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MEETING THE MILLENNIUM DEVELOPMENT GOALS (MDGs) TARGETS FOR WATER AND SANITATION IN URBAN AREAS OF AFRICA: THE EXAMPLE OF AKURE, ONDO STATE, NIGERIA

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Abstract

Urban services, such as transport, water, sanitation and urban drainage, have been recognized as critical to ensure the quality of living and sustainable urban development in contemporary times. This paper examines the existing water supply and sanitation situation in Akure, Ondo State, with a view to determining extent of deficiency and what will be required to meet the MDGs safe drinking water and sanitation target in 2015. The data utilized in the article were derived from a systematic survey of households' characteristics, indicators of accessibility to safe water, sources, quality and quantity of available water, and sanitation services in the city. The basic data set for the paper was therefore collected using a structured questionnaire administered on selected household's heads in Akure. In addition, water supply and sanitation facilities were surveyed and other relevant materials and data were sourced from published sources. The paper reveals that majority of residents of the city depend on other sources of water supply apart from piped water from public sources that may not be safe for human consumption. The paper therefore recommended a re-invigoration of water supply machinery in the state including developing new water pipeline to replace the existing old and outdated networks and improvement in sanitation activities.

Keywords Millennium Development Goals, Safe drinking water, sanitation services,

INTRODUCTION

The problem of inadequate supply of safe drinking water and sanitation services has been well elucidated and documented in the literature. Recent studies indicate that at least 250 million households worldwide have no access to piped water; 400 million lack adequate sanitation. The poor are more affected and live in areas without sewerage or sanitation facilities (UNCHS (Habitat)/UNEP, 1998). In Africa, UN Habitat estimates that over 70 percent of urban population suffers shelter deprivation in terms of inadequate housing, water supply, or sanitation (Kessides, 2006). The precarious water situation in developing countries motivated the world community in its millennium declaration to include improved provision for water and sanitation. Thus, there is now recognition that the scale and depth of deficiencies in water provision in urban areas have been underestimated and that improved

urban provision is an important part of meeting the MDGs (UN, Habitat, 2003). Thus, there are hundreds of millions of urban dwellers whose unmet needs for water, sanitation, health care, and schools will have to be addressed if the MDG targets are to be met. One of the targets of MDG designed to ensure environmental sustainability seeks to half the proportion of people without safe water and basic sanitation between 1990 and 2015. In Nigeria, the Fourth National Development Plan indicates that the problem of water sector in the country includes inadequate supply and distribution and low quality of water supply and sanitation.

In Ondo State, where Akure is situated, several attempts have been made to improve water supply and ensure water security in the State. These effort embrace construction of dams, provision of water networks in major cities of the state, construction of boreholes by several organizations and individuals, as well as the release of constituency allowance to legislators to construct boreholes in their localities. Other efforts embrace the construction of solar operated boreholes by the Ondo state government, among several others. Despite these efforts, access to safe water is still a major problem facing majority of people in the state. The state government acknowledged in 2003 that only 4 percent of the population of the state has access to safe drinking water from public sources. This poor access to safe water has a lot of implications for sustainable development

Thus, to be able to achieve the laudable MDGS target 10 that seeks to halve the proportion of the population without safe and basic sanitation and ensure water security in Africa, there is need for a better and richer understanding of the existing water supply and sanitation services situation, especially in context of rapid urban growth that is prevalent in Sub-Sahara African countries. Consequently, this paper examines the existing water supply and sanitation situation in Akure, Ondo State with a view to determining the extent of deficiency and how the MDGs safe drinking water target can be achieved in 2015.

CONCEPTUAL CONSIDERATIONS AND RELEVANT LITERATURE

The role of social infrastructure, such as safe drinking water in societal welfare and development, has long been recognized. According to Brown (2003), infrastructure is regarded as “the systematic framework which underpins community’s ability to fulfill its mission of providing a base for its citizen to be productive and to nurture social equity”. It is a kind of public trust of commonwealth, upon which every citizen relies and draws for prospect and day to day socio-economic opportunities. When it functions efficiently, the whole society benefits and the resultant effect is manifested on the growth and development of the community. When it functions below expectations, everybody pays in kind and cash (Akinola, 2000).

Water supply, like energy, capital, and communications, is a very important infrastructural pre-requisite for sustainable development. Apart from its primary role in enhancing human health and feeding, it is equally important for industrialization and commercial developments (Olokesusi, 1987). Critical shortage of water, not only inhabit or stop economic development, but also directly damage the health of the city's people (UNCHS (Habitat/UNEP, 1998).This is why Pickford (1981, cited in Olokesusi,1987) contended that "without water, there is no life". He cautioned that bad water could be almost as harmful as no water at all.

