

## **Improving Water Security for Peri-Urban and Low Income Settlements of Sub-Saharan Africa: The Role of Community-Based Institutions**

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This contribution draws heavily from Adams, E. A. & L. C. Zulu (2015) Participants or customers in water governance? Community-public partnerships for peri-urban water supply. *Geoforum*, 65, 112-124.

The piece directly engages the question: “*What are the existing/emerging efforts to create governance institutions for a more sustainable water supply*”—in particular for peri-urban and informal settlements”. It uses a case example from Malawi to highlight the opportunities and prospects for enhancing access to potable water for peri-urban areas through community-based institutional arrangements. It centers largely on peri-urban water-access in Sub-Saharan Africa yet speaks broadly to developing countries.

### **1.0 Urbanization, Peri-Urbanization, and Water Crisis in Sub-Saharan Africa**

Sub-Saharan Africa is urbanizing at a rate faster than any world region. The current urbanization rate (exceeding 4 percent) is twice faster than the global average. This trend will undoubtedly continue at exponential rates. The United Nations Habitat reports that over the next two to three decades, over 80 percent of the population growth in Africa will occur in urban areas (UN Habitat 2014). The region’s high urbanization rate has already been associated with undue pressure on public services, creating and expansion of informal settlements, and increased urban poverty (Kayizzi-Mugerwa, Shimeles, and Yaméogo 2014). Sub-Saharan Africa (SSA) currently has the largest proportion of urban population in slums globally—over 71 percent (Ramin 2009). As the region continues to urbanize, with the region expected to reach 2 billion by 2040, and 3 billion people by 2070, poverty and proliferation and expansion of slums are likely to become even more widespread (UN Habitat 2014). This phenomenon is not peculiar to Sub-Saharan Africa. It broadly reflects current trends in developing countries and calls for urgent action.

The implications of the unprecedented rates of population surge in cities for water supply, especially for peri-urban areas, cannot be overlooked. The region has already showed deficiencies in efforts to improve clean drinking water supply. For example, in spite of the global achievement of the Millenium Development Goal on water, Sub-Saharan Africa failed to achieve its goal of halving the total population without access to clean drinking water. The continent’s rising population will not only increase demand for potable water; it will put undue pressure on freshwater resources and infrastructure. As predicted by recent hydrological models, per-capita

freshwater availability for most cities in the developing world, including the Sub-Saharan African realm, will decrease substantially and lead to unprecedented shortages (McDonald et al. 2011).

Access to clean drinking in informal and peri-urban settlements of developing countries, particularly in Sub-Saharan Africa is not only woefully inadequate, it is complicated by issues of insecure tenure, overcrowding, poverty, and poor sanitation and housing conditions (Sheuya 2008), leading to high incidences of water borne illnesses such as diarrhea and cholera (Karn and Harada 2002, Kimani-Murage and Ngindu 2007). Continuous influx of people from rural to urban areas, and the expansion of the peri-urban landscape will continue to pose a daunting challenge—ensuring access to safe and affordable potable water with limited, weak, and old infrastructural systems most of which have existed since the colonial era (Njoh and Akiwumi 2011). Most of the old infrastructure have barely been updated or repaired yet have to serve populations much more than they were intended for. As a result, peri-urban residents have used, according to the literature, diverse arrangements to meet their daily water needs including relying on water vendors for water often with poor quality, tanker trucks, illegal connections, and rainwater harvesting (Dagdeviren and Robertson 2011). Yet there is no question that these avenues do not adequately satisfy growing peri-urban water demand, both in quality and quantity (Kimani-Murage and Ngindu 2007).

In the next decades, the majority of urban dwellers in Africa will likely live in overcrowded slum conditions as more people move to cities in search of economic opportunities (Chaudhuri 2015). With soaring populations, it remains a huge challenge for governments to supply water established central urban neighborhoods because of insufficient infrastructure, much less to peri-urban neighborhoods where the haphazard layout makes the extension of main water pipes difficult or even impossible. In addition to these complexities, low-income areas are often left out of government institutional planning for fear of giving people legitimacy to continue living without legal tenure. As new low-income areas form around cities, and older low income areas expand, governments both at national and municipal levels are faced with the problem of extending water supply with the limited infrastructure.

Efforts to enhance access to potable water has been growing over the past few decades, and yielded some broad results across the globe. At the beginning of this year, The Joint Monitoring Program (JMP) celebrated that 96 percent of the global population have access to improved water sources, a major milestone. However, there is growing debate about whether or not the methodologies for estimating water access are sound, including whether the global figures overstate and therefore mask the gravity of water inaccessibility. Current estimates of access fail to adequately account for important factors such as functionality of water points or periodic outages. Quality is implicit in improved sources although even clean water is often contaminated through transportation and household handling practices (Boateng, Tia-Adjei, and Adams 2013). Emphasis has been on round trip travel time and distance, yet emerging evidence shows that waiting time may be more limiting factor of access than distance especially in peri-urban settlements (Adams—unpublished).

Malawi is a good example of how urbanization and resultant proliferation of informal settlements creates a dire need for safe water. Out of the nearly 3 million dwellers in Malawi for instance, the majority (76 percent) lives in peri-urban and informal settlements. In Lilongwe, the capital city, the population has seen a meteoric rise in population from 19,000 in 1966 to approximately 700,000 in 2008 (GoM 2008), projected to continue growing exponentially into the future. The country's urban water access and coverage levels seem to have stalled from 2000 (fig 1) and is actually projected to decrease in the future. However, there have been marginal improvements in access albeit insufficient to keep pace with the rate of population surge in the urban areas.

