the sea becomes a crucial asset as seawater is used for bathing and just a few cups of fresh water are used to rinse (UN-Habitat, 2011). Residents in the city centre also rely on wells and other polluted water bodies (Songsore, et al. 2014). In Adentan (Accra) for instance, the “Japan Lake”, created by Japan Motors Company as a pond to provide drinking water for its ranch, used to be a major source of water supply for the residents (UN-Habitat, 2011). Indeed, data from the stakeholder interviews indicate that nine in ten respondents in low-income and peripheral areas rely solely on SSIP sources for their water needs.

The results also indicated that the irregularity in public sector water supply has made the use of overhead reservoirs a common practice in middle-income and some affluent neighbourhoods with some relying on private water tankers in times of need (see Melara et al., 2013). Aside, the irregularity of supply, we established that the ‘professionalism’ with which the private sector responds to water related-services typically motivates them to focus on customers with household connections rather than the type of services that would meet poorer residents’ needs. This complicates the general perception that only the poor use the services of independent water providers. The finding is consistent with earlier studies (see Boadi, 2004; Songsore et al., 2014) which opined that water availability in Accra is evident, though the issue of availability is broader and more nuanced than merely ‘getting water’ when needed; suggesting that water availability must be considered in terms of cost, quality and quantity.

The 2010 population census affirmed our results as only 43% of Accra's population uses indoor household water connections (GSS, 2012b). This implies that about 57% of Accra's population are paying higher price for the authorities inability to respond positively to the infrastructural needs of the rapidly urbanizing cities. World Bank studies indicate that between 2000 and 2010, Ghana's infrastructure challenges needed a sustained expenditure of almost US\$2.2 billion per year, split evenly between investment, operations, and maintenance (World Bank, 2010), or an annual spending of \$85m to achieve the MDG target on water and sanitation against the then spending of just \$17m (Water-Aid, 2005).

From all indications, such financial requirements grossly exceeded the existing capacity and commitments of both the government and its development partners. The deficiency has created a tale of two cities - a well-serviced city occupied by the rich few and a poorly serviced one occupied by the poor majority, where urban water is both patchy in hardware and unreliable in flow. However, as indicated residents in disadvantaged communities do not wait passively for irregular and unreliable services from the public sector to come to them; they access water informally: using the services of private operators creatively and strategically. They exercise a de facto right to an array of independent possibilities (largely illegally), while bearing individual responsibility for getting it right. A participant in Accra New Town cynically remarked: *"their practice fits well within the neoliberal rhetoric that preaches the idea of self-empowerment"*. The danger in such a shift in responsibility is not only the accompanying health risks and their uneven distribution, but can also ignite the kernel of greed in some independent producers.

Understanding these embedded constraints is crucial in keeping the dreams of SDG 6 alive.

5.1. Some potential threats to achieving SDG6

First, our study confirms a discrepancy between the optimal water demand (150 litres/day per capita) and current production levels (106 litres/day per capita) mainly because of under-capacity performance of the Kpong (88%) and Weija (83%) dams. Even when working at full capacity, the total demand still slightly outweighs the systems installed capacity. The real challenge, however, lies in the longer term when demand is expected to increase considerably (i.e. about 6.5 times by 2030 of 2007 production levels) (Verhagen et al., 2008). The future becomes bleak with increasing annual rates of unaccounted for water, emanating from physical (27%) and economic (33%) losses, and representing lost income of about \$140,000 per year (Water-Aid, 2005). The threat appears even worse when the potential impact of climate change on raw water resources is considered.

Second, and quite significantly, most official sources attributed the physical losses to the bad state of the distribution infrastructure, due to poor maintenance, replacement and rehabilitation culture. Nonetheless, a critical assessment of the situation particularly regarding the company's financial sustainability put the issue back to the doorsteps of GWCL not least because of its poor debt recovery rates. Without doubt, there are high commercial losses, yet there is compelling evidence (Ainuson, 2010) that these are largely attributable to ineffective revenue collection procedure and illegal consumptions and connections. We observed some residents frustratingly struggle for months to get connected to GWCL mains due to

complicated procedures and legal boundaries including the over 46% of residents living in slums and informal settlements. There is also the issue of the disproportionately skewed connection system which works in favour of the affluent few with those in the periphery of Accra, having to use expensive secondary and tertiary vendors, as shown in Figure 2. Put differently, per the current legal and financial barriers, only the wealthier strata of the population (about 40%) profit from the considerably lower rates of GWCL.

Further, the presence of unregulated private entrepreneurs, providing different services in different neighbourhoods at different rates, results in different competitive responses some of which can spell a *Tragedy of the Commons*. Justifiably, the rates charged by these private entrepreneurs, whose pricing and service quality are neither formally recognised, registered nor regulated are higher than the GWC tariffs partly because of the extra costs they have to incur in order to provide the service. Fundamentally, the activities of the private providers can help address the issue of water availability, but it does not guarantee water quality. Even, the perceived quality of water from official source is contested as widespread leakages and pipe bursts as a result of illegal tapping into the company's mains, coupled with intermittent supplies may inadvertently draw contaminants into the pipelines (see Songsore, 2014).

