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**WATER, SANITATION AND HYGIENE SERVICES BEYOND 2015:  
IMPROVING ACCESS AND SUSTAINABILITY**
**Acceptability of urban water, sanitation,  
electricity & transport services**

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*The quality and acceptability of services in a range of urban communities were investigated by the RurbanAfrica project. Research was undertaken through focus group discussions and interviews with individual residents in 30 settlements in six cities - Douala and Bafoussam in Cameroon, Accra and Sekondi-Takoradi in Ghana and Dar es Salaam and Arusha in Tanzania. Residents reported a multitude of challenges in meeting their needs for water, sanitation, electricity and transport. Overall, their highest priorities for improvement were urban transport and water supply, followed by sanitation. Electricity was the lowest priority overall, though it was still first or second priority in six of the 30 settlements. The lower priority for improving sanitation than water supply contrasts with reported coverage levels which are twice as high for water supply as for sanitation, suggesting that “coverage” by improved water supply does not imply an acceptable level of service.*

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**Introduction**

The general poor quality of urban services in Sub-Saharan Africa (SSA) is well known, but little research has been carried out on comparing different services. A study by the World Bank (Foster and Briceño-Garmendia, 2010) showed that physical infrastructure in Africa is generally less developed than in other low and middle income countries, and that poor infrastructure held back both social and economic development. They estimated annual funding needs for the different sectors as shown in Table 1, with about one-third needed for national infrastructure (e.g. the interurban trunk network, the national power interconnected system, major ports and airports), one-third for urban infrastructure and one-third for rural infrastructure.

<b>Sector</b>	<b>Capital expenditure</b>	<b>Operation and maintenance</b>	<b>Total needs</b>	
ICT	7.0	2.0	9.0	9.6%
Irrigation	2.7	0.6	3.3	3.5%
Power	26.7	14.1	40.8	43.7%
Transport	8.8	9.4	18.2	19.5%
WSS	14.9	7.0	21.9	23.5%
Total	60.4	33.0	93.3	100.0%

Source: Foster and Briceño-Garmendia (2010)

Note: ICT = information and communication technology; WSS = water supply and sanitation.

Row totals may not add exactly because of rounding errors.

An interesting feature of the proposed Sustainable Development Goals and Targets (SDGs) is the recognition of the importance of water, sanitation, electricity and transport services, as shown in Box 1. It is notable that the SDGs include energy and transport which did not feature in the Millennium Development Goals (MDGs), whereas water and sanitation are included in both.

### **Box 1. Water, Sanitation, Electricity and Transport Services in the SDGs**

From the Goals and Targets proposed by the UN (2014) the following relate in particular to water, sanitation, electricity and transport services:

Goal 6: Ensure availability and sustainable management of water and sanitation for all:

- 6.1 By 2030, achieve universal and equitable access to safe and affordable drinking water for all
- 6.2 By 2030, achieve access to adequate and equitable sanitation and hygiene for all and end open defecation, paying special attention to the needs of women and girls and those in vulnerable situations
- 6.3 By 2030, improve water quality by reducing pollution....
- 6.4 By 2030, substantially increase water-use efficiency across all sectors...

Goal 7 Ensure access to affordable, reliable, sustainable and modern energy for all

- 7.1 By 2030, ensure universal access to affordable, reliable and modern energy services

Goal 11 Make cities and human settlements inclusive, safe, resilient and sustainable

- 11.2 By 2030, provide access to safe, affordable, accessible and sustainable transport systems for all, improving road safety, notably by expanding public transport.....

Despite not being included in the MDGs, the energy and transport sectors in Sub-Saharan Africa (SSA) have received much greater levels of investment than water and sanitation, perhaps because of their significance for economic growth. According to a comprehensive review by Gutman et al. (2015), transport and energy each account for about 40% of SSA government budget allocations to infrastructure, and these are also the two major sectors for external funding of infrastructure from Private Participation in Infrastructure (PPI), Official Development Finance (ODF) and Chinese sources. The water and sanitation sector receives much less investment, estimated at 3% of government funding and less than 10% of external funding. The government funding figures do not include sub-national financing, e.g. by municipal authorities. The authors also noted the lack of a credible internationally recognised indicator for urban transport access, compared to the established metrics for access to electricity, telecoms, water and sanitation.

In contrast to the macro studies described above, this paper considers residents' perceptions of urban services, and a comparison between them. It presents the results of fieldwork on the quality and acceptability of water, sanitation, electricity and transport services in three case study countries: Cameroon, Ghana and Tanzania. The research was carried out under the EU RurbanAfrica project, Work Package 4 "Access to services in low income city communities" and is reported in detail by Smout et al (2015). It follows previous work under the project on patterns of service access, barriers and innovative or successful approaches which were reported by Medland et al. (2014a and 2014b).

