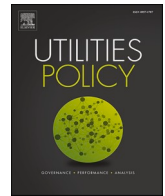


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Toward equitable urban water supply and sanitation in Dar es Salaam: The dialectic relationship between policy-driven and everyday practices

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ABSTRACT

Many cities in the Global South continue to struggle with providing services with increasing inequalities in the distribution of and access to safe drinking water. For lower-income inhabitants, access changes over time and is shaped by the interplay between practices driven by policy and the range of diverse everyday practices in low-income areas. Existing practices are entangled with the evolution of the natural and built environment in which human-nature interactions are continuously negotiated in situ and over time through different infrastructure and service configurations that can alter water flows, social relations, and practices. Focusing on the case of Dar es Salaam, this paper examines policy-driven practices by the utility (and other key players in formal service provision) and their interaction with everyday practices to spell out implications for urban (in)equality.

The paper draws on research grounded in a normative perspective based on principles of environmental justice, emphasising agency-structure debates and intersectionality scholarship. The approach enables a critical multi-scalar analysis that reveals differential abilities and vulnerabilities among poor women and men toward enabling and restraining structural processes and conditions, whereby time, space and socio-environmental relations intersect with and influence infrastructural and service configurations and vice versa. Findings confirm a dialectic relationship between policy-driven and everyday practices with multiple examples where practices reproduce, reinforce, or distort existing inequalities. However, the findings further show instances of more transformative practices that challenge unjust processes and outcomes toward more equitable service provision.

1. Introduction

Many cities in the Global South continue to struggle with providing services, further accentuated by climate change, with increasing inequalities in the distribution of and access to water supply and sanitation. Service provision inequalities are embedded in time and space and firmly rooted in the historical development of a place. In Africa, imprints of colonisation have affected the provision of services in cities and are still visible today. Dar es Salaam, a city with more than five million inhabitants on the East coast of Tanzania (and East Africa) (see [Fig. 1](#)), was racially zoned and planned during German and British occupation. Africans were confined mainly to overcrowded shanties lacking access to water supply and sanitation ([Brennan and Burton, 2007](#)). Since independence, class has prevailed over race to structure access to land, water and political power, and the city's growth has been characterised by a proliferation of informal settlements and a deterioration in public service provision ([Kironde, 2007](#); [Malipula, 2014](#); [Wenban-Smith, 2015](#)).

Failure of the post-colonial 'free water for all' policy to address

existing inequalities resulted in a return to a cost-sharing system in the 1980s, followed by a shift to full cost recovery in urban areas in 1991. Since 1997, the Dar es Salaam Water Supply and Sanitation Authority (DAWASA) has been charged with the provision of water supply. DAWASA claims to serve 76 percent of the population through household connections and networked water kiosks, but utility provision across the city remains patchy and is characterised by unequal service levels ([EWURA, 2020](#); [Hofmann, 2021](#)). Their inability to address existing shortfalls and inequalities has led to the emergence of alternative service providers to meet people's water needs.

Since efforts to promote private sector participation (PSP) have so far failed to attract sufficient private sector interest, the government has widened the pool of stakeholders by promoting local independent management entities, including Water User Groups, Water User Associations, and private operators ([Fierro et al., 2016](#); [MoW, 2006](#)). With the state specifically calling upon NGOs and CBOs to finance, develop and manage services for low-income residents ([MoW, 2002](#); [URT, 2000](#)), NGOs have collaborated with local government to establish distributed boreholes systems managed by local committees ([Hofmann, 2021](#)).

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While public water kiosks and distributed borehole systems¹ have increased significantly since the 1990s, many households, primarily the 75 percent who live in informal settlements, continue to rely on alternative, everyday practices involving a range of actors, including citizens themselves, as coproducers of urban service provision (Herslund and Mguni, 2019; Moretto et al., 2018). Fig. 2 shows the correlation between inadequate, or lack of networked services and informal settlements inhabited mainly by lower-income dwellers.

Even in settlements with (partial) connection to the network, access relies on the actions and practices of low-income dwellers themselves. Herslund and Mguni (2019) emphasize a disjuncture between the government's pursuit of the modern infrastructural ideal of centralised systems and the realities on the ground characterised by more decentralised forms of service provision. Low-income dwellers routinely engage in diverse and multiple activities to meet their water and

sanitation needs, including efforts to improve access (Björkman, 2015; Peloso and Morinville, 2014; Truelove, 2011). These everyday practices are not one-off occurrences but regularly reproduced and performed by households and collectives as part of a routine in everyday life; they often entail coping mechanisms to deal with inadequate service provision, but they can also lead to transformation (Strengers, 2010). However, contrary to prevailing dualist conceptualisations of water supply arrangements, the reliance on everyday practices should not be seen as separate from practices of government, formal private sector providers, external support agencies and other key players in infrastructure development that are driven by policy (hereafter referred to as policy-driven practices²) (Hofmann, 2021; Truelove, 2019). In practice, interactions between policy-driven and everyday practices are far more complex and go beyond intentional/institutionalised efforts of citizen-state interaction – often labelled as service coproduction (Allen



Fig. 1. Location of Dar es Salaam, Tanzania (source: created with [mapchart.net](https://www.mapchart.net/)).

¹ Many low-income settlements that lack access to the utility network rely on water from distributed systems. These are borehole systems with one or several distribution points spread across the settlement where water can be purchased by the bucket; some schemes also feature household connections. There is a wide spectrum of management arrangements across the city with some operated directly by the utility.

et al., 2016; Moretto et al., 2018). There is little recognition of the multiple ways in which policy-driven and everyday practices in low-income settlements interact and what this means for efforts to

² These formal practices can be identified from the perspective of the production and provision of services, i.e., the supply side (see also Allen et al., 2006).

