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IMPROVING ACCESS AND SUSTAINABILITY

Effect of poor performance of water utilities in Port Harcourt city, Nigeria

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This paper presents the impacts that the poor performance of the Rivers State Water Board (RSWB) had on the residents of Port Harcourt city, Rivers State, –Nigeria. Using questionnaires administered to residents of the city, a study found that only 4.5% depended solely on the RSWB to meet their water needs. This very poor performance by the utility, residents resorted to self-service by drilling individual boreholes and using informal vending services. As a result of this, 78% of respondents depended solely on boreholes, 13% on informal vendors. 4.5% relied on the RSWB and still had boreholes. This paper discusses these access and quality of service issues, and highlights recent reforms in Rivers State.

Introduction

Water is a source of life and well-being. Due to the importance of this resource, national governments have commissioned regional governments and ministries to provide water for their citizens, however, many developing countries still struggle with providing this very basic service. The task of delivering piped water services to cities in these countries remains enormous, especially when coupled with ever increasing rates of urbanization.

In the Federal Republic of Nigeria, all thirty-six states of the Federation and the Federal Capital Territory have Water Boards/Corporations or Public Utilities Boards managing their public water supply undertakings (FMWR, 2000). State governments via regulations, policies and related programmes are encouraged to combat this challenge of providing potable water supply to the residents of their states. Rivers State with capital city – Port Harcourt is not left out; its water board originally started in the late 1940s, half a century later, cannot boast of adequate public water supply services.

Rivers State with its capital city of Port Harcourt is no exception. According to the 2006 national census, the population of Rivers State was 5,185,420, while that of Port Harcourt (for the purpose of this is inclusive of Port Harcourt and Obio Akpor Local Government Areas (LGAs)) was 1,382,592. The growth rate of this city is placed at 3.4% per annum, with the city covering 32,781 hectares of Rivers State land. Although its water board was established in the late 1940s, half a century later, it cannot boast of adequate public water supply services.

Boreholes are a common feature in homes in Port Harcourt (PH), either for primary or complimentary water supply particularly in the state capital and its environs. This suggests less reliance or dependence on the established RSWB which was meant to service its populace with sufficient portable water.

Traditionally, the function of Water Utility Management (WUM) is basically to provide water supply services to the urban areas, although as mentioned above many utilities and municipalities have failed to provide these services effectively. Some of the challenges of WUM as analysed by Marin (2009) in four dimensions of performance of water utilities include access, quality of service, operational efficiency and tariff levels. This paper focuses on issues of access and quality of service with respect to Port Harcourt.

Figure 1. Map of Rivers State Nigeria showing Port Harcourt and Obio-Akpor local government areas

Source: google.com

Access

The issue of access to urban water service refers to the population of people who are served with piped water from the utility. In developing countries urban water supply services have been provided by state-owned water utilities (Ginneken & Kingdom, 2008), and many of these utilities and municipalities have failed to provide services to as much as 50 to 80 per cent of the households in their urban areas (Samson, 2012). This may be attributed to the rapid flow of a country's population from rural to urban areas, thus making enormous demands on and for urban infrastructure. Many developing countries are not able to provide for the existing urban population (Sansom, 2012), let alone the influx. This is a major issue affecting the improvement of water and sanitation services in developing countries (ibid). In Kenyan urban areas for example, rapid urbanization resulted in constantly-decreasing coverage and service delivery (MWI, 2007).

Ezeah (2012) and Efe (2013) also agree that urbanisation has a major effect on the proper management of basic infrastructure such as solid waste management.

Quality of service

According to Marin (2009), the ability of a water utility to provide an uninterrupted supply of piped water is probably the most important determinant of the quality of service. A common problem experienced by customers, mainly in South Asia and Africa, is intermittent water supplies, where water is not available for 24 hours a day, seven days a week (Sansom, 2012). Poor continuity experienced in some countries reduces operating efficiency because lower volume of water is available to the users and so revenue generation is low. Countries with reasonable continuity of water supply have better services and customers are more likely to have increased willingness to pay their bills (Sansom, 2012).

