

# RurbanAfrica

## African Rural-City Connections

2014

### Briefing 4

## Mapping of Service Provision in low-income areas



## INTRODUCTION

The urbanization of Africa promises great economic benefits and the data in this report show that public services are generally better in urban areas than in rural areas, although not necessarily for poorer households. But so far the pace of urbanization has outstripped the delivery of infrastructure services. Roads are choked, power is unreliable, and sanitation is poor. Significant investments are needed to make cities more productive and to ensure decent living conditions for growing urban populations.

This report examines a range of services - sanitation, water, electricity, education, health, mobile phones, urban transport and street lighting - in Sub-Saharan Africa (SSA) with case studies of Cameroon, Ghana, Rwanda and Tanzania. This report includes extensive analysis of Demographic and Health Surveys (DHS) data which were obtained through the DHS program portal ([www.dhsprogram.com](http://www.dhsprogram.com)) and disaggregated by income quintile. The findings for each service are summarised as the availability of each service, the constraints and the potential areas for future planning and policy making.

## SANITATION

Overall, access to sanitation is poor and SSA will not meet the Millennium Development Goal (MDG) sanitation target by 2015. In rural areas, the percentage of the population using “improved” sanitation in 2010 was only 23%, whereas 35% practised open defecation. Overall coverage was better in urban areas where 43% used improved sanitation and 8% open defecation (UNICEF, JMP 2012). Access to improved sanitation in Cameroon and Rwanda was higher than the SSA average, in both rural and urban areas, but access in Ghana and Tanzania was below the average.

Population growth and income are important factors. Since 1990, the urban population in SSA without improved sanitation has increased by 100 million as provision has increased more slowly than population growth. The poorest people are five times less likely to use improved sanitation than the richest quintile (AMCOW, 2012).

Use of shared sanitation is increasing in many African countries, particularly for low income households. This is especially high in Ghana where it increased from 44% of the urban population in 1990 to 73% in 2010. Shared sanitation however is not seen as being ‘improved’ due to a frequent lack of cleanliness and limited access. In some cases however shared facilities are clean and well managed with some arguing that shared sanitation is the only viable option in densely populated urban areas.

Urban sanitation challenges faced by households in lower income areas are exacerbated by on-going change including demolitions, slum upgrading, redevelopment, over-crowding and lack of services. This applies to both shared and individual household sanitation. Low-income urban residents are constrained by lack of security of tenure

Municipal governments generally have limited capacity and resources to deal with on-plot or non-sewered sanitation. Instead, a complex range of stakeholders provide individual or shared sanitation services in urban areas including: municipal/central government, private developers, informal private sector, water utilities, civil society (NGOs and Community Based Organisations [CBOs]) and individual households. Community driven initiatives are popular but they face challenges related to organisation, affordability and acceptance by authorities. There are many cases where the local municipality supports Non-State Providers (NSPs) at key stages of the sanitation service chain – e.g. by constructing public latrine blocks that are leased-out to private operators (e.g. Kumasi in Ghana), or by allowing private tanker operators to discharge sewage sludge into the sewer network.

Increasing need for improved sanitation services in urban areas requires decision makers to consider the implications of shared sanitation, within wider urban infrastructure planning. The relationship between NSPs and the State needs to be understood by all parties and dialogue established. It is important that these parties identify all levels in the sanitation service chain, their role according to available resources, and any weaknesses.

## WATER SUPPLY

Overall, access to water supply has increased however the 2015 MDG drinking water target will be missed. Individual countries will achieve it, including Cameroon and Ghana. In rural areas, the percentage of the population using “improved” water supply sources in SSA increased from 36% in 1990 to 49% in 2010 (UNICEF, JMP 2012).

However, growth in the rural population in Africa resulted in an increase of 35 million people without improved drinking water (AMCOW, 2012). There have been improvements in access to improved rural water sources in Ghana (80% coverage in 2010), whilst access has remained the same in the other three study countries.

Water supply coverage is better in urban areas; 83% of the SSA population accessed improved water sources in 2010, including 34% with water on the premises (UNICEF, JMP 2012). Almost five times as many people in rural areas of SSA are without an improved drinking water source than in urban areas (AMCOW, 2012).

Clear improvements include the percentage of urban people in Cameroon and Ghana who use 'improved' or potentially hygienic water sources, now above the SSA average, however there has been a decline in Rwanda and Tanzania to below average access.

The benefits of access to piped water is limited to those in higher wealth quintiles, with a reduction in access by urban SSA households from 43% in 1990 to 34% in 2010. This suggests a lack of investment in infrastructure, calling for improvement in utility performance. Inequality is evident in urban water services, as only 5% of the poorest income quintile of the population has piped water in SSA (UNICEF JMP, 2012). Water is obtained from vendors or shared taps rather than the water utility which faces a huge challenge in serving this group - alternative providers have market shares of 30% to 80% in many African cities.