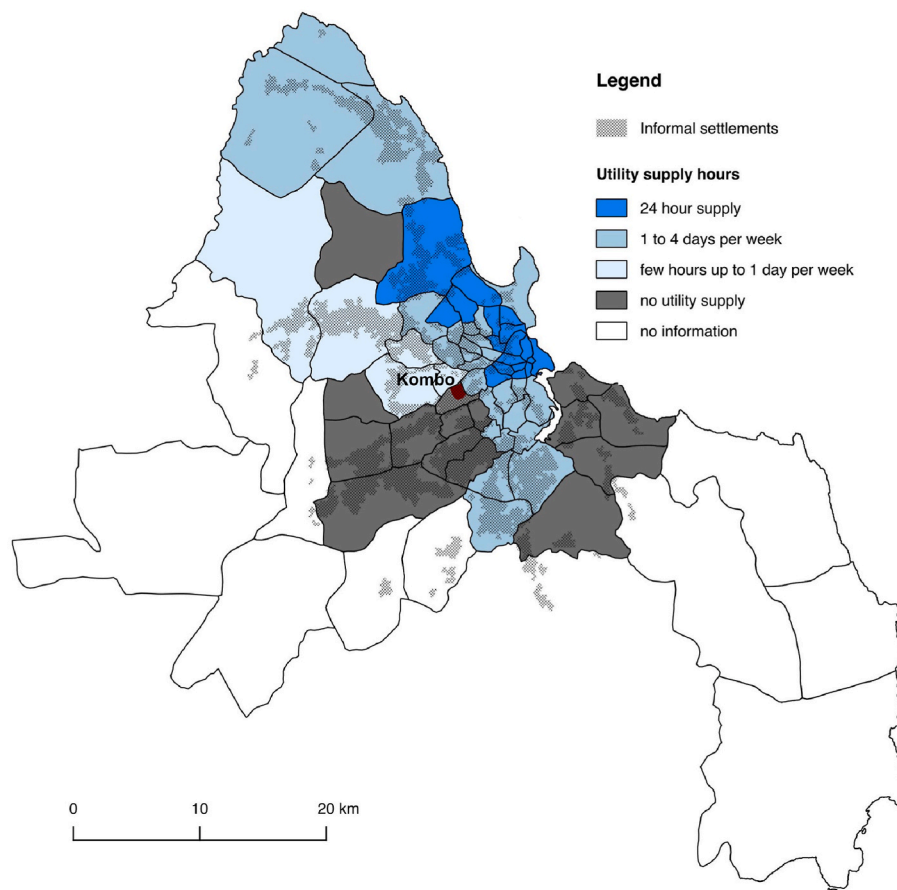


Fig. 2. Correlation between utility water supply and settlement status.

Source: Map prepared based on data from DAWASA (2014) and Dr Sliuzas (2008), Faculty ITC, University of Twente, Netherlands (r.sliuzas@utwente.nl)

reduce urban water inequality. However, the growing impact of climate change emphasises the need to address service provision shortfalls as part of a transition to more integrated systems that incorporate local actors and alternative practices (Herslund and Mguni, 2019; Mguni et al., 2015).

The aim of this paper is not to provide a comprehensive picture of service provision arrangements in the city's low-income settlements, which has been elaborated on elsewhere (see Hofmann, 2021), but rather to explore the interfaces between policy-driven and everyday practices and their differential implications for service provision inequalities, drawing on select examples from Kombo, a low-income settlement in Dar es Salaam. This analysis builds upon elaborations of diverse socio-technical realities and practices in low-income areas that remain largely overlooked in government efforts (e.g., see Allen et al., 2016; Herslund and Mguni, 2019; Nganyanyuka et al., 2014; Smiley, 2020). Specifically, this study explores the interactions between policy-driven and everyday practices to reveal their implications for urban water (in)equality. The emerging framework presented in the final section enables a situated analysis of service provision inequalities that can offer insights into the potential for more transformative and inclusive arrangements and the scope for different actors across levels to work together. The paper confirms a dialectic relationship between policy-driven and everyday practices and shows multiple examples in Kombo where practices reproduce, reinforce, or distort existing inequalities. However, there are also instances of more transformative practices that challenge unjust processes and outcomes toward more equitable serviced provision arrangements.

2. Dialectics of service provision inequalities and potential for transformative change

The paper applies a relational approach that draws on a range of complementary conceptual/analytical lenses, paying careful attention to intersections of time, space and socio-environmental relations in shaping policy-driven and everyday practices. Grounding the analysis in a normative perspective based on principles of environmental justice helps to understand how service provision inequalities are underpinned by social and political marginalisation and exclusion (Björkman, 2015; Mitlin and Satterthwaite, 2013). This approach emphasises interlinkages between the distribution of services, conditions of misrecognition and lack of participation of those lacking adequate access (Fraser, 1996; Holifield, 2013; Schlosberg, 2007; Young, 1990; Zwartveen and Boelens, 2014).

The analysis builds on existing work that challenges conventional framings and explanations regarding how access to water is governed and negotiated in low-income areas. For instance, Truelove's research on water regimes in Delhi reveals 'gray zones' of multiple hybrid institutional and infrastructural arrangements through which water is provided and accessed that defy commonly used dichotomies of legal-illegal, formal-informal or planned-unplanned (Truelove, 2019). Similarly, Schwartz et al. emphasize how formal and informal water service provision arrangements are interwoven and how different providers navigate this 'meshwork' based on their level of agency or influence (Schwartz et al., 2015). This article focuses primarily on the range of situated everyday practices (shaped by different power relations) that low-income dwellers engage in at the micro level while examining the connectedness with policy-driven practices embedded within broader processes of change and development. Since interactions between

policy-driven and everyday practices suggest an intricate interplay between structural forces and local action that shape service provision inequalities (Shildrick and Rucell, 2015), a critical deliberation of the agency-structure relationship provided below can clarify the need for structural change and the scope for individual and collective agency in transforming existing practices and addressing inequalities.

