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Framing community entitlements to water in Accra, Ghana: A complex reality

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ABSTRACT

Entitlements are generally defined as the commodities/resources (material and non-material), through which one can establish ownership or command access to resources. Applying this analytic to a case study of everyday water access in Accra, Ghana, we evaluate community water entitlements in two low-income communities with different locational and socio-cultural characteristics. We also evaluate how different entitlements to water map against variable dimensions of vulnerability. The study uses a mixed methods approach including a 200 household survey, focus groups with community members, and semi-structured interviews with local opinion leaders. Our results indicate that in both study communities, an entitlements approach provides a significantly richer portrait of water access beyond availability of piped water infrastructure. Among other factors that are important to everyday negotiations and entitlements related to water access, it is important to consider familial and kin networks, water storing options available to households and vendors, the distance and waiting time to fetch water, and local leaders' perceptions of water issues, particularly how these compare with broader citizen understandings. In this way, an entitlements approach broadens the perspective beyond infrastructural endowments (e.g. piped water), to include a range of other socioeconomic, socio-cultural and local institutional characteristics. Drawing on the empirical examples, as well as related conceptual debates, the study questions how water access is defined, and how water governance processes might benefit from a broader understanding of entitlements, as well as links to differentiated vulnerabilities, notably in times of water-related stress or scarcity.

1. Introduction

Over the past decades, access to potable water in Ghana has improved substantially based on indicators such as those highlighted in the Millennium Development Goals (MDG) progress report and other national level data (GSS, 2013; WHO/UNICEF, 2012). Even before the MDG target date of 2015, a significant increase in access to improved drinking water was recorded countrywide; moving from 53% in 1990 to 86% in 2010. In urban areas, access to improved drinking water increased from 84% to 91% over the same period (WHO/UNICEF, 2012). The WHO/UNICEF Joint Monitoring Programme for Water-supply and Sanitation (JMP) defines improved drinking water sources to include piped water in homes, yards, or neighbour's houses, rain-water, and covered boreholes and wells (WHO/UNICEF, 2012). In light of these numbers, in 2012 Ghana declared success in meeting the MDG for water in advance of the deadline, even as the sanitation goal remained out of reach.

Many concerns have been raised about WHO/UNICEF's definition of improved water access which emphasizes particular water sources as more healthful and reliable, including a strong focus on piped water as paradigmatic of what constitutes an 'improved source'. Recent works have challenged these understandings, particularly the suggestion that 'improved sources' will necessarily contribute to well-being and healthful outcomes (Mahama et al., 2014; Songsore, 2008).[1] In Accra, studies have called for greater attention to be paid to the specific pathways through which access is negotiated (Mahama et al., 2014; Morinville, 2012; Songsore, 2009) to better understand implications and outcomes for water quality, affordability, health, and equity

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[1] Mahama et al. (2014) redefine the WHO definition of improved water sources as 'those with little likelihood of contamination with faecal matter and other pollutants' (p. 323). Using this definition and with a sample of 1500 respondents distributed across migrants and indigenous communities across Accra, those authors found that only 4.4% (piped water in dwelling 3.3 and bottled water 1.1) of the respondents had access to improved drinking water compared to 39.6% using the WHO definition. Moreover, the study found that 88.7% of respondents had access to improved water for domestic uses compared to 98.3% using the WHO's definition. The study suggested that using the WHO definition was invalid for low-income localities in Accra.

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concerns (Mahama et al., 2014; Songsore, 2008). If we take these broader studies seriously regarding the diverse pathways and modalities of water access, we can appreciate the possibility that extending and improving access need not rely entirely on infrastructural improvements, but might also involve social and institutional considerations, as well as efforts to work with existing modalities of access to improve water quality, reliability, and affordability. In this sense, needed improvements might be realized by recognizing existing modes of access, and working with those structures and opportunities, which would likely include, but not be limited to, municipal piped infrastructure (cf. Bakker, 2003). In Accra, specifically, it has been noted that the piped water network is often erratic and unreliable, leading residents to engage in diverse coping strategies such as shared connections, informal resale and vending, or illegal tapping of pipelines (Peloso and Morinville, 2014; Ainuson, 2010; Songsore, 2008). In addition to the ways that unreliable infrastructure leads residents to engage in a range of informal connections and relationships to ensure access, other studies further suggest that the ways in which the poor access water affects the quality of water, also complicating the very definition of what 'access' might mean (Mahama et al., 2014; Songsore, 2008). For instance, Songsore (2008, p. 8) suggests that "given the widespread practice of unhygienic water handling and storage in deprived low-income areas, it is not enough to focus on bringing "water to the tap"; what is happening "between the tap and the mouth" is also critical in determining health outcomes". Mahama et al. (2014) also suggest that beyond the focus on improving the quantity of water supply, policies to address water access should consider what users themselves consider to be good or bad sources of water and the factors that constrain or enhance access to good quality water in line with those understandings. Our work in Accra confirms that residents access and store water in multiple ways, and that these practices are often well beyond the scope of existing efforts to ensure water quality, or to regulate price, posing a direct challenge to the regulatory capacity and oversight functions of the GWCL,[2] PURC,[3] or even local water boards.