In rural areas, maintenance and repair is difficult and approximately 35% of all rural systems in SSA do not function. Whilst Local Government struggles to provide support to village committees who manage their water services, focus is now more on supporting the local private sector in the provision of spare parts and repairs. Informal urban settlement dwellers are unlikely to have a legal connection to a water utility due to connection difficulties and high costs. Water kiosks are common but service levels vary due to far locations, and poor supply, long queues and collection times. Water vendors provide an immediate source of water but prices are higher than at public taps or kiosks. Illegal connections are problematic both for the utilities and those with legal connections.

Credible and stable regulatory frameworks attract operators and mobilize finance for investment. The important role of non-state/ alternative providers is now acknowledged. These include the local private sector (formal and informal) and CBOs who provide effective services in many low income areas. The main types of government engagement with NSPs are recognition, dialogue, facilitation/ collaboration, contracting and regulation.

In several cases, the local private sector or CBOs now have formal responsibility for service provision. Such 'delegated management models' aim to improve services in unserved areas. More progressive Governments and utilities are supporting these initiatives where utilities cannot provide adequate water services. Strengthening capacity of utilities will be a key driver in improving access to water in urban areas.

## **ELECTRICITY**

The power crisis in SSA means that less than a quarter of the population has access to electricity. If South Africa is excluded, Sub-Saharan Africa is the only region of the world where per capita electricity consumption is declining (Eberhard et al, 2011). National utilities, often government owned, are generally responsible for urban electrification programmes, with little competition or innovation. Prices vary widely between countries and it is a highly subsidised sector where 'cross-subsidising' between urban and rural customers is common. People in peri-urban areas face particular challenges gaining access to electricity because they occupy the middle ground between urban and rural communities.

Connecting electricity for urban areas should be easier than for rural areas due to the high density of households in a given location. However, lack of capacity on the supply side leaves many utilities unable to connect new users who are willing to pay. As with water supply, in cases where tenure is not secure both government and utilities can be unwilling to connect services to illegal dwellings or those without formal titles (Eberhard et al, 2011).

In Cameroon and Ghana, more than 80% of households have access to electricity in urban areas compared to 50% in Rwanda and Tanzania. Access in rural areas is much lower - less than 5% in Rwanda and Tanzania,



though Ghana has increased access to about 38% in rural areas. In all countries, few of the poorest 40% have access to electricity. It is widely known that households use electricity for lighting. However, little is known about how households use or wish to use electricity for other purposes.

Cost recovery is a major challenge facing electricity providers as high tariffs would make electricity unaffordable to most. Fixed monthly connection charges can increase the cost of electricity even further, especially for households with relatively low levels of use.

The power grids in SSA are extremely unreliable, due to ageing infrastructure, poor maintenance, insufficient generation capacity and other technical issues. Illegal connections are a financial problem as well as being inherently unsafe.

## **EDUCATION**

Access to primary schools has increased in SSA but universal primary education will not be achieved by 2015, though enrolment in many countries was above 90% in 2010, including Rwanda and Cameroon. Still, the number of children not in school in SSA was 31 million in 2010 (UNESCO, 2012), amounting to half of all out-of-school children worldwide. Almost one in four primary school-age children in SSA have never attended school or left school without completing primary education. Most sub-Saharan countries now see post-primary or lower secondary education as an important policy objective. Participation rates in lower secondary education are much higher (38%) than upper secondary rates (24%).

The probability of being out of school decreases as household wealth increases. This is four times more likely for children from the poorest quintile households than the richest quintile. Private schools provide places but they are unaffordable for most. Public schools in all four case study countries cannot provide the necessary infrastructure, materials and teaching staff. Whilst huge efforts have been made to improve access to primary education, secondary education has fallen behind with demand for places often outstripping supply. The higher concentration of schools in urban areas shortens the distance between home and school and schools in urban areas can attract better qualified staff. Children in rural areas generally have to travel further to get to school and their choice of schools is more limited.

In addition to finances, constraints to completing primary/ secondary education include gender, place of residence, poor infrastructure, materials, teaching staff and disability. Reducing the cost of attending school and providing alternative forms of education are key areas for improvement. In the case study countries, a lack of space and qualified teaching staff were particular constraints on improving access. Improving the quality and number of teaching staff in countries such as Ethiopia and Namibia has improved the quality of education provided. Teachers in rural schools can now benefit from the same level of training as those in urban schools and provide a similar level of service.