Giddens' structuration theory that transcends the dualism of structure and agency and asserts their co-constitutive nature provides useful 'sensitising devices' to rethink the relationship between micro and macro perspectives and processes enacted in policy-driven and everyday practices (1984). A situated analysis addresses the limitations of Giddens' a-contextual approach (Baber, 1991; Cleaver, 2007) by emphasising the importance of space and time and the value of exploring the dialectic relationship of agency and structure in particular local and historical settings (Butcher, 2021; Hofmann, 2021; McFarlane and Desai, 2015; Truelove, 2019). This approach can shed light on the multiple axes of inequality in a particular context that affect the provision of and access to services (Prins, 2006). Infrastructure and technology have clear implications for people's agency and practices to access services; different types of facilities constitute non-human resources with distinct levels of control for different actors (Cleaver and De Koning, 2015; Giddens, 1984). Since human and non-human resources carry power and are unevenly distributed, a situated analysis clarifies whose range of possible actions regarding access to services might be restricted and whose might be simultaneously extended. Notably, "[p]ower is not inherent within powerful subjects but is dispersed throughout the complex networks of discourse, practices, and relationships that position subjects as powerful and that justify and facilitate their authority in relation to others" (Kesby, 2005, p. 2040). The interrogation of policy-driven and everyday practices thus needs to be rooted within the intersection of time and place as key domains in configuring, challenging and restructuring hydro-social relations that shape service provision inequalities at the individual and structural levels (Yuval-Davis, 2006).

Unequal power relations are produced, reproduced, and reflected in policy-driven and everyday practices. They can be evident at the level of the household (e.g., between husband and wife), settlement (between different residents), city (across settlements) and beyond (Brock et al., 2012; Cleaver, 2007; Truelove, 2011) and manifest in unequal access to services and different levels of control. They might be reinforced by structural conditions and human agency or challenged (Rafiee et al., 2014). In this sense, individual or collective agency plays a key part in defining whether policy-driven and everyday practices are maintained and serve to uphold existing inequalities, and thus structural, or if they can transform toward more equitable access (Lamsal, 2012). As such, structures are not impervious to human action or agency and should be envisaged as processes susceptible to change (Sewell, 1992). However, the potential for transforming current practices depends on how far they are considered permanent and natural in specific historical and spatial settings (Katz, 2004). For instance, women might accept or challenge gender roles (e.g., as primary water collectors and with little involvement in household decision-making) based on socially embedded moral world views and cultural norms, which in Tanzania are strongly gendered (Van Aelst, 2014).

Increasingly, scholars have paid attention to the dimension of gender in their investigation of infrastructure and service provision arrangements (e.g., Harris et al., 2016; O'Reilly et al., 2009; Saleth et al., 2003; Sultana, 2011; Truelove, 2011). Nevertheless, a sole focus on single identity characteristics risks marginalising those differing from what is considered 'the norm' in other aspects, e.g., race/ethnicity, religion or ability (Dharamoon, 2011; Hancock, 2007). Consequently, scholars increasingly adopt an intersectional perspective to move beyond multiple (but fixed) identity categories and acknowledge dynamic intersecting relations "as the primary method of addressing how social subjects are constituted in and through diverse and interlocking processes of differentiation such as gender, sexuality, race, ethnicity, class, and livelihood" (Sundberg, 2015, p. 12). Cleaver asserts that "[i]ndividual identities and

associated motivations are complex and multi-layered, as are the channels through which resources are accessed. Plurality manifests in agents themselves" (2007, p. 233). Intersectionality builds fittingly on the notions of justice and provides an opportunity to enrich discussions on agency and structure to allow for an analysis that reveals differential abilities and vulnerabilities among low-income dwellers and pays attention to intersections of time, space and hydro-social relations in shaping or challenging service provision inequalities (May, 2015). The ability to take advantage of an intervention or opportunity, or to overcome constraining conditions, is unequal because it is strongly influenced by people's differing intersecting identities and relations and the networks in which they are embedded. While distinguishing between individual and collective or political agency can be useful, human agency is always relational in that social relations and the capacity to mobilise others for cooperation and support are key, whether initiated by individuals or a collective (De Herdt and Bastiaensen, 2008). It is useful to consider relations across scales, from intra-settlement relations to individual household dynamics.

To effectuate change requires an application of agency that can mobilise others and trigger a shift in social relationships (Cleaver, 2007; Katz, 2004). However, "systems of relations between differently located social groups are recurrently reproduced far more often than they are transformed; they must be considered as a form of social structure, a pattern of social life that tends to remain stable over time" (Hays, 1994, p. 69). The potential for transformative change thus depends on how far unequal relations that put some in an inferior, less recognised position, leading to differential service provision and disparate access levels, are believed to be normal and somewhat justified. Examining service provision inequalities through the relationship between policy-driven and everyday practices needs to reveal how they have come into being. Highlighting the uneven social relations that shape different practices opens the possibility that things could be different and transformed.

3. Method

Based on the elaboration of relevant conceptual underpinnings in the previous section that facilitate a relational examination of the intricate relationship between policy-driven and everyday practices, Fig. 3 clarifies how these are linked to particular analytical and methodological considerations. Analytically, a normative perspective centred around principles of environmental justice reveals aspects of distributional, recognitional and participatory injustice and inequality within existing practices and incorporates environmental considerations. Insights from the agency-structure debate clarify how far policy-driven and everyday practices produce, reproduce or challenge service provision inequalities across scales. This approach exposes normalised unequal social relations while identifying 'shifts' and 'cracks' in existing practices (Strengers, 2010). Intersectionality specifically enables a disaggregated examination of lower-income dwellers and their diverse abilities and vulnerabilities toward enabling and restraining structural processes.