Indeed, during the key informant interviews, the quality of water supply by some water vendors comes to the fore. About 53% of private water tankers, for example, confirm servicing estate developers in the peri-urban areas by drawing water from the many "polluted" ponds, streams and wells. They, at the same time do

respond to residential SOS calls for 'potable water', without properly washing their tankers. Obviously, the quality of such water remains uncertain since the tankers do not undergo through any proper cleaning regime after carting surface water to developers, especially when most surface water are said to be highly contaminated (Blacksmith Institute, 2013). Significantly, we observed that some of these tanker drivers also add 'alum' [*hydrated potassium aluminum sulphate*] to reduce the actual turbidity of the water by settling sediments at the base of the tanker before delivery. In that respect, the alum makes the water more acceptable to users physically but does not remove all the pathogens and other contaminants.

It is believed that these are just the high-profile end of a spectrum of injustices endured by poor residents (and some by rich residents as well), which if not resolved can increase the likelihood, if not the certainty, of a failed SDG 6 agenda. The evidence shows that the use of independent providers arise because of a need for 'water services' but if such a desire is not properly and formally recognised, registered and regulated, it can only become a shorthand for compromised services. The findings have complicated earlier representations where residents in affluent areas were exclusively but erroneously perceived as enjoying quality water services. Rather, our evidence calls for caution since water may be physically clean (courtesy the use of alum), but its content could still be compromised mainly because of various interactions and associations along the supply chain before reaching the consumer. The simple message is this: to tackle extreme poverty, we do not have to reduce our quality of life, but we have to change the way we govern.

6. Concluding remarks

Inappropriate potable water governance system is a significant threat to public health. Building on the foundations set by the MDGs, our study affirms the centrality of water quality, sufficiency and continuity of supply in attaining SDG6. These must not be compromised since all urban residents want an efficient, safe, reliable supply of water at a reasonable cost now and in the future, or “every thing else is of markedly less importance” (Deliberative research concerning consumers’ priorities for PR09, 2008-REF?). Crucially, in the governance of urban water services, context is as important as the anticipation of the future. In this sense, probing whether the World Leaders’ “leave no one behind” principle underpinning the SDG document can be achieved is to ask the question the wrong way. Instead, we need to consider in what ways the provision of water services is institutionally shaped, and addresses the challenges and aspirations of the poor including persons with disabilities. Ultimately, participation mechanisms, social dialogue, and leveraging power should be the norm rather than the exception. In most cases much emphasis is placed on water availability at the expense of accessibility, cost and quality, which are equally important.

Ultimately, the problem of inadequate water supply is not limited to Accra. It permeates most cities in sub-Saharan Africa, and has attracted different strategies of attenuation. Usually steeped in mainstream neoliberal policies, such attempts are normally fuelled by cost recovery agenda, mostly orchestrated, pushed and dictated by the World Bank as a way of reducing instability and government expenditure on

utilities (Gilbert, 2012). While such policies can achieve the goal of stabilizing the economy, they totally ignore or superficially consider the more complex ramifications of the alternatives available to those under-served or completely ignored, which as our study shows can sometimes be dire. We agree that water supply systems should be customized to local needs to be successful (Songsore, 2008; Oteng-Ababio, 2014), but also believe that the regulatory of the state should not be compromised to ensure the SSIP adopts the best practices and avoid mistakes.

With the growing influence of private water actors, and some even becoming key in planning process, their roles cannot be continuously ignored and hope to address inequalities across cities. If governments are to succeed in *pulling everybody along* then the policy focal lenses must change to emphasise, interrogate and understand the ramifications of the operations of the various actors in the industry and factor same in public policy discourse and avoid complacency. Unless the intolerable system is changed radically and rapidly, the *tragedy of the commons* may be a reality, as the disadvantaged will fight for inclusivity at all costs, perhaps with increasing passion. Such costs normally reverberate through the entire urban environment (poor and affluent neighbourhoods) as health care cost increases and production decreases because of lost of job hours. Ensuring water security within the entire urban space should involve innovation and pragmatism and should be devoid of dogmatic theories which only highlight market principles.

There are glimmers of hope in recent times as most government officials now appreciate the need for capacity building through planning with the poor, sharing

experiences and institutional strengthening without accepting a dichotomous understanding that suggests the informal sector to be separated from and parallel to formal activities. Relatedly, an association of private water producers has been formed in Accra though still at its embryonic stage. We hope the government encourages, supports and monitors such associations and their activities in order to bring some sanity in the industry. Our approach should help solve many problems simultaneously especially as the urban population swells and cities become increasingly resource-constrained environments. We are hopeful that water-related capacity development, both at the individual and institutional levels, will be fundamental in the realization of SDG of ensuring the availability and sustainable management of water for all.

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