## **HEALTH**

Current trends suggest that most countries in SSA will miss the MDG health related targets. The issue of universal health coverage and inequalities has gained attention globally. Inequalities exist both between countries and regions, and within countries, with those in lower wealth quintiles more at risk from illness and high mortality. Better health infrastructure exists in urban areas for those who can afford it. A mixture of public, private, religious and not for profit facilities are available. Urban areas also attract a more skilled workforce; services in rural areas can be provided by semi- or un-skilled workers. In the case study countries traditional healers and informal vendors are still widely used by all.

Key elements contributing to effective health system service delivery are a strong healthy workforce, medical products, vaccines and technologies, information systems, financing, good leadership and governance (WHO, 2007). In SSA, these elements are weak or non-existent which affects the provision of good quality health services to all. In many countries, the number of medical staff has decreased in real terms due to factors including brain drain, failing to replace staff who retire, poor supply of trained staff and population growth. Countries around the world are struggling to provide equitable access for all. Introducing medical insurance increases

access to health facilities in countries such as Rwanda but lack of infrastructure, qualified staff and equipment is still a significant challenge throughout SSA.

## **MOBILE TELEPHONES**

The growth in mobile phone communications has been a remarkable achievement in SSA. Although the initial cost of handsets can be high, the cost of using a mobile phone is relatively low, especially with pre-paid services. About 97% of consumers in SSA use this payment method, buying credit/airtime in small denominations, according to their budget (Foster and Garmendia, 2010). Expanding and strengthening social networks is seen to be the most important benefit of having access to mobile phone services (Duncombe, 2012).

In the case study countries, more than 70% of the urban population and 35% of the rural population have access to mobile phones, which is lower coverage than water supply but higher than electricity (except in Ghana) and much higher than improved sanitation. The main barriers to this are cost of handsets and lack of network coverage. In terms of handset affordability, households who cannot afford to own their own mobile most often use a public phone (in a shop or with an agent) or use those of family and friends.

Mobile phones are promoting enterprise through the formalisation of previously informal networks. Information can now be transferred via the phone which used to be given through word of mouth. This allows enterprises to have larger networks, which can encompass a whole supply chain. Mobile money transfers, more common in urban areas, are a potential growth area for the urban economy, by supporting the growth of small and micro enterprises.

## **URBAN TRANSPORT**

Improving urban transport increases incomes and contributes to economic growth, social progress and environmental protection. However growing urban populations, increasing motorization, and poor transport infrastructure cause major problems for citizens who live in these cities. The urban poor use a mixture of non-motorised and motorised transport. The use of bicycles depends on national preference but the use of public buses and motorbike taxis is common in all case study countries. "Traffic-related injuries and mortality rates are extremely high by global standards — especially for pedestrians" (UN-HABITAT/UITP, 2010).

There are several barriers to effective and efficient transport including poor infrastructure management and planning frameworks, expensive road building projects, limited availability of and financing for public transport, traffic congestion and urban sprawl.

The privately operated informal sector takes a 90% share of public transport (UN-HABITAT/UITP, 2010) but these services are mainly concerned with maximizing profits rather than improving service provision, with unregulated fares and poor security. The urban poor can spend a lot of time and income travelling to work, especially those in unserved areas. Residents on the peripheries of cities can walk long distances to reach public transport. It is estimated that in Africa, only one quarter of the main road network is in good condition and about one quarter is fair. Only a quarter of rural roads are good or fair. The state of the roads in SSA accounts for more than 43% of public transport vehicle breakdowns (Trans-African Consortium, 2010) which makes improving public transport even more difficult.

Alternative options for financing transport need to allow routine maintenance to take place. Giving priority to bus services can be important but secondary and tertiary roads allow traffic to be more evenly spread out. Poor design means that in many cities, large lorries and trucks still pass through the city centre to industrial areas which causes damage to the roads and adds significantly to congestion.

## **STREET LIGHTING**

Reliable, comprehensive statistics for street lighting provision in rural and urban areas in Africa do not exist. The benefits of street lighting include; reduced fear of and actual robbery and assault, more night time trading, a better quality of life, more attractive inner city areas, more use of the road network thereby reducing daytime congestion and a boost to tourism.

Funding the installation of lighting is a major barrier. Fixed roadway lighting improves night-time visibility, but the costs are only justified if there is heavy traffic or high accident rates (CIE, 2007). Inspection, cleaning and maintenance is also essential for effective operation. Examples of successful street lighting initiatives in SSA have the potential to be replicated in other areas, e.g. the UNEP Enlighten Project working to light up urban roads in Kenya.

