



# Beyond the networks: Self-help services and post-settlement network extensions in the periphery of Dar es Salaam



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## ARTICLE INFO

### Article history:

Received 26 February 2015

Received in revised form

29 October 2015

Accepted 9 November 2015

Available online xxx

### Keywords:

Urban services

Urban infrastructure

Urban expansion

Urban peripheries

Peri-urban

## ABSTRACT

This paper offers insights from comprehensive case studies of rapidly growing peripheral settlements of Dar es Salaam. The paper explores how a broad range of services and infrastructures have developed and improved over time, and how residents have been engaged in this in various ways. The gradual improvements in services and infrastructure are to some extent created, organized and financed by residents through informal self-help solutions, which are often costly and place huge strains on residents' time and resources. Alongside this, residents are also involved in attracting formal service providers through applications, co-financing of network extensions as well as lobbying efforts towards urban authorities and service providers. The formal service providers primarily take a reactive role, responding to demand, requests and political pressure from residents. Post-settlement network extensions are often complicated and impeded by costly and cumbersome land-acquisition processes, and because of the reactive and often piecemeal approach to network extensions, society may be missing out on potential benefits of scale. The way urban services work also means that the provision of services and infrastructure is extremely differentiated and fragmented across the urban territory, creating and reinforcing major inequalities in access to services.

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## 1. Introduction

Urban expansion is a significant trend in the cities of Africa (Angel, Parent, Civco, & Blei, 2011; Arku, 2009). Much urban expansion is taking place “beyond the networks”, in areas where infrastructure and basic services are either inadequate or non-existent (Chitonge, 2014). Long-term under-investments have resulted in networks lagging far behind the demographic as well as the spatial growth of the cities (Foster & Briceno-Garmendia, 2010; Keener, Luengo, & Banerjee, 2010; Pieterse & Hyman, 2014; Pitcher & Murray, 2007; Torres, Jacobsen, Webster, & Vairavamoorthy, 2012). The provision of networked services and infrastructure is highly unequal and in most cases limited to a relatively small metropolitan core, with the peripheries of the cities suffering significant deprivations (Allen, Dávila, & Hofmann, 2006; McGranahan, Mitlin, Satterthwaite, Tacoli, & Turok, 2009; Myers, 2014; Van Dijk, Etajak, Mwalwega, & Ssempebwa, 2014).

The systematic failures of African states to provide basic services

and essential infrastructure in their cities are widely acknowledged. More recently, scholars have begun calling for a radical change in perspective, taking as starting point not the failures of urban service provision, but how urban services actually work, and the many ways in which urban residents fill the gaps left by public and private service providers. Simply listing deprivations does not say anything about how services are actually produced and provided (Simone, 2010). Instead scholars call for an empirically grounded study of services and infrastructure, focussing on the heterogeneity of actual service delivery systems (Jaglin, 2014; Pieterse & Hyman, 2014), the actors, institutions and processes involved in the provision of services (Bierschenk & de Sardan, 2014; Blundo & Le Meur, 2009) as well as the capabilities of residents in servicing their settlements (Pieterse, 2008, 2014; Simone, 2014). It is the ambition of this paper to contribute to this emerging agenda.

This paper offers insights from recent case studies of five rapidly growing settlements in the periphery of Dar es Salaam, the largest city and de-facto capital of Tanzania. Services and infrastructure were seldom in place in these settlements before housing development began, but some level of services and infrastructure has emerged along the way. The study explores how services and infrastructure have developed and improved over time, and how

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residents have been engaged in this process in various ways. This makes it possible to gain a holistic understanding of how urban services work and how residents manage to make their settlements liveable through a broad range of different strategies.

While not part of the above-mentioned research agenda, other studies of peripheral urban settlements do note the capabilities and resourcefulness of residents in relation to service provision. In a study of Lagos, Nigeria, Sawyer comments that improvements in services and infrastructure are primarily due to the efforts, investments, organization and networks of the residents themselves (Sawyer, 2014). In a study of Luanda, Angola, Buire remarks the importance of small-scale improvements made by residents (Buire, 2014). In a study of Accra, Ghana, Gough reports that new settlers form residents' associations, which are actively engaged in service provision (Gough, 1999). Ibem reports how community groups in Ohafia, Nigeria, are involved in financing services and infrastructure improvements (Ibem, 2009). For Dar es Salaam a number of studies of peripheral settlements report how services have been developed and improved gradually by residents (Burra, 2004; Kombe, 2000, 2005; Kyessi, 2005; Owens, 2010). These studies, however, rarely share the focus of this paper on services as the main object of investigation.