The World Water Council in 2005 declared that 1.1 billion people lack access to safe drinking water; 2.6 billion people lack adequate sanitation; and 1.8 million people die every year from diarrhea diseases, including 90% of children under 5. This situation is no longer bearable. Based on the above, the United Nations formulated the Millennium Development Goals, dedicated to reduce poverty and ensure sustainable development. The goals ranged from halving global poverty and hunger to protecting the environment, improving health and sanitation, and tackling illiteracy and discrimination against women.

In Nigeria, virtually all urban areas suffer water supply shortages relative to demand. The public water supply is erratic, intermittently unreliable, and, in some cases, inaccessible, thus resulting in high dependency on supplementary sources. The challenges facing the Nigerian water sector, according to Bukar (1997, cited in Akinola, 2000), include lack of organizational structure of the State Water Agencies (SWAs); legal framework problem; insufficient funding; inappropriate technology; and lack of trained and motivated manpower, among others.

In an attempt to ally the fear of the poor not being adequately served under the "users pay principles", Franceys (1993) opines that urban water supply should be financed through rising block tariffs with an affordable household 'lifeline' charge for an 'adequate' supply, rising to average increment costs of metered users, who wants household connections. He concluded that only then is it possible to achieve the vital institutional improvements and hence sustainable water supply because there is hope for the necessary funding being available. Kalbermatten (1999), on the other hand, emphasizes that if low-income users are to benefit from service under this principle, technologies and methods that lower the cost of services must be used.

In 2008, the United Nations officially launched the international year of sanitation to accelerate progress for 2.6 billion people worldwide who are without proper sanitation facilities. Every year, inadequate water, sanitation, and hygiene contribute to the deaths of 1.5 million children. Despite significant efforts of governments, progress on sanitation targets has been slow and uneven.

In general, available literature indicates that water supply institutions have failed because of their place within politically controlled government departments of municipalities. WASH (1988, cited in Franceys, 1993)) suggests institutional development is dependent upon organizational autonomy, leadership administration and management, commercial and consumer orientation, and human resources. Franceys (1993), concludes that organizational autonomy (within a politically controlled framework of responsibility and authority) is a necessary pre-condition to effective water supply. To be sustainable, water supply requires revitalized institutions that would have control over finances.

Besides, the most notable recent international event to draw attention to water issues was the UN World Summit on Sustainable Development (UN-WSSD) in Johannesburg in September 2002. At this meeting, the world leaders re-affirmed their commitment to UN Millennium Development Goals on environmental sustainability and its indicator on having, by 2015, the proportion of people, without sustainable access to safe drinking water (Sullivan, et al., 2003). Also at this summit, the world leaders endorsed water as one of the UN secretary, General Kofi Annan's, five WEHAB (Water, Energy, Health, Agriculture and Biodiversity and Ecosystem Management))priorities; the other priorities being energy, health, agriculture, and biodiversity. They also recommitted to the Millennium Development Goal target on water (Brown, 2003). Specifically, the summit called on the UN member states to develop integrated water resource management and water efficiency plans by 2005. Paradoxically, only about 12 percent of countries have done so to date (World Water Council, 2005).

In realization of the importance of water to the achievement of the Millennium Development Goal (MDGs), donors have committed significant resources to improve access to water. For example, the European Union has pledge to increase more than one billion Euros it already spends on water projects, particularly in Africa and the commonwealth of independent state countries. In addition, the "water for the poor initiative" of the United States of America seeks to expand access to clean water and sanitation services, improve watershed management as well as increase water supply to industrial and agricultural activities in less developed societies.

DATA AND METHODS

The scope of this article requires a comprehensive data set containing variables on the economic, social, and demographic variables of households as well as indicators of Water and Sanitation Condition and characteristics including sources, costs, quality, and their accessibility to adequate safe water and basic sanitation in the study area. The basic data set utilized in this paper was, therefore, collected using a structured questionnaire administered to selected residents of Akure. Systematic sampling technique was used to select buildings at intervals of every tenth building in the nine wards into which the city was stratified. In all, a total of 1,266 questionnaires were administered to households' head in the city. Data were collected by face-to-face interview.

In addition, other relevant materials and data were sourced from published sources, such as the report of the survey of housing units in selected urban towns in Ondo State by Ondo State Ministry of Finance and Economic Planning, Akure, journal articles, newspapers, textbooks and the Internet, among others.