### **Fieldwork**

Fieldwork was conducted in a total of 30 settlements in the six cities - Douala and Bafoussam in Cameroon, Accra and Sekondi-Takoradi in Ghana and Dar es Salaam and Arusha in Tanzania. Within each city, residential areas were selected to cover a range of settlement characteristics – older and newer areas, income levels and types of location and population movement. The fieldwork and data collection were done jointly with Rurban Africa Work Package 3 on City Dynamics, and details are described by Gough et al (2015).

A qualitative methodology was followed, using focus group discussions, semi-structured interviews and in-depth interviews. In general, four focus group discussions (FGDs) were held per settlement, one each for elderly males, elderly females, young males and young females, with 6 to 8 participants per group. In addition individual residents were purposively selected for semi-structured / in-depth interviews to ensure a wide range of participants, with a target of 20 to 25 interviews per settlement. Gough et al (2015) provides

more details of the focus groups and interviewees in each city, and the standard FGD and interview schedules.

The fieldwork findings were written up as Settlement Profiles (Gough et al 2015, Appendices) and the country teams completed a standard table on services for each settlement. This summarised the characteristics of the settlement and the findings related to access to services, quality of services and the focus groups' ranking of the services according to their priority for improvement.

## **Quality of services in major cities and secondary cities**

The range of quality issues for the various services is illustrated by the following quotes:

### **Water**

"It isn't all the houses that have water pipelines [but] I won't be able to explain why. It could be the decision of the landlords not to connect pipelines in their houses... There is no pipe in the house I live in, and in this area most of the people step out to fetch water and pay for it... Everyone drinks the sachet water. For about 3 weeks to 1 month the taps have not been flowing. When the taps are flowing they charge 20 pesewas for a gallon...[but] when the taps are not flowing they sell the well water for 40 pesewas per gallon". (41 years old- female, Accra New Town).

"No one is in need for Dawasco [utility]water unless the underground water goes dry. And we believe the underground water is much safer than the Dawasco water. And even the ground water has a better taste than the Dawasco water such that you will not even like the bottle water from the shop." (focus group participant in Mzinga, Dar es Salaam, quoted by Andreasen, 2015)

"Sometimes the water comes with a red colour... Generally, we drink the tap water here. The nearest well is far away. There are 2 points of sale of water in the area. During the dry season we are sometimes forced to [go to] the source, which is in the valley when the cuts become recurrent." (Kouogouo'o village, Bafoussam)

### **Sanitation**

"We, as tenants, have already informed the landlord about this filled up pit that need to be emptied, but he said that he has no money. When it was full to the brim to the point of not being used completely, the landlord told us to use the latrine in his own house, which is located approximately 40 metres from the place we live. This is very embarrassing, especially when one has a stomach upset. We have no choice but to continue being patient because every time we remind him, he says he has no money for the purpose and that "if you can't live in his house, you are free to go somewhere else" (interviewee, Madhukani Subward, Arusha)

"For toilets and sanitation, the first few months when I got here, I was going to relieve [myself] at the neighbour because the toilets in my house were destroyed. To solve this problem I agreed with the landlord to build toilets and pay rent 6000F for 3 months instead of 10000F month. Wastewater I pour into the yard and it runs off. Garbage these are the children duty; they take it two minutes from the house to a Hysacam dump that is responsible for removing it once a week." (male, 28, Ngouache Bafoussam)

"There are odour problems since the drains, showers and kitchens of some houses are directly connected to drains, that are what causes the discomfort throughout the settlement... Some inhabitants' pour their urine and sewage in gutters flowing to homes. This creates unbearable odours." (students, 22 and 19, Deido, Douala)

### **Electricity**

"To access electricity is somehow difficult. You are going to the office and you will be required to fill out the forms, which is accompanied by some kind of payments. From there you are supposed to get the connection permit, which are also having some payments. And sometimes someone may be required to pay extra money so as to fasten the service connection. If you are living very far from the electricity line then you will be required to pay for the electricity poles. So sometimes the easiness to get the electricity connection depends much on the financial ability of the user, as someone can process the electricity for even three days in presence of an extra payment." (focus group participant in Ununio, Dar es Salaam quoted by Andreasen, 2015)

"As you know, previously, they used to inform us before the lights went off but now it is not like that they can off it from morning 6am to 10pm and some people use freezer to sell iced-water, cocoa drink and that

gives them their daily bread. But with the current light off situation they can't work as before". (46 years old female focus group participant, Form four leaver, Trader, Kwesimintsim, Sekondi-Takoradi).

"Our current is okay but the cost of electricity is our problem. We don't like the prepaid meters we cannot cope with it. We should not be using prepaid meters because we have electricity and are supplying to other countries so we should not be using prepaid meters. It lasts for just a week and your credit is finished but with the post-paid meters it lasts for about a month before you have to go and pay, so we would really like it if the prepaid meters are removed from the system" (respondent in Gbawe, Accra).