Other studies have explored how residents in urban peripheries access a specific service, often either water or sanitation, through various informal solutions. Some studies highlight the widespread practice of drilling private wells and boreholes (Allen et al., 2006; Kyessi, 2005; Manzungu & Chioreso, 2012; Mwakalila, 2007; Nnaji, Eluwa, & Nwoji, 2013). Others note the prominence of private on-site sanitation facilities (Njoh, 2013; Van Dijk et al., 2014). Some emphasize the significance of informal, small-scale, commercial operators, esp. in relation to water provision (Allen et al., 2006; Chakava, Franceys, & Parker, 2014; Chitonge, 2014; Kyessi, 2005; Manzungu & Chioreso, 2012; Mwakalila, 2007; Nnaji et al., 2013; Sima, Kelner-Levine, Eckelman, McCarty, & Elimelech, 2013; Solo, 1999). There are also reports of small-scale private operators within sanitation and solid waste collection (Kassim & Ali, 2006; Mwasumbi, 2004; Van der Geest & Obirih-Opareh, 2009). Most of these studies are sectoral in scope, and focus on one particular service. This paper offers comprehensive case studies exploring how residents engage in development and improvement of a wide array of services and infrastructures, making it possible to gain a more holistic understanding of how residents in the peripheries manage to make their settlements liveable.

## 2. Context: urban growth and spatial expansion of Dar es Salaam

Dar es Salaam is the largest city and de-facto capital of Tanzania. Administratively, Dar es Salaam consists of three municipalities; Kinondoni, Temeke and Ilala. Combined, the total territory is 1624 sq.km. (Andreassen, 2013). With a total population count of 4.4 million in 2012, it is a large city in the context of sub-Saharan Africa (NBS, 2013). Dar es Salaam's population grew at a breath-taking pace of 5.8% per year on average in the most recent inter-census period from 2002 to 2012 (NBS, 2006, 2013). This is a continuation and acceleration of historically rapid growth trends.

To a large extent population growth has translated into spatial expansion. Sprawl was noted as a central feature of Dar es Salaam's urban form already around the time of independence (de Blij, 1963). Since then the surface area of the city has increased dramatically (Olvera, Plat, & Pochet, 2003). Recent population growth has also resulted in widespread spatial expansion (Andreassen, 2013). The total built-up areas of Dar es Salaam increased by 133% during 2002–2011, while the population only increased with 75% during 2002–2012 (Macchi, Ricci, Congedo, & Faldi, 2013). The spatial

form of the city is highly inefficient in terms of infrastructure and service provision (Hill, Hühner, Kreibich, & Lindner, 2014). To a large extent expansion is happening informally and unguided by planners (Kironde, 2000, 2006; Kombe, 2005). In total, an estimated 80% of Dar es Salaam's territory is informal (UN-Habitat, 2010).

Investments in urban infrastructure and services are highly inadequate and have not kept pace with the demographic and spatial growth of the city (Myers, 2014; Olvera et al., 2003, Sarzin & Raich, 2012). The majority of peripheral settlements are unserved by networked infrastructure (Allen et al., 2006, Hill et al., 2014, Mwakalila, 2007). The road infrastructure and the public transport system are insufficient and unable to cope with the spatial growth of the city (JICA, 2008; Melbye, Møller-Jensen, Andreassen, Kiduanga, & Busck, 2015; Olvera et al., 2003).

## 3. Data collection

This paper is based on in-depth case studies of five selected residential areas, four of which are new, developing peripheral areas, while one could be considered a formerly peripheral area, which is today more consolidated and located closer to the centre. The selection of case study areas is based on an analysis of spatially disaggregated population data for Dar es Salaam from the two most recent censuses, indicating which parts of the city experienced most rapid population growth (Andreassen, 2013). All the selected case study areas have experienced both very high population growth rates, around or higher than 10% per year in 2002–2012 period, as well as significantly increased population densities. As such the selected areas are extreme cases of rapid urban population growth. They are areas of radical urban transformation, which are considered problematic from a planning perspective. Extreme cases are often rich in information, well-suited for in-depth learning and likely to produce advanced understanding (Flyvbjerg, 2006). Selection of the specific case study areas took place in consultation with planners at municipal and ward-level and sought to ensure variation in relation to population densities and socio-economic status of residents, inclusion of areas from all three municipalities as well as inclusion of informal as well as formally surveyed areas. Table 1 provides an overview of the selected case study areas.

All five areas have transformed from sparsely populated rural or peri-urban areas dominated by bush and agricultural land-use to more densely developed residential areas forming part of the contiguously built-up urban area. Expansion was typically initiated by a first wave of newcomers buying land and developing houses, predominantly self-built, owner-occupier, single-household houses. In informal areas expansion was facilitated by informal subdivision processes and land sales. In the smaller pockets of surveyed land expansion was facilitated and guided by a formal surveying and subdivision process. Alongside the homebuilders many other newcomers were also attracted to the areas, preliminarily house caretakers as well as relatives and extended family members of the homebuilders, later also numerous tenants, as some homeowners developed parts of their properties into rental accommodation.

Fieldwork was conducted between November 2013 and May 2014. Data consists of focus groups with long-term residents in each case study area, many of which were indigenous and/or life-long residents engulfed by urban expansion processes. The focus groups were concerned with creating a shared narrative of the various changes that the settlements had undergone in relation to housing, services and infrastructure. This was supplemented with observations of the urban environment and interviews with relevant local key informants such as local leaders, larger investors and informal land brokers in each area. A total of 29 residents participated in focus groups and another 29 residents participated as key

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