This paper is based on research in Dar es Salaam conducted between 2014 and 2021 through secondary and primary research. Secondary sources included policy, programme and strategy papers, legal documents, statistical data, budget reviews, organisational publications and reports, research papers, journals-, and newspaper articles. This research was complemented by six fieldwork visits between 2014 and 2016, with follow-up trips in 2019 and 2021, which included site visits, community workshops and informal conversations with the utility, local government, and NGO representatives. At the city scale, data was primarily collected through 43 interviews conducted in 2014–15 with organisational representatives involved in policy-driven practices (national and local government entities, external support agencies, NGOs, micro-finance institutions, private sector organisations and service providers). The study further draws on in-depth fieldwork in the sub-ward of Kombo (several visits in 2014–2016) facilitated by the Centre for Community Initiatives (CCI), a local NGO working with the Tanzanian Federation of

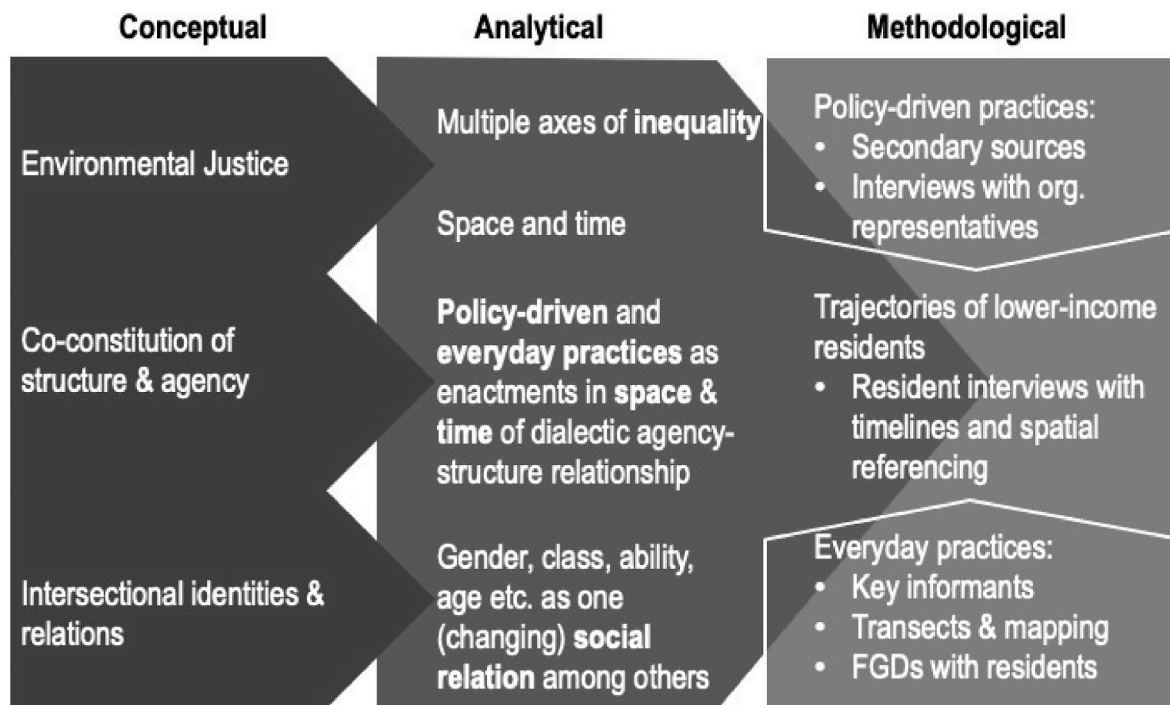


Fig. 3. A relational approach.
Source: Author's own

the Urban Poor (TFUP). Data was gathered through four Focus Group Discussions (FGDs) with Kombo residents, transect walks, participatory mapping of water supply facilities, observations, interviews and informal conversations with key informants, and 26 resident interviews using timelines to trace individual trajectories. Residents were selected to ensure a sufficiently heterogeneous mix of intersectional identities and characteristics (e.g., gender, age, access to water, livelihood activities, level of education, tenure status, and time living in the settlement). These trajectories allow for exploring the complex interplay between individuals and social or structural processes over time in a particular place by transcending the micro and macro analysis and focusing on the interlinkages (Maynes et al., 2008). To that end, drawing on a diverse range of trajectories helps avoid oversimplification and stereotyping and brings the voices of marginalised people and their practices to discussions on more inclusive service provision arrangements.³

4. Service provision inequalities in Kombo sub-ward

Kombo is a sub-ward in Ilala municipality approximately 6 km from the city centre (see Fig. 2) that predominantly houses lower-income residents, with a majority of tenants.⁴ Some residents are under permanent employment, while most engage in small enterprises and intermittent work, with many earning less than TSh200,000⁵ (£74.73) per month (CCI, unpublished documentation; CCI household survey, 2016). The settlement is next to one of the city's nine wastewater stabilisation ponds. The utility network extends only to certain parts of the settlement that some residents access through household connections or utility distribution points. The vast majority, however, depends on non-networked solutions, which include two community-managed public

³ Names of individuals mentioned in the paper have been changed to protect the identity of interviewees.

⁴ In 2012 Kombo spread over 46 ha and had a population of 36,816 before it was split into two sub-wards in 2014. As fieldwork commenced prior, reference to Kombo includes the newly created sub-ward.