Again, quality of service may refers the level of treatment of the water provided. Issues of level of treatment meted to water are dependent on factors like quality of the raw water, cost of treatment, use of water etc.

The issues of access to water utility services in Port Harcourt, and quality of services offered by the RSWB are described further. The impact of reduced access and poor quality service is revealed through formal interviews with staff of the RSWB and consumers of water in Port Harcourt.

Materials and methods

Primary data were obtained from a variety of sources including formal interviews with key informants from the utility, while secondary data were obtained from published and unpublished documents such as textbooks, journals, public and private records and reports. For effective analysis, the city was divided into two; the older Port Harcourt town and its environs, and the newer developments. Questionnaires were then administered to members of the Port Harcourt public. A total of four hundred and fifty (450) respondents responded to questionnaires. The findings of this study were validated by ensuring that data obtained from interviews was triangulated by cross-interviewing key informants.

Results and discussion

Access to and continuity of service

From the frequency distribution shown in Figure 1, it is observed that 60% has never been provided with water services. This could be attributed to the rapid urbanisation of the city without commensurate expansion in the network facilities. This shows that as the city expanded and grew, the coverage of the water network appeared to shrink, making the resource scarcer, similar to what occurred in Kenya (MWI, 2007).

Meanwhile, 31% of the population had been served at some time in the past but no longer enjoyed that service. The implication of this is that while urbanisation took place, not only were services not increased to meet the demand, but the available service also declined. Services declined due to lack of proper maintenance of utility's assets (Wami, 2014), this corroborates the findings by Otun et al (2011) that poor asset management is among the causes of asset deterioration in Nigeria.

Typical examples of this as obtained from key informants during interviews include; the damage to the Rumuola Mega station - Rumukurushi substation transmission pipelines during a road construction project and its non-repair til date; the damage to Rumuola Mega station - Trans-Amadi station transmission pipelines also during a road construction project, and the excessive leakages at the Diobu booster station which threatens surrounding buildings which resulted to the valves being shut off.

The user survey also revealed that services were available to only 9% of respondents. This implies that 91% of the respondents (being the sum of those to whom services were once provided and those to whom services were never provided) do not enjoy water service provision.

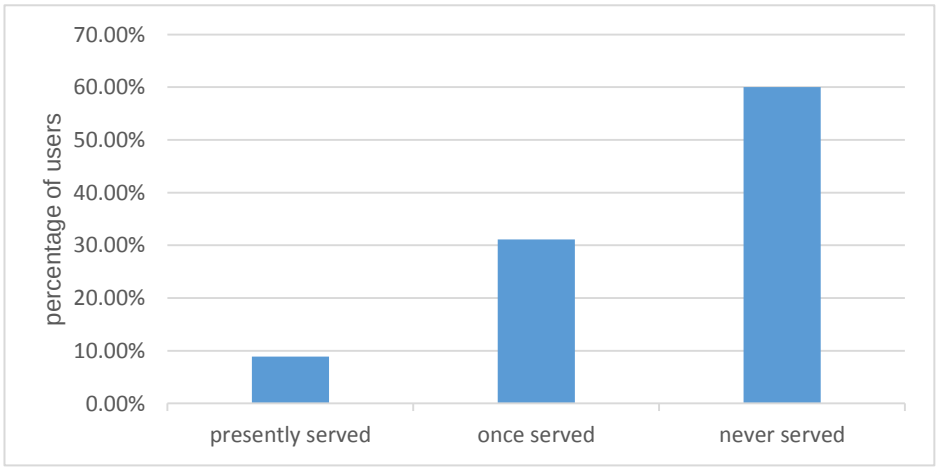

Figure 2. Overview of service provision

Furthermore, the survey also revealed that of the 9% that enjoyed water supply service, only half of these were served for up to eight hours a day (and this was only at the pilot area- Eagle Island). The other half got water services twice a week for few hours a day.

This reflects the decline and very low level of service provided. It was noted that this decline was reported by service users to have occurred from the late 1980s.

For the 60% of respondents that have never been served, the issue is that there was no water board presence in their area; transmission lines had not been extended to many areas of the city, especially the new developments. The distribution network did not expand as the population rapidly grew, the result of which was a rapidly urbanized city with a reticulated network coverage area of 15% according to key informants.