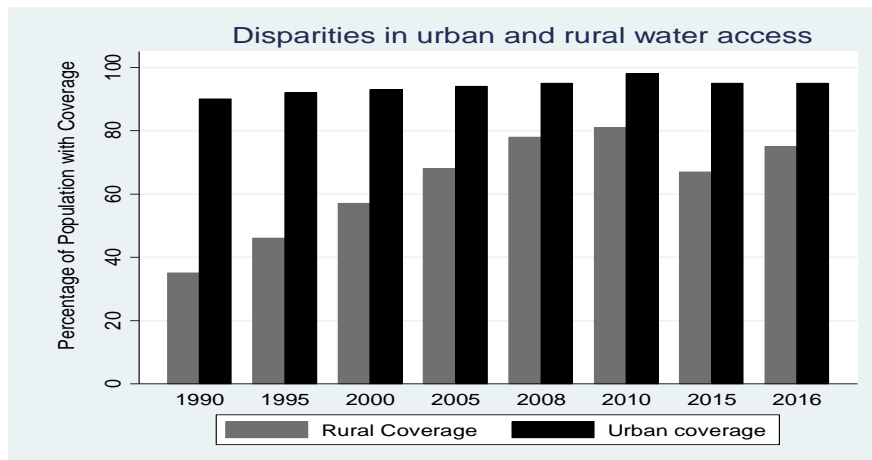


Fig 1. Trends in Urban and Rural Access to Improved Water Sources in Malawi. Data Source: Malawi Welfare Monitoring Survey (NSO, 2011; WHO/UNICEF 2015)

## 2.0 Towards Community-Based Approaches for Improving Peri-Urban Water Access

Aside from the challenges mentioned earlier about the peri-urban terrain itself being a limiting factor for increasing piped-water connections, government utility agencies and private companies often have no financial incentives to provide services given the high upfront financial and infrastructural investments, with no guarantee of cost recovery. With limited economic viability for water network expansion to peri-urban areas, private and public utility agencies tend to cherry-pick cities over rural areas, and wealthy urban areas over low-income neighborhoods where the poor pay more per unit volume of water and are often systematically marginalized and underserved even more than in rural areas. With the failure of both public and private water-supply systems to improve access for poor urban/peri-urban communities, attention has turned to alternatives involving diverse partnerships among public, private, non-governmental organizations (NGOs), and water-user committees (Gutierrez 2007, Nzengya 2015). However, do these approaches hold promise for addressing the growing water needs of peri-urban areas? Little is known about whether they do, and if so, what trade-offs exist for making them viable alternatives.

Partnerships, with communities at the helm while drawing technical expertise from existing utility companies, open avenues for understanding how alternative community-led systems operate, and whether or not they hold promise for addressing peri-urban water-insecurity. In Kenya, recent evidence shows that a delegated management approach (DMM) to water kiosks management with communities lowered the cost of water and improved revenue collection (Nzengya 2015). In any case, growing international consensus seems to favor community-based over centralized public or privatized models for their benefits including participation, empowerment, ownership, and sustainability (Cleaver and Hamada 2010). However, actual outcomes of community-based (CBNRM) initiatives have been mixed, showing both successes and failures in rural areas, and prompting claims that it largely remains a hypothesis (Tacconi 2007).

The case of Malawi provides a good experiment to understand whether or not community-based water governance holds promise for extending water to peri-urban and informal settlements. The Malawi government, promoted the formation of Water User Associations (WUAs) in 2006 under broad decentralization reforms to attempt addressing poor water access for informal and low income settlements. WUA's emerged as a replacement for previous management models by private operators and direct management by the Lilongwe Water Board, the utility company

in charge of supplying water to the Lilongwe city. WUAs were formed in part because of the financial mismanagement that characterized previous management models and led to widespread water-kiosk disconnections from the water supply network. With the beginning of a widespread decentralization exercise, our goal was to understand whether community-based approaches, traditionally and historically used in rural areas, have prospects for enhancing peri-urban water supply. The next section outlines some of the lessons drawn from Malawi's case and what it means for the search for alternative arrangements to replace or supplement centralized, largely government-led approaches for water delivery to informal settlements.

### 3.0 Lessons and Looking Forward

Malawi's case of water supply through a community-delegated system suggests prospects and opportunities for improving water supply to peri-urban and low income areas through community-based associations. Even so, it involves tradeoffs with broader social/empowerment goals and popular tenets associated with community-based approaches, such as participation, benefit sharing, and empowerment. Community-based WUAs generally achieved financial solvency and stability, generating enough surpluses to pay all or most of their past water debts within 3-5 years, and generating locally significant employment. However, WUA autonomy in decision making and user participation in WUA activities were low. Most users (contentedly) participated as paying customers rather than active WUA members. Future (peri-) urban community efforts should anticipate these tradeoffs and be flexible to a plurality of forms of participation while simultaneously seeking creative ways to enhance participation and broaden social benefits. Successful community-based approaches for peri-urban areas will require a delicate balance between water-supply and social goals. Hence, while these models are in no way panaceas, they can improve access at least initially by enhancing financial management and accountability. Nevertheless, low capacity on the part of communities remains a major limitation. Above all, there is a lot of potential and avenue for research to understand how alternatives to orthodox, centralized approaches, could help advance sustainable water access for peri-urban and informal settlements in the context of growing population and urbanization in developing countries.

***WUAs ultimately have to rely on water from the government utility company, in this case the Water Boards. The WUAs do not have the capacity to provide their own infrastructure or treated water. Essentially, the WUA system is a community-public partnership arrangement where communities provide financial management and demand accountability from the utility while the utility provides technical expertise, fix system-breakdowns, and assume oversight functions.***

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