⁵ In June 2017, £1 corresponded to TSh2,777.78.

borehole systems, a growing number of private boreholes, tanker trucks and small-scale mobile vendors, particularly for drinking water purposes.⁶ An estimated ten percent of households benefit from onsite water access while the rest rely on water facilities outside their premises, and many use multiple sources to meet their water needs. For sanitation, most residents depend on pit latrines. A small but increasing number of households uses hand flush toilets connected to soak-away pits, and a few households benefit from a simplified sewerage scheme that discharges wastewater into the nearby ponds. The few households without toilets depend on neighbourly solidarity to meet their sanitation needs. Local TFUP groups started to emerge in 2012, and there are now nine groups with more than 130 members. The following sections elaborate on the service provision modalities associated with networked and non-networked infrastructure before discussing aspects of diversity and intersectionality and the scope for addressing service provision inequalities.

4.1. Networked infrastructure and service provision modalities

The government's post-independence efforts have sustained a lack of prioritising service provision to the poor evident in colonial patterns of water supply (Pastore, 2015; Pigeon, 2012; Rugemalila and Gibbs, 2015). As service provision continues to be driven by an overarching liberalisation agenda, pro-poor principles and human rights considerations play a marginal role in utility practices and structural shifts. Indeed, while the country's National Water Policy (NAWAPO) includes a lifeline tariff for the poor, this is embedded in ongoing efforts of economic liberalisation, commercialisation and PSP (MoW, 2002; Rugemalila and Gibbs, 2015). Accordingly, utility legislation instructs DAWASA to operate on a full-cost recovery principle whereby household connections are not considered pro-poor as the lifeline tariff only applies to public kiosks and standpipes (EWURA, 2015; GoT, 2019, 2003; URT,

⁶ For an overview of practices and their associated costs, see Table 1 in (Hofmann, 2021, p. 179).

2009). In 2012 less than a fourth of inhabitants in low-income areas had access to a utility household connection (Pauschert et al., 2012). Network extensions to lower-income areas are largely demand-led as the utility maintains that the poor cannot afford household connections. This practice, anchored in national and local policy, requires low-income communities to mobilise collectively, make a case based on potential revenue contributions and demonstrate their financial ability to become recognised. Disregarding that low-income residents frequently pay much more for lower levels of service risks reproducing and reinforcing existing inequalities for those with less capacity to connect, which is not solely determined by the ability to pay (Uwazi, 2010). Indeed, the possibility of gaining a household connection in low-income settlements is far more complex and depends on location, social makeup, and local relations.

The city's uneven spatial distribution of water pipes displays significant inter- and intra-settlement disparities that are closely associated with people's land and housing tenure status. Policy-driven practices tend to neglect large numbers of tenants in low-income settlements like Kombo with little direct influence over onsite access, which is negotiated through their landlords. The lack of tenant protection in national policies and regulations can reinforce unequal power relations at the local level that expose tenants to unfair access conditions and rent increases. Landlord-tenant relations play an important role in negotiations concerning access to services (Scott, 2013; Stephens et al., 2013), with fieldwork findings showing a diversified picture, including more positive examples where landlords have enhanced their tenants' access.

Once the water network extends into a settlement, actions and behaviours of others can significantly influence the ability of households to gain a connection. Juliana's family in Kombo was able to connect because of their neighbour:

“Initially, when we enquired for the connection, the technician gave us a quotation of TSh300,000 (£108), which we could not afford so we postponed. Then later, when my neighbour established a household connection, the technician told me to pay TSh80,000 (£28.80), and we got the connection” (Interview conducted November 2015).

In cases like these, a joint effort of neighbourly solidarity can make household connections more realistic and affordable, but there is no evidence of this in Kombo. Instead, these improvements are driven by individual rather than collective efforts. Some households share their connection with other families to split monthly bills, but such pragmatic arrangements only happen once a connection is established and not through collective efforts for communal improvements (Elder-Vass, 2010; Roth, 2011). The behaviour of neighbours can also hinder better access. In a different part of Kombo, Mr and Mrs Mgeni were deterred from gaining a utility connection by a local water provider:

“The utility connection happened in 2011. We paid £88.56 compared to those who paid £5.40 [during a project offering subsidised connections]. At the time, we were getting water from a private borehole, and the borehole owner used his connections to make sure that we did not get it. So, after his borehole stopped working, we decided to get a utility connection” (Interview conducted November 2015).

While the couple eventually managed to connect, it was far more expensive. With limited progress connecting low-income households to the network, utility efforts to increase network access at affordable rates have primarily focused on establishing kiosks and standpipes with a stipulated pro-poor tariff of TSh20 per 20 L, which in practice amounts to TSh50 since this is the smallest available currency. Restricting lifeline tariffs to off-site provision classifies pro-poor access as remote and inferior. Moreover, since the National Water Sector Development Programme (NWSDP) induces the management of kiosks and standpipes by local intermediaries (MoW, 2006), utility supply gets ingrained in local settlement dynamics, whereby residents become vulnerable to monopolisation and price distortions:

“Where the kiosks are working, this is not really to serve the people [...] I think they are charging more, sometimes water is not available [...] One of the problems with kiosks is the positioning, the land ownership of those kiosks, they were positioned in households, on private land, so the owner of the land monopolises the kiosk and it becomes their private business” (Interview with iNGO urban WASH coordinator, August 2014).