#### SOURCE

Medland, L, Amekudzie, S, Smout, I, Fisher, J, Cotton, A, Sansom, K, Ngouanet, C, Oteng-Ababio, M, Twarabamenye, E & Lazaro E (2014). "Mapping of Service Provision in low-income areas – Volume 1: Main Report". RurbanAfrica Deliverable D4.1, Department of Geosciences and Natural Resource Management, University of Copenhagen, Denmark

#### REFERENCES

AMCOW, 2012. A Snapshot of Drinking Water and Sanitation in Africa – 2012 Update Available at: [http://www.wssinfo.org/fileadmin/user\\_upload/resources/Africa-AMCOW-Snapshot-2012-English-Final.pdf](http://www.wssinfo.org/fileadmin/user_upload/resources/Africa-AMCOW-Snapshot-2012-English-Final.pdf)

CIE, 2007. Technical report: road transport lighting for developing countries, CIE.

Duncombe R, 2012. 'Understanding Mobile Phone Impact on Livelihoods in Developing Countries: A New Research Framework. Available at: [http://www.sed.manchester.ac.uk/idpm/research/publications/wp/di/documents/di\\_wp48.pdf](http://www.sed.manchester.ac.uk/idpm/research/publications/wp/di/documents/di_wp48.pdf)

Foster V and Garmendia CB, 2010. 'Africa's infrastructure a time for transformation'. World Bank. Available at: <https://openknowledge.worldbank.org/handle/10986/2692>

Eberhard A, Rosnes O, Shkaratan M, Vennemo H, Foster V and Garmendia CB, 2011. Africa's Power Infrastructure Investment, Integration, Efficiency. World Bank

Trans-African Consortium (2010): Overview of Public Transport in Sub-Sahara Africa. [http://www.uitp.org/sites/default/files/cck-focus-papers-files/Transafrica\\_UITP\\_UATP\\_PublicTransport\\_in\\_SubSaharan\\_Africa\\_2008.pdf](http://www.uitp.org/sites/default/files/cck-focus-papers-files/Transafrica_UITP_UATP_PublicTransport_in_SubSaharan_Africa_2008.pdf)

UN-HABITAT/UITP, 2010. Sustainable Mobility in African Cities , UN-HABITAT, Nairobi

UNESCO, 2012. Global Education Digest 2012. Opportunities lost: the impact of grade repetition and early school leaving. UNESCO Institute for Statistics

UNICEF JMP, 2012. Progress on Sanitation and Drinking-water: 2012 Update. Geneva, Switzerland: WHO and UNICEF Joint Monitoring Program for Water Supply and Sanitation.

WHO, 2007. Everybody's Business: Strengthening health systems to improve health outcomes. WHO's framework for action. Switzerland: WHO Document Production Services.

## WORK PACKAGE IDENTITY

### WORK PACKAGE NAME

Work Package 4 - Access to services in low-income city communities

---

### COORDINATOR

Ian Smout  
Water, Engineering and Development Centre,

John Pickford Building  
School of Civil and Building Engineering  
Loughborough University,  
Leicestershire  
LE11 3TU, UK

E-mail: [I.K.Smout@Lboro.ac.uk](mailto:I.K.Smout@Lboro.ac.uk)

---

This Briefing is a condensed summary of the above source. Contact the Work Package co-ordinator to request a copy of the report. Use the following citation if you wish to refer to this synopsis:

Medland, L, Amekudzie, S, Smout, I, Fisher, J, Cotton, A, Sansom, K, Ngouanet, C, Oteng-Ababio, M, Twarabamenye, E & Lazaro E (2014). "Mapping of Service Provision in low-income areas, RurbanAfrica Briefing No.4, 2014 , Department of Geosciences and Natural Resource Management, University of Copenhagen, Denmark

## **RurbanAfrica - African Rural-City Connections**

The African Rural-City Connections (RurbanAfrica) project explores the connections between rural transformations, mobility, and urbanization processes and analyzes how these contribute to an understanding of the scale, nature and location of poverty in sub-Saharan Africa. The RurbanAfrica project is advancing the research agenda on rural-city connections in sub-Saharan Africa by addressing a range of crucial components: agricultural transformations, rural livelihoods, city dynamics, and access to services in cities. Our aim is to generate new insights into the relationship between rural-city connections and poverty dynamics.

Published by: University of Copenhagen, November 2014

ISSN 2246-2007

Department of Geosciences and Natural Resource Management  
University of Copenhagen  
Øster Voldgade 10  
1350 Copenhagen K

Copyright: Author and RurbanAfrica

## **Contact**

Jytte Agergaard  
E-mail: [ja@ign.ku.dk](mailto:ja@ign.ku.dk)  
Tel.: +45 35322500  
[www.rurbanafrica.ku.dk](http://www.rurbanafrica.ku.dk)

Layout  
Kent Pærksen  
Department of Geosciences and  
Natural Resource Management  
University of Copenhagen