The Study Area

Akure, the setting for the study, is a traditional Nigerian city and, like other traditional Yoruba towns in the country, it existed long before the advert of British colonial rule in Nigeria. The city is located within Ondo State in the South Western part of Nigeria. Akure is a medium- sized urban center and became the provincial headquarter of the Ondo province in 1939. It also became the capital city of Ondo State and a Local Government headquarters in 1976. Consequently, there was heterogeneous massing of people and activities in the city (Ministry of Works and Housing, 1980). The city's morphology has changed over time to assume its present status with its attendant Water and Sanitation Condition problems, as experienced in similar medium sized urban centers in Nigeria. Akure is located approximately 700 kilometers southwest of Abuja, the Federal Capital of Nigeria, and about 350 kilometers to Lagos, the former capital of Nigeria. It is located within the tropical rain forest region of Nigeria, where rainfall is high through the year. The increased relative political influence of Akure as a state capital since 1976 has greatly promoted its rapid growth and increased socio-economic activities. The population of the city grew from 38,852 in 1952 to 71,106 in 1963. Its population was estimated to be 112,850 in 1980 (DHV, 1986) and 157,947 in 1990 (Ondo State of Nigeria, 1990). The 1991 national population census, however, put the population of Akure at 239,124 and its estimated population in 1996 was 269,207 (NPC, 1996). At present, the city is estimated to have over 400,000 people.

Socio-Economic Characteristics of Respondents and Water and Sanitation Condition in Akure

Table 1 depicts the pattern of the income structure of the respondents as obtained from the field investigation. Analysis of Table 1 shows that a high proportion of the respondents (75%) earned below ₦ 15,000 monthly. In other words, majority of respondents (75.6%) can be classified as low-income earners, while about 20% can be classified as middle-income earners. The remaining householders (4.6 percent of the sampled population) are therefore under the high-income group. This result shows that majority of householders or residents of the study area are low and medium income earners. This pattern of income distribution has a lot of implications on residents' ability to access potable water supply, especially where they are required to pay for it and where they need to provide their own water.

Table 1: Income profile of households' heads in Akure

Income (Naira)	Frequency	Percent	Cumulative Percent
Below 6,000	325	29.6	29.6
6,001 – 10,000	247	22.5	52.1
10,001 – 15,000	258	23.5	75.6
15,001 – 20,000	122	11.1	86.7
20,001 – 25,000	61	5.6	92.3
25,001 – 30,000	34	3.1	95.4
30,001 – 35,000	10	.9	96.3
35,001 – 40,000	17	1.5	97.8
ABOVE 40,000	24	2.2	100.0
Total	1098	100	

Source: Field Survey, 2005.

With regards to sources of water in the city, table 2 shows the major sources of water supply in Akure. Analysis of the table shows that the majority of residents of the city depend on wells for their water supply. This constitutes 65.7 percent of all residents in all the houses in Akure. This is followed by those categorized as others (19.5 percent) which include springs, brooks, rain, streams, and, in some cases, public tap. Boreholes and pipe-borne water accounted for 6.0 and 8.3 percents of water supply in Akure, respectively. The implication of this is that majority of residents of the city depend on water supply from unsafe sources, thereby contributing to lowering the quality of life and environment of the city.

Table 2: Source of Water Supply in Akure

S/No	Source of Water Supply	No of Houses	%
1	Pipe Borne Water	2,391	8.3
2	Boreholes	1,733	6.0
3	Wells	18,959	65.7
4	None	5,637	19.5
5	Others	126	0.4
	Total	28,846	100

Source: Ondo State of Nigeria, 2003.

On the type of toilet facilities, Table 3 shows that the highest percentage (41.31) of buildings in Akure is provided with pit latrine. This is closely followed by the water closet (35.38 percent). The table also shows that 23.25 percent of all buildings in Akure lack any form of toilet facilities. The fact that 35.38 percent of buildings in the city and

another 23.25 percent of all buildings do not have any form of toilet facilities indicate that the majority of buildings in the city is substandard and that many residents of the city will defecate any where and cause environmental problems.

Table 3: Type of Toilet Facilities in Akure

S/No	Type of Toilet	No of Houses	%
1	Water Closet	10,204	35.38
2	Pit latrine	11,914	41.31
3	None	6,707	23.25
4	Others	21	0.07
	Total	28,846	100

Source: Ondo State of Nigeria, 2003.

Another indicator of Water and Sanitation Condition quality is the refuse collection and disposal system. On the method of refuse collection and disposal in the city, the Waste Management Authority is responsible for collection and disposal of waste from 31.2 percent of all the buildings in the city (see Table 3). 55.1 and 11.8 percents of waste generated in the city are disposed of by dumping them on a dump site and by burning, respectively. These methods are not only unhealthy, but destroy and pollute the environment.

Table 4: Solid Waste Disposal Method in Akure

S/No	Method of Disposal	No of Houses	%
1	Waste Management Van/Point	9,013	31.2
2	Dump Site	15,903	55.1
3	Burning/Incineration	3,400	11.8
4	Others	531	1.8
	Total	28,846	100

Source: Ondo State of Nigeria, 2003.