"We have electricity shortage, over 10 houses, only 5 houses were electrified. Therefore, those who have electricity refused to share with the neighbours, fearing of dropping the tension at home. The shortage often lasts 3 hours and sometimes overnight.... Weekends it's worse.... Here there are only 2 milling machine, but they can no longer work....And darkness, increases insecurity.... There are also devices that burn out due to multiple shortages. The low voltage is so severe that you can't read. All Nguache and Kamkop have a transformer, so that the voltage is shared among several people. (5 male focus group participants, Nguache Bafoussam).

### **Transport**

"Apart from the main road leading to the town, the ones in the community have all deteriorated. Recently, they started attending to some portions with gravels and they added coal tar just last week. Our gutters are always choked with takeaway toilets and rubbish, and the water doesn't drain and it breeds mosquitoes. It is the rains that sometimes carry them away but to where I don't know". (37 years old male, Form 3 leaver, Driver- Kwesimintsim, Sekondi-Takoradi).

"The bike is the only means that is present, even if we suffer illness or to deliver we have to take the bike or to walk. In addition, the price increases depending on the road conditions and time. This is a serious neighborhood since some people leave this area to go far in the city for job and distance added to the bad road conditions make it job and shopping tough. Women have also developed a strategy to collect the money and needs of 2, 3 or 4 or more households to confer to a single person who shopped for all. ... I have lost a child in 2007 because the child fell ill at 11pm and I did not have a bike or a car, and the child died at 2am.... Sometimes we go out with two coats and two shoes: 1 out of the neighborhood and the other for city mobility.... Almost every day I'm late to school because motorcycles are not available.... I was working in Akwa but I had to leave because of the distance and cost of transportation since the fare is about 1500 to 2000 F per day and for a job that is paid to 40,000 CFA." (5 focus group participants, Cité-Beige, Douala)

"The problem here is that we are often late for appointments; it is not always easy to find the bike here inside. It is only when they drop somebody else that we can leave the area. We pay 100 FCFA on the bike to get to the tarred road. When it rains, it nearly doubles. By foot it takes 20 min. In the dry season, we suffer from the dust, and in the rainy season there is so much mud. (Kouougou'o village, Bafoussam)

### **Acceptability of services in major cities and secondary cities**

Relative acceptability of services was assessed by asking the focus groups and interviewees to rank them in terms of priority for improvement. The results for each settlement are summarised in Table 2 below.

The table shows that overall, urban transport was the highest priority service for improvement. Water supply was the second priority overall, and sanitation the third priority, though sanitation was the highest priority in Accra and joint highest in Douala. Electricity was the lowest priority overall, and ranked third or fourth in all six cities. Respondents also mentioned health, education and several other services as priorities for improvement, as listed in the table.

Table 2 also shows that the priority services for improvement were similar in both the major cities (Douala, Accra, Dar es Salaam) and the secondary cities (Bafoussam, Sekondi-Takoradi, Arusha).

Country	City	Number of settlements	Water supply	Sanitation	Electricity	Urban transport	Other priorities
Cameroon	Douala	5	4	1=	3	1=	Security, games centre, health centre, schools
	Bafoussam	5	2	3	4	1	Health centre, security, public lighting
Ghana	Accra	5	2	1	3	4	Mobile phone signal
	Sekondi-Takoradi	5	1	2	4	3	Mobile phone signal
Tanzania	Dar es Salaam	7	2	3	4	1	Health, education, phone network
	Arusha	3	2	3=	3=	1	Education, health facilities, drainage, solid waste management
Overall		30	2	3	4	1	

Note: Rank of 1 = highest priority for improvement

## Discussion and conclusions

Residents across 30 settlements with a range of characteristics in six cities reported difficulties accessing water supply, sanitation, electricity and transport services and various problems with the quality of all four services. As well as the universal “access” to services included in the SDG targets, it is clear that there is also a challenge of providing services of sufficient quality to meet residents’ needs and expectations.

Overall, residents’ highest priority for improvement was urban transport and it was the first or second priority in 15 of the 30 settlements. In particular they highlighted the need for road improvements to enable public transport routes to be extended into settlements and to reduce congestion. These improvements will need to include drainage and ongoing maintenance to prevent subsequent deterioration. Although the SDGs include “accessible and sustainable transport systems for all”, the lack of a credible internationally recognised indicator for urban transport access seems to be an issue for monitoring progress.

Water supply was residents’ second priority for improvement overall, and it was the first or second priority in 16 of the 30 settlements. Most settlements currently use a range of sources (including utility supplies, boreholes, private vendors and rain water), with residents reporting poor quality of water from many of them (e.g. colour and smell, stomach complaints and cholera outbreaks). There are also access problems with frequent interruptions to utility water supplies, queues at wells and complaints about costs.

