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RESEARCH ARTICLE

AN ASSESSMENT OF THE MODELS FOR FINANCING WATER AND SANITATION
PROJECTS IN THE MARGINALISED COMMUNITIES OF NIGERIA

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ABSTRACT

The supply of adequate water and sanitation to marginalised communities since after the Nigerian civil war in 1970, has only achieved a little success. This is despite the interventions in the sector by government and some international agencies. Recent studies in many Sub-Sahara Countries show that new water supply projects stop functioning few years after they are completed and commissioned. The causes of this “low post construction sustainability” have been traced to technical, institutional, financial, social and environmental factors. However, the most critical factor often mentioned in the literature for these failures are inadequate and unsustainable financing of operation and maintenance of the projects. This problem calls for the sourcing of financial model(s) which is/are home grown to various cultures and localities in Nigeria. This paper, therefore, assesses five financial models already developed and are in use in some parts of Nigeria and other countries of Sub-Sahara Africa with a view to recommending those that can be used by the most marginalised communities in the country. This will no doubt end our long search for financial sustainability of our water and sanitation projects especially in the affected communities.

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INTRODUCTION

The supply of adequate water and sanitation to marginalised (low income communities) since after the Nigerian civil war in 1970 has only achieved little success. This is in spite of numerous interventions by the States National Governments and International Donor Agencies. Recent studies in many urban and rural communities in Nigeria show that new water supply projects stop functioning few years after they are completed and commissioned. For example (see Ezenwaji, 1991; Aralu, 2008; Umaru, 2010; and Adebola, 2013). The causes of this “Low post construction sustainability” of projects have been traced to technical, institutional, social, environmental and financial factors, but Mehta (2011) noted that the most critical factor responsible for the problem is the inadequate and unsustainable financing of the operation and maintenance of the projects. To solve this problem, communities, organizations and even governments have tried the use of local financing mechanisms and models that are sustainable for the financing of water and sanitation projects. The failure of many water and sanitation projects is because of the failure of owners of the project to ensure that the project are financed from local sources. Examples of the Greater Enugu and Onitsha Water Supply projects and numerous mini water

supply schemes are concrete examples of the problem. The Greater Enugu water supply scheme was completed and commissioned in 1984 with an installed capacity of about 159 million litres per day (MLD) but by 2004, twenty years after, the production decreased to only 15MLD which is about 9.43% of the installed capacity. The situation with Onitsha is even worse. It started with an installed capacity of 163MLD in 1984, but only ten years after, in 1994 its production had decreased substantially to 8MLD and by the year 2000, it had completely broken down (Ezenwaji, 1991, 2009, 2013). These water schemes which broke down most often were designed to serve the poor. Urban and rural communities more because they most often suffer from water scarcity and poor sanitation. The major cause of this low post construction sustainability have equally been traced to financial reasons. (Deverill, Bibby Wedgwood & Smout, 2004). This is because lack of funding is central to the maintenance of the physical water and sanitation assets (Nicol, 2000). In this regard, billions of Nigeria had been budgeted and a greater percentage expended to improve water supply and sanitation within the recent past years. Quite recently, Akinsuyi and Fadiro, (2013) reported that about \$350M would be released to Nigeria by the World Bank in addition to an earlier release of \$550M by the Bank to help in the transformation agenda of the Federal Republic of Nigeria in water sector and actualization of the governments vision 20:2020 on water resources. Also, the National Water Rehabilitation Project (NWRP) has attempted to address many

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difficulties on urban water utilities which had gulped about \$300M. Despite these funds releases the problem of poor water supply and sanitation has persisted. Investment costs in water and sanitation in Nigeria according to official Ministry sources is between \$30 to \$600 per person averaging \$180. The problem of water supply and sanitation are at times measured in terms of economic losses. In Africa, economic losses due to lack of access to safe water and basic sanitation is estimated at \$28.4 a year or 5% of the continents GDP, of which Nigeria has a high percentage. Based on the foregoing, continuing only with the present funding practice will further dwindle the water and sanitation provision in the country. It is, therefore, necessary that we change both the present policy and funding directions by beginning a new definition of funding strategy in water and sanitation so as to ensure that in the near future we will provide sustainable and efficient water supply and sanitation. The water supply and sanitation statistics indicate that not only do we still have a long way to go to attain the desired level of supply in the sector, but we have not discovered the way to go about it, as the present situation indicates. For example, Nigeria's access to basic sanitation and hygiene has fluctuated from 37% in 1990 to 34% in 2000, then up to 41% in 2012. These are far from meeting the MDGs target of 65% by 2012 and vision 20:2020 target of 75% by 2020 (Ochekpe, 2013). This paper, therefore, seeks to assess some local funding methods which are home-grown to various cultures and localities in Nigeria and come up with the recommendations of the financing method that can address the parlous water and sanitation conditions in Nigeria. This will no doubt end our long search for financial sustainability of our water and sanitation projects especially in the marginalised communities.

The marginalised communities

From the perspective of water resources we can define marginalised communities as those that are excluded from the opportunity to have access to basic water supply and sanitation. According to Serageldin, Solloso and Valenzuela (2006), the priority placed on access to water services is of particularly important in slum settlements. Furthermore, they were of the view that concern with sanitation among slum dwellers increases in parallel with the determination of conditions in the settlements as densities rise and overcrowding becomes the norm with multiple families on the same lot sharing highly inadequate water and sanitation facilities. Apart from slum settlements, squatter settlements which are those that built on illegal lands are many in Nigerian cities. In Port Harcourt city alone, Obinna, Owei and Mark (2010) found that there were 49 squatters settlements in the town occupying 65% of the city's population. In Enugu, Ezenwaji, (2010) reported that out of 41 residential districts in only 14 were supplied with the public water supply, meaning that 29 out of the total are either squatters or slum settlements. Apart from marginalised urban communities, majority of the rural populace lack access to basic water supply and hygiene in Nigeria. Nwankwoala, (2011) noted that rural communities in the context of water and sanitation sector in Nigeria, have populations less than 5,000 and usually do not have pipe borne water. The national standard of water consumption for rural areas is currently 30 litres per capita per day (LCD) and 48% and 44% access to

safe water and sanitation. Water supply