Local water charges are further conditioned by other water supply arrangements in a settlement. A local government representative in Kombo raised concerns that the utility tariff at standpipes would put local borehole systems that charged the same price for lower quality water at risk. Consequently, private utility operators doubled their fees to TSh100 per 20 L without communicating this to the utility. Lack of engagement with local settlement dynamics, fostered by the utility's withdrawal as a direct service provider to the poor, means that pro-poor components within NAWAPO and NWSDP have little traction in the strategies and practices of Kombo residents and thus leave existing inequalities essentially untouched. Similarly, major policy-driven interventions focused on improving water supply, sanitation and drainage, e.g., the World Bank-funded Dar es Salaam Water Supply and Sanitation Project (2003–2010) and the Community Infrastructure Upgrading Project (CIUP) (2004–2011) were limited in enhancing service access equitably. Improvements are often restricted to settlements where communities demonstrate an ability to contribute financially and many of the established kiosks, Kombo included, never functioned (Coville and Su, 2013; Newborne et al., 2012). The limited impact of these interventions leaves residents to rely on the same array of alternative practices shaped by local power imbalances to meet their water needs, while some must deal with adverse effects:

“The first year, my utility connection worked well; then it stopped for several years. This is because of the road and drainage improvement works [reference to CIUP project], many pipes were cut or damaged. They were only repaired recently. [...] Flooding started when these storm drainage systems were constructed. What happens is that the channels are very narrow, so when it rains heavily, much water floods into this lower-lying area, depositing a lot of silt ... If we hadn't put this barrier, it would be flooding this place. We erected it about six months ago.” (Interview with an elderly homeowner, November 2015).

4.2. Non-networked infrastructure and service provision modalities

In parts of Kombo lacking utility provision, DAWASA has established distributed borehole systems that rely on groundwater. Municipal teams and NGOs have also been involved in establishing standalone water supply schemes later operated by community groups or private individuals, with varying capacities to provide a sustainable and affordable service. Limited public water supply in Kombo has further enabled the informal private water vending business to flourish, with a significant increase in private boreholes over the last fifteen years.⁷ The settlement features commercial boreholes with multiple distribution points and household connections that tend to outmanoeuvre public supply because of more reliable service. Mobile vendors, primarily water trucks, also play a relevant role, particularly for drinking and cooking, as the water is considered better quality, but it comes at a price of TSh50 per 20 L.

Everyday practices in non-networked areas are similarly embedded in local settlement dynamics and power structures, with government

⁷ In 2016, participatory water facilities mapping detected more than 20 private boreholes with over 150 distribution points compared to 1 private borehole in 1994 and an increase of 18 boreholes and 118 distribution points between 2010 and 2016 (Hofmann, 2021).

policy adding further complexity. As NWSDP compels community-managed public borehole systems to self-sufficiency, consumer charges need to cover operation and maintenance costs, with affordability becoming a secondary issue, as explained by the chairperson of a Kombo water committee:

“We were in a dilemma on whether to do repairs or pay it into the account of the water committee to pay off the debt we had accrued. So, we called a meeting with our clients to hear from them, and they said we are failing to run the system because the amount we were charging was very low and therefore we could not meet the running costs” (Interview conducted November 2015).

Public borehole systems in Kombo sell water at distribution points and through household connections to cater for different income levels. While the former represents a policy-driven practice promoted by NAWAPO, the latter has emerged to enhance revenue and cover costs over time. For instance, the revenue from household connections for a public borehole system in a different low-income settlement was seven times that of all distribution points. However, insufficient storage capacity limits the ability to accommodate an increasing customer base and cope with frequent power cuts. This problem adds pressure on an already over-stretched system and impacts existing customers as they compete over limited water. When the water in the system runs out, residents furthest away from the water tanks are the first to lose out. Tenants like Anita, where the landlord lives on site, are also more vulnerable to being cut off while still obliged to pay their monthly contribution:

“When there is no electricity, our landlord shuts down, so we don’t get water, but he gets it 24 hours a day” (Interview conducted in June 2015).

A rise in electricity charges has led to significant price increases since borehole systems rely heavily on electricity to operate. In 2014, the public borehole system in Kombo increased its monthly flat rate for household connections by 50% from TSh10,000 to TSh15,000 (£3.60 to £5.40) and intensified efforts to promote household connections. Ironically, the increase in household connections has rendered the running of specific distribution points unviable, highlighting the tensions between affordability and sustainability of service provision materialising at the local level due to competing objectives in government policy.

While the city’s underground aquifer currently contributes almost one-third of the city’s water demand and constitutes the primary water source for non-networked water supply, unsustainable abstraction has worsened access to water in Kombo and other settlements (increased saltwater intrusion and the drying up of shallow water sources) (Gomme, 2016; Quinn, 2013). DAWASA is expanding its water sources to combat service provision inequalities, but so far, government strategies have failed to provide realistic alternatives for low-income residents to meet their water needs. The insufficient capacity of a new well field combined with a limited water network means that groundwater remains essential for many alternative groundwater-reliant providers and practices (Gomme, 2016). Continued neglect in policy-driven practices of low-income dwellers’ everyday realities has worsened their struggles around water as they lack alternative options to alter their everyday practices.

4.3. Navigating diversity and intersectional relations

Over the years, organisations have become more sensitive toward gender, age, health and ability, and many policy-driven practices in Dar es Salaam include explicit components that support groups perceived as less able to fulfil their right to basic services beyond class. For instance, several legal, policy and institutional frameworks across sectors promote gender equality, and NWSDP emphasises women’s active participation in service provision and decision-making to achieve this (MoW, 2006; TAMWA, 2012). However, Islamic and customary law, although

nowadays legally superseded, still influences people’s beliefs, attitudes and practices whereby men are considered the primary breadwinner and household head, and women, particularly those with lower levels of education, are only marginally involved in decision-making (Feinstein et al., 2011; Van Aelst, 2014). Tanzania, by and large, still constitutes a patriarchal society. This situation is reflected in policy-driven initiatives such as the above-mentioned CIUP, where local participatory processes were dominated by men leading to a predominant focus on road infrastructure and less on water supply and sanitation.

In contrast, water management committees and other community forums in Kombo are composed mainly of women, not necessarily to enhance decision-making power but because voluntary engagement in self-help initiatives continues to be seen as the purview of women (Molyneux, 1985; Van Aelst, 2014). Partial representation and unequal power relations similarly exist among women as other intersectional identities and relations shape their capacity to act, meaning not all women suffer equally or share the same ability or lack thereof to act. For example, while TFUP has enhanced the individual and collective agency of certain members, leadership is not very dynamic as some feel threatened by the prospect of newcomers and federation membership among tenants tends to be lower compared to landlords.