Sanitation was the third priority for improvement overall, and first or second priority in 11 of the 30 settlements. There was a range of facilities and practices reported, from flush toilets connected to sewers, to use of plastic bags or open defecation, but most people used household level improved or unimproved latrines, shared latrines, or public toilets. Problems were reported with privately-owned public toilets (cost, toilets locked at night, cleanliness) and with pollution from disposal of excreta in the local environment.

The lower priority for improving sanitation than water supply contrasts with the existing urban coverage levels in the three countries of 15-46% for improved sanitation compared to 77-91% for improved water supply. The results suggest that “coverage” by improved water supply does not imply an acceptable level of service, reinforcing the SDG target of “equitable access to safe and affordable drinking water for all”.

Electricity was the lowest priority overall, though it was still first or second priority in six of the 30 settlements. Access is an issue in some settlements, especially those at a distance from the national grid. Power cuts and low voltage were widely reported, causing impacts on small-scale enterprises and damage to appliances, though residents seemed to regard scheduled power cuts as acceptable. The introduction of ‘prepaid meters’/the shift away from ‘post pay’ billing is an area of concern for low-income residents.

There were differences in the accessibility and quality of services in different types of settlement but the priority services for improvement were similar in both the major cities and the secondary cities, in both lower-income and higher-income settlements, and in both stable and rapidly growing settlements.

The provision of services may make an area more attractive for affluent people and tenants, fuelling population growth, as shown by examples from Dar es Salaam. It was found however that landlords may restrict tenants' access to water and sanitation, for example in Accra, Sekondi-Takoradi, Douala and Arusha, with the result that access problems are more acute for private tenants than homeowners. This is due to landlords preventing tenants from using the facilities at the premise, or charging them to use water supply or sanitation in addition to their rent.

As residents considered that sanitation and electricity were third and fourth priority for improvement, it appears that they found the existing sanitation and particularly electricity services to be more acceptable than transport and water supply. This may be a matter of how services relate to their livelihoods and expectations. Long, costly and unpredictable travel times and unreliable water supplies may cause greater daily inconvenience than power cuts or poor access to latrines, which residents are accustomed to. Similarly people may find poor sanitation or low voltage electricity supply more acceptable than badly smelling water. Nevertheless, serious sanitation problems were reported in some settlements such as full latrines, discharges into open drains etc. and sanitation was rated first or second priority in Accra and Douala and in one-third of the settlements across all 6 cities. Electricity may be seen as a higher order service which can wait.

There are also the issues of how scale and external support influence perceptions and responses. Roads and water supply are communal, infrastructure-based services for which households have to rely on external support and investment, whereas sanitation is seen as a private issue with problems (such as affordability of public toilets and restrictions by landlords) that people have to manage themselves on day to day basis.

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## References

- Andreasen, M H (2015) Appendix 6: Dar es Salaam Settlement Reports in Gough et al (2015)
- Foster V and Briceño-Garmendia C (2010) Editors *Africa's Infrastructure: A Time for Transformation*, World Bank
- Gough, K.V., Andreasen, M. H., Esson, J., Mainet, H., Namangaya, A. H., Yankson, P. W. K., Agergaard, J., Amankwah, E., Kiunsi, R., Møller-Jensen, L., Yemmafouo, A. 2015. "City dynamics: mobility and livelihoods of urban residents" *RurbanAfrica Deliverable D3.2*, Department of Geosciences and Natural Resource Management, University of Copenhagen, Denmark
- Gutman J, Sy A, Chattopadhyay S (2015) *Financing African Infrastructure - Can the World Deliver?* Brookings Institution, USA
- Medland, L, Amekudzie, S, Smout, I, Fisher, J, Cotton, A, Sansom, K, Ngouanet, C, Oteng-Ababio, M, Twarabamenye, E & Lazaro E (2014a). "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
- Medland L, Smout IK, Ngouanet C, Oteng-Ababio M, Twarabamenye E, Lazaro E, Amekudzie S, Fisher J (2014b). "Access to services in low income urban communities in Cameroon, Ghana, Rwanda and Tanzania". In R Shaw (Ed) *Sustainable Water and Sanitation Services for All in a Fast Changing World*, NUCE, Hanoi, Vietnam, 15 - 19 Sep 2014. WEDC, Loughborough University, UK.
- Smout I, Kiunsi R, Ngouanet C, Oteng-Ababio M, Esson J, Fisher J, Yemmafouo A, Namangaya A (2015). "Urban residents' access to water, sanitation, electricity & transport and the acceptability of services". *RurbanAfrica Deliverable D4.2*, Department of Geosciences and Natural Resource Management, University of Copenhagen, Denmark
- UN (2014) *Open Working Group Proposal for Sustainable Development Goals*. Available from <https://sustainabledevelopment.un.org/index.html> [viewed 12 June 2015].

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