Water and sanitation Facilities and Accessibility in Akure

Water supply to the city is sourced from the old Owena water scheme that has been in operation since 1965 with a design capacity of 9,900 M3 day−1 (9,900 cubic metres per day). This is augmented by the River Ala Alagbaka estate scheme that involves abstraction of about 1,350 M3 day−1 design capacity. Field investigations also revealed that the existing water mains were construction in 1965, about 45 years ago. Attempts in 1988 by the World Bank, Federal Government of Nigeria, and Ondo State government to study and upgrade existing facilities

did not materialize. Thus, public water supply to the city still depends on these sources designed to meet the needs of the city in the 1960s when the population of the city was about 71,106, according to the 1963 national population census in Nigeria. The result is that the water pipe network is not available to most parts of the city with a significant proportion of the city's population depending on unsafe sources of water supply. Only the central area that was built before 1970 is served by water main from the public source. The public water supply is erratic, intermittently unreliable, and, in some cases, inaccessible, thus resulting in high dependency on supplementary sources.

In 1976, there was only one major source of water supply to Akure. That is the owena-Ondo scheme on Owena river. The scheme then was capable of pumping 2 million gallons of water per day. Out of this, 1.1 million is pumped to Akure and Ikere (now in Ekiti State) out of which 80 percent is allocated to Akure (Guidelines for the Physical Development of Akure, 1976). Records, then, revealed that about 900 premises and 700 private dwelling in Akure were served with pipe borne water (Guidelines for the Physical Development of Akure, 1976). The bulk of the population depends upon 1,500 stand pipes that were distributed in the city. By 1984, according to DHV, the water for Akure is supplied by the Ondo State Water Corporation through the Owena scheme and two small sources in Ala River Valley. As earlier indicated, the Owena scheme has been in operation since 1965, with a design capacity of 9,900 m^2/day, of which about 5,300 m^2 is consumed in Akure (DHV, 1986). The Ala Alagbaka River Estate scheme involves the abstraction of about 1,350 m^3 / day (design capacity). In addition, the primary source of water in 1984 in Akure is public tap (84.9 percent). Only 15.1 percent of households had private connections. Besides, half of the population has no sanitary facility at all in the house. Of those, 90 percent has pit latrine (DHV, 1986).

Urban solid waste management in Nigeria is constitutionally the responsibility of the third tiers of government; that is, the local government (Federal Republic of Nigeria, 1999). As a result of the failure of this tier of government to carryout these responsibilities, many state governments in Nigeria established solid waste management Authority or Board in their respective state. In Ondo state, Ondo State Waste Management Authority (OSWMA) was established in 1999 (Ondo State of Nigeria, 1999). The desire of the Ondo State Government to derive value from waste, while at the same time effectively protecting the environment, led to the creation of the Ondo State Integrated Wastes Recycling and Treatment Project (OSIWRTP) out of OSWMA. Field investigations revealed Akure local government is not carrying out this responsibility and that the activity of OSWMA is restricted to certain parts of the city.

Implications for Sustainable Development of Water and Sanitation Facility

Analysis of existing urban basic services above revealed that majority of residents of the city lack access to safe water supply and basic sanitation facilities. Field investigations revealed that the city has been growing without a corresponding expansion in the provision of services and utilities. Most parts of the city are without functional water supply and sanitation, while housing condition is deteriorating in the city.

The results of this study indicate serious water supply and sanitation problems in the study area. It revealed that the majority of households depend on other sources of water supply, besides piped sources, and that the lack of adequate sanitation facility and services to cope with the population of the city. This paper also revealed that a significant part of the city is not served by public water main that is germane to meet the water and sanitation needs of people in the city. It also exposes the fact that government action and policies have not assisted in improving water supply in the city.

The implication of the above is that concerted efforts will need to be made to improve water supply and sanitation services in the city to meet MDGs target in 2015.

At present, only about 14.3 percent has access to safe water. In other words, about 86 percent source their water from unsafe sources. Therefore, about 43 percent of the population will need to be supplied water before 2015 to meet MDGs target for the city. In the case of sanitation, about 69 percent lack adequate sanitation. Thus, 35 percent of the population will need to be provided sanitation before 2015.

CONCLUSION

From the above exposition and analysis, the paper indicates that safe drinking water from the public source is not only grossly inadequate to meet the needs of present, but that there are no strong policy initiatives and actions to promote and enhance the existing facilities to meet future needs. The paper reveals that majority of residents of the city depend on other sources of water supply apart from piped water from public sources that may not be safe for human consumption. The paper, therefore, recommends a re-invigoration of water supply machinery in the state, including developing a new water pipeline to replace the existing old and outdated networks. There is also the urgent need for rigorous and well organized water supply and sanitation provision services in the city. Such efforts should seek to encourage community and private participation in the provision of these basic services.

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