Coping strategies

This study found that as a means of coping with these evident shortfalls of the RSWB, the city residents resorted to self-supply as a means of survival. Figure 2 is a frequency distribution showing the various coping strategies of the residents.

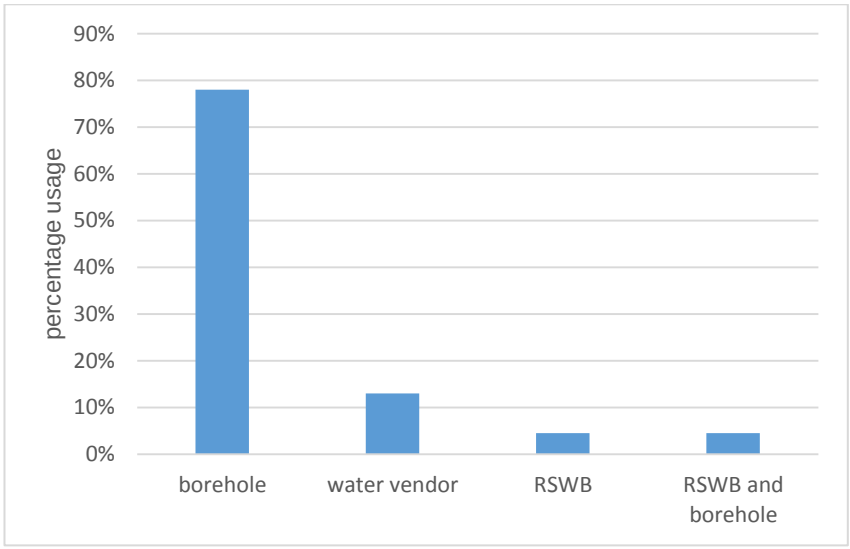

Figure 3. Sources of water in PH

- **Boreholes:** 78% of the respondents obtained water from boreholes either within their own compounds or from neighbours which they had to buy. This explains the presence of overhead tanks, into which water from boreholes are pumped into for storage, seen all over the city. It is an indication of the poor performance of the board hence the need to self-supply.
- **Water vendors:** Informal water vendors, locally known as *meruwa* were responsible for delivering water on hand-pushed carts to 13% of the respondents. The carts usually contained 10-12 jerry cans of 20-litre capacity. Water was purchased from borehole owners and private sellers, usually around the neighborhood, and delivered to those who did not have boreholes in their compounds, or water piped into their homes.
- **RSWB and boreholes:** 4.5% of the respondents who had access to the RSWB service still had boreholes on their premises. This they attributed to the unreliability of the RSWB service, and so used their boreholes whenever they did not receive water utility services. These were respondents mostly in the Diobu area. According to these residents, the RSWB provided water to them water three times a week. The services were less than satisfactory, thus people resorted to whatever worked for them.
- **RSWB:** Only 4.5% of respondents relied solely on the water board for their water needs. These were respondents in the Eagle Island area which had a production station that was independent of the Mega station producing and distributing water within the Island. However, the connections were not metered nor were bills collected from users. This area is well reticulated and is being preserved as a pilot for ongoing reforms.

Since water is essential for life and health, residents of the city who could afford to drilled boreholes for their families, as did landlords for their tenants, as a means of coping with the ineffectiveness of the RSWB.

Current reforms

While this is so, the Rivers State Government is presently reforming the water sector first by repealing the water board law of 1989, in 2012. A water policy has been set-up which provides for a corporate water utility (Port Harcourt Water Corporation) for the city, Rivers State Small Towns Water Supply and Sanitation Agency (RSSTOWA) for small towns, Rivers State Rural Water Services Regulatory Commission (RSRWSRC) for rural areas and a regulatory commission, among others. A new water law has also been passed. Capacity building training has been provided by Sustainable Water Agency for sub-Saharan Africa, a subsidiary of the USAID non-governmental agency (SUWASA-USAID) for the Ministry of Water Resources and Rural Development (MWRRD) and Port Harcourt Water Corporation to enable an understanding of their new roles and responsibilities.