Building on the above studies, we argue that it is important to understand and recognize that in low-income communities in Accra where water is insecure, modes of access vary significantly and thus, each community's coping strategies are different—with a diverse patchwork of access mediated by varied conditions and relationships, including infrastructures, socio-economic dynamics, as well as socio-cultural norms and community values. As large bodies of work in political ecology, and environmental justice have emphasized 'civil society is an arena for social contestation where power struggles often affect which groups control which resources' (Amin, 1996). As such, it becomes imperative to understand the precise pathways through which community members negotiate and command access—the crux of an entitlements approach, as described in further detail below. In this study, we compare two communities with distinct social, demographic, and historical features to better understand the diverse pathways of access. We then consider how these specific modes of access might also condition differentiated vulnerabilities in the face of current (or future) conditions.

Entitlements are generally defined as bundles of ownership rights, endowments and or assets; economic and social, that specific individuals, or households, draw on to enable "sufficient access to resources" (Sen, 1981). For this analysis, we evaluate community entitlements to water by focusing on how endowments (at the community level) can constrain or enhance functioning and capabilities for secure water access. We aim to characterize, in a broad sense, "things that people have acquired such as land, labour, knowledge, rights…. that when…. combined with institutional arrangements, determine people's entitlements" (Mehta, 2006). The analysis is organized around four interdependent categories of endowments important for our study sites, as revealed by our mixed method approach in both communities: socio-cultural factors, socio-economic factors, community water assets/water infrastructure, as well as values and knowledge. While we are not able to analyze these factors in a comprehensive sense, and there are undoubtedly other elements important for a broad understanding of entitlements, we find that these dimensions are helpful to enrich our understanding of water access and vulnerabilities in these contexts. Our analysis of **socio-cultural factors** includes cultural/ethnic homogeneity and household/compound water practices such as water sharing; **socio-economic factors** include income levels, size of family and land ownership; for **community location and water infrastructure**, we analyze patterns of water availability, and location in relation to the piped water network; for **community values** our analysis considers the role of local leadership in addressing local water problems including having a shared understanding of the state of water access with residents (i.e., alignment between knowledges). Analyzing these factors from a 200-household survey, we ask, how do differentiated water entitlements and community endowments condition diverse pathways of water access, and linked vulnerabilities, in two distinct relatively impoverished sites of Accra (Madina and Ga Mashie)? Insights from this study provide an important foundation from which to consider future policies aimed precisely to extend secure and affordable access, or to mitigate against vulnerabilities that might be anticipated with ongoing or future water scarcities (Gosling and Arnell, 2016).

Following this introduction, the next section (Section 1.1) explores the determinants of water access in our two study sites. Here we detail what an entitlements approach to water involves, drawing on key contributions from the literature. In Section 2, we provide an overview of the methods for data collection and analysis. In Section 3, we detail results of the study. In Section 4, we specifically discuss the comparative element of the work, highlighting what can be learned by comparing two different communities in terms of key entitlements and associated vulnerabilities.

1.1. What determines access to water in low-income communities? A review

In many developing countries, governments' responses to urban water provision challenges have relied heavily on technical expertise, often focused on increased capital investment, including efficiency improvements through Public-Private Partnerships (PPP), and similar efforts (Ainuson, 2010). While there has been a de-emphasis on funding infrastructure for water provision from lending agencies such as the World Bank in the past decades (Bakker, 2003), instead pushing PPPs and other mechanisms that might fund these efforts through other means, there has nonetheless been a long-term focus on large scale infrastructure, including reservoir building, and piped water systems in response to the urban water crisis, often dominated by engineers and other technical 'experts' (Baker, 2015). The specific situation in urban Accra involved a privatization effort with the entity AVRL (Aqua Vitens Rand Limited, 2006–2011) required as part of loan conditions from the World Bank and IMF (Harris, 2013), as well as more recent PPP arrangements that have brought desalination and other infrastructure onboard to provide water to some of Ghana's underserved communities, including Teshie (Andoh-Appiah, 2015).

At the global level, the MDGs, the International Decade for Water and Sanitation, and the recent policy emphasis on the Human Right to Water and Sanitation, have all contributed to the push for increased piped water access. To this point, it is estimated that almost two-thirds of total official development assistance (ODA) for drinking water and sanitation globally is targeted at the development of large piped water systems (WHO, 2010). However, in many developing contexts, piped water systems have not only been criticized for failing to provide water for those in greatest need (WHO, 2010; McGranahan and Satterthwaite,

[2] Ghana Water Company Limited (GWCL) is the main water utility company and is responsible for the planning, development and maintenance of water supply systems in urban communities in Ghana.

[3] The mandate of the Public Utilities Regulatory Commission (PURC) is to set tariffs and quality standards for the operation of public utilities including water in Ghana.