Kombo residents meet their water needs through a range of modalities with significant variations regarding how they access water, as well as where, from whom, and for how much. While the water source plays a crucial role, practices are modified at the local level, and the relations between those managing access to water and those accessing it are significant. For many, their everyday practices are intertwined with and conditioned by practices of others, e.g., relatives, landlords and water providers, giving them less control over their access to water and enhancing vulnerability. For instance, some elderly, ill, or disabled residents in Kombo are entitled to free water supply from public community-managed systems, but this does not automatically reduce vulnerability. Yahaia receives free water from a public borehole because of his old age and limited mobility. However, his ability to benefit is closely intertwined with and conditioned by the relationship with his grandson, who fetches his water. This arrangement has proven challenging as he lives elsewhere in the settlement and is not always available. Moreover, during electricity cuts, he is compelled to seek alternative facilities.

Offering free water based on identity characteristics does not enhance control over hydro-social relations but can augment dependency on others. Like many women in Tanzania, Anita, a 35-year-old homemaker, relies on her husband to provide for the family, but due to his low, fluctuating income, there is sometimes not enough to purchase water. Due to her inferior position, she lacks direct control over her access to services (and other key decisions in life) (Van Aelst, 2014). Kombo provides some examples where women have enhanced their capacity to act. Zarifa, a 32-year-old tenant, co-founded the first TFUP group in Kombo, which helped her gain new skills and start saving. Peer-to-peer learning has significantly increased Zarifa’s confidence, and she drives collective efforts to improve settlement conditions, including access to services. Her husband thinks the federation is her purview, but the couple makes decisions jointly at the household level. Shared decision-making is more common among younger than older couples, those with higher education levels and where women contribute to the household income. Singling out identity characteristics and neglecting the relational character of water supply in low-income areas fails to challenge subordinate roles, positions, and societal relations.

4.4. Addressing service provision inequalities

Dar es Salaam provides examples of collective action and community mobilisation that challenge existing inequalities and injustices with some transformative practices. NGOs have worked with low-income communities across the city to set up savings groups so they can

benefit from external interventions, such as those mentioned above. Savings groups further serve as mechanisms to mobilise low-income communities and enhance their capacity to act. Different NGOs are trying to break with the tradition of planning and decision-making based mainly on aggregate data. Like Kombo, several low-income settlements have formed local TFUP groups with the support of CCI, which trains TFUP members to conduct local surveys and self-enumerations in informal settlements. These methods generate detailed information for initiating a conversation with government agencies and putting these unrecognised communities on the map of urban planning. Instances of sub-ward representatives joining local mapping efforts have been particularly effective in enhancing their understanding of issues in their constituencies. In Kombo specifically, collective data collection has increased the ability of low-income dwellers to represent their interests, demand their rights and enhance their negotiating power for a fairer distribution of services.

Transforming existing practices and addressing service provision inequalities requires engagement with the government. CCI and TFUP in Kombo have used a simplified sewerage pilot to re-negotiate the engagement of the municipality and utility with low-income communities. Establishing a rapport with the government has been a long process but essential to realise the simplified sewerage scheme (SSS). Until 2014, the municipality prohibited Kombo residents from using the wastewater stabilisation ponds for sewage disposal. CCI and TFUP facilitated participation from diverse residents to coproduce the scheme and trained community members to contribute to infrastructure construction, operation, and maintenance. In 2014 a pilot initiative connected 18 household toilets to the ponds using simplified technology. At present, SSS connects 290 toilets, serving approximately 700 households. Historically, sanitation provision in low-income settlements like Kombo has been characterised by an almost complete absence of the state. Innovative, decentralised solutions like SSS largely failed to influence utility strategies (Herslund and Mguni, 2019). However, under a World Bank-funded project, DAWASA's off-grid water supply and sanitation department is in the process of implementing 30 simplified sewerage schemes in low-income settlements across the city, but they focus primarily on the technology with insufficient consideration toward citizens as coproducers of the service (Interview with DAWASA employee, November 2021).

The spatial reach of SSS in Kombo has increased and will continue to do so, but so has the household contribution after the first phase, preventing some from becoming beneficiaries. For instance, Joseph and his wife, an elderly couple, joined the 2014 pilot and had to rely on their children to cover the highly subsidised TSh40,000 (£14.40) project contribution. With a monthly income of TSh190,000 (£68.80), the increased contribution of TSh700,000 (£252) (TSh 1 million if paid through a loan over three years) is unaffordable. Subsequently, CCI and TFUP started testing different finance models to enhance the ability of local dwellers to connect, but there are also environmental limitations of the ponds to consider in future expansions. Moreover, unequal power relations across scales have impeded protecting the most vulnerable. At the local level, TFUP and CCI have emphasised that beneficiary landlords should not use the scheme to increase rents, but this has been difficult to implement in practice. Even Mary, a local landlady and TFUP leader, transferred the costs to her tenants instead of fostering the collective benefits of the scheme.

Moreover, the utility inflated monthly charges over time in ways that neither align with the official wastewater tariff nor reflect wastewater quantities of beneficiary households. While an agreement to lower charges was reached, low-income dwellers remain inferior partners in this coproduction arrangement, and future tariff rises cannot be ruled out. Initiatives like these struggle to sustain and institutionalise empowerment conditions that enhance disadvantaged groups' agency beyond infrastructural development and into coproduced service delivery and management (Bovaird, 2007; Kesby, 2005). This approach would require altering relations and redistributing power between

government and low-income communities in existing practices. Given that the utility is implementing further SSS across the city, there is an opportunity to explore how the government's cost recovery agenda can be bridged with concerns for more inclusive service provision through service coproduction arrangements that enhance the agency of low-income communities.