This paper reveals that the due to the poor performance of the utility, the city's residents resorted to self-service – filling the city with boreholes and overhead tanks. A further implication of this poor performance is that while people may afford to drill boreholes to meet their need, they may not be able to properly treat the water produced as required the water produced.

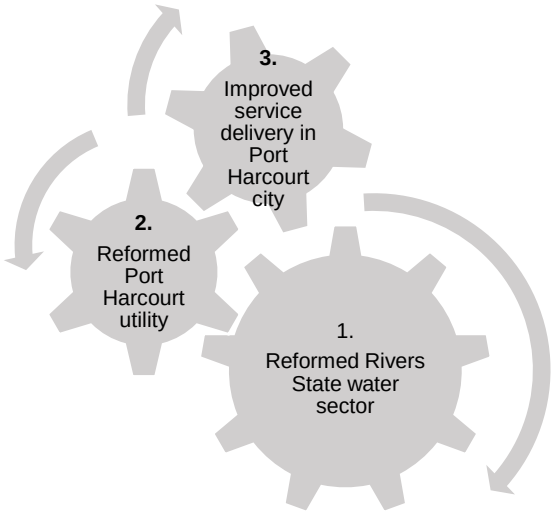

Figure 4. A compound gear system illustrating the potential effects of water sector reforms

Source: WAMI, 2014

Conclusion

While the poor performance of the utility led to indiscriminate sinking of boreholes all around the city, other implications of the poor performance may include over abstraction of groundwater and possibly saltwater intrusion. For property owners, the absence of a borehole would reduce potential tenants and buyers' willingness to pay for the property, which is the market value of a property. For those who cannot afford to drill boreholes, they must patronize the informal vendors, ensuring that they have large storage containers at home. Not to mention the health risk as the hygienic condition of the 20-litre jerry cans usually used by the informal vendors cannot be ascertained.

Recent efforts by the state government are still very much in their infancy and therefore its level of success cannot be adequately measured. However, these reforms in the Rivers State water sector have the potential to have a compound gear system-effect as illustrated in Figure 3. That is, continuous reformation in the water sector (1) will drive the wheel transforming the Port Harcourt water utility (2), this will in turn drive improved water utility performance (3), thus ensuring accessibility to all, customer confidence, satisfaction and sustainability of the sector reforms and the utility.

References

EFE, S. I. (2013). *Waste Disposal Problems and Management in Ughelli,* Nigeria. Journal of Environmental Protection, 4, pp.4-11.

EZEAH, C. and ROBERTS, C.L., (2012). *Analysis of Barriers and Success Factors Affecting the Adoption of Sustainable Management of Municipal Solid Waste in Nigeria.* Journal of Environmental Management, 103, pp.9-14.

FWRM, (2000). *National Water Supply and Sanitation Policy.*1st Edition. Abuja, Nigeria: Federal Ministry of Water resources.

GINNEKEN, M and KINGDOM, B., (2008). *Key Topics in Public Water Utility Reform.* Water Working Notes Vol. 17. Washington DC: World Bank

MARIN, P., (2009). *Public-Private Partnership for Urban Water Utilities. A Review of Experiences in Developing Countries.* Trends and Policy options no.8. Washington DC: World Bank, pp 69.

MWRRD (2012). *Rivers State Water Policy*. Rivers State Government: Ministry of Water Resources and Rural Development

MWI, (2007). *Water Sector Reform in Kenya and the Human Right to water.* Kenya: Ministry of Water and Irrigation.

OTUN, J. A., OKE, I. A., and OGUNTUASE, A. M., (2011). *Issues and Challenges of Decaying Urban Water Infrastructure in Nigeria.* 35th WEDC International Conference. Loughborough, UK: WEDC, UK.

SANSOM, K., (2012). *Water Utilities Management.* Unpublished Programme Module Note, Loughborough, UK: WEDC, Loughborough University

WAMI, M., (2014). *An overview of Public Water Services in Port Harcourt,* Nigeria. Unpublished MSc Dissertation, Loughborough University, UK.

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