5. Discussion and conclusion

The relational approach enabled a critical analysis focused on the interactions between policy-driven and everyday practices and how they shape access to water and sanitation. Dar es Salaam shows multiple examples of service provision inequalities produced, reproduced, and normalised. While most low-income dwellers can exercise a rudimentary degree of agency to cope with change without worsening access to services, their capacity to enhance it is often limited. There are also instances where low-income dwellers use their agency, individually or collectively, to improve access to services. Findings from Kombo reveal differential abilities and vulnerabilities among poor women and men toward enabling and restraining structural processes and conditions, whereby time, space and socio-environmental relations intersect with and shape infrastructural and service configurations and vice versa. Consequently, practices are as much constitutive of people's lives as they are reconstitutive of social structures (Hays, 1994), highlighting how both policy-driven and everyday practices are, in essence, enactments in space and time of a dialectic agency-structure relationship that shapes service provision inequalities. Fig. 4 provides an emerging framework for a situated analysis that scrutinises interactions between policy-driven and everyday practices to reveal implications for service provision inequalities and explore the potential for transformative change in particular historical and spatial settings.

5.1. Revisiting the dialectic relationship between policy-driven and everyday practices

Fig. 4 illustrates how interactions between policy-driven and everyday practices can reproduce, reinforce, distort, challenge, or transform service provision inequalities. Policy-driven practices are out of sync with the dynamic and differentiated realities in low-income settlements (Herslund and Mguni, 2019), allowing unequal power relations that shape people's access to services to reproduce. Policy-driven practices have assisted some in meeting their water needs without challenging or transforming structural conditions that underlie unequal service provision. Everyday practices are equally affected by deep-seated ways of thinking that normalise unjust structural processes and positions as more progressive policies fail to permeate cultural norms. Thus, residents often unconsciously reproduce unequal relationships in their everyday practices, e.g., between husband and wife, landlord and tenant or service provider and client, but they can also use their agency with the intent to reproduce or challenge the status quo.

Kombo shows how policy-driven practices influence everyday water and sanitation practices, but they do not affect residents equally as their capacity to act is shaped by intersecting identities embedded in "overlapping networks of relations that shift over time and space" (Somers, 1994, p. 607). The provision of services is closely associated with the evolution of the natural and built environment in which human-nature relations are continuously negotiated in situ and over time through different infrastructure and service modalities. Several examples illustrate how policy-driven practices interact with local dynamics, relations, and needs. For instance, by shifting the implementation of pro-poor policy mechanisms (i.e., operation of water supply schemes and application of lifeline tariffs) to local intermediaries, the government enables everyday practices to reproduce, reinforce or alter service provision inequalities. In Kombo, national and city-level policies and legislations become distorted as particular service provision arrangements are negotiated locally with clear winners and losers.



Fig. 4. The dialectics of policy-driven and everyday practices and implications for service provision inequalities.
Source: Author's own

5.2. Potential for transformative change

Everyday practices are proving more responsive to changing environmental conditions and individual circumstances (Moretto et al., 2018) and can overcome limitations in policy-driven practices (e.g., partial network supply and vague pro-poor policies) by diversifying water sources or more conscious reconfigurations of practices such as the active promotion of household connections to sustain borehole systems. However, in many instances, they constitute coping mechanisms that frequently reproduce unequal social relations and leave policy-driven practices and structural processes untouched. Where the state involves low-income communities in local service delivery, this often happens without enhancing the recognition of marginalised voices (Allen et al., 2016) because most approaches to community participation embedded in mainstream policy-driven practices conflate efficiency goals with claims of enhancing the agency of low-income groups through collective action. Remnants of post-colonial efforts to hinder decentralised power in an attempt to unify the nation are still present in Dar es Salaam; this, together with liberal reforms and structural adjustment programmes to limit and reduce the role of the state, has left a social vacuum with nobody equipped to assume protective functions (Parnell, 2015). Community involvement is often seen as a panacea and frequently facilitated through existing representative structures with inherent power imbalances and under-representation of more marginalised dwellers. Failure to tackle local inequalities risks reproducing and legitimising a system that disempowers a large proportion of citizens.

However, Kombo further shows instances of more transformative practices that challenge unjust processes and outcomes through collective and interactive processes, albeit with continued equity challenges. While local relations are crucial in addressing inequalities, efforts to

foster more inclusive service provision arrangements need to penetrate higher scales. Similarly, progress at the national or city scale, for instance, regarding gender equality, must recognise the influence of local processes and interactions over intended outcomes. Engaging key players in pilot initiatives, for instance, around innovative technology, can forge new partnerships and collaborations. The SSS in Kombo demonstrates the value of anchoring transformative action in local realities where low-income dwellers are represented and incrementally recognised as legitimate service coproducers. This experience validates that decentralised systems developed at the local level tend to be more accessible while also showing the potential to develop more adaptable, sustainable, and resilient systems in the light of climate change (Herlund and Mguni, 2019; Moretto et al., 2018). As such, there is scope for bottom-up approaches to bridge policy-driven and everyday practices in more just and inclusive ways.

This article shows that attention to the intricate interplay between policy-driven and everyday practices can reveal how service provision inequalities and injustices materialise in a particular context. This approach creates an awareness of existing inequalities while recognising opportunities for change to challenge the modern infrastructural ideal as well as traditional norms and practices that continue to prevail over more progressive ones. The potential for transformative change starts with individual and collective perceptions about the permanence and malleability of existing policy-driven and everyday practices. Those practices that naturalise the causes of inadequate provision and reproduce or even aggravate conditions for the most marginalised need to be challenged. This endeavor means capitalising on the shifts and breaks identified in current practices to alter existing relations to allow more inclusive and equitable service provision.

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Data availability

The data that has been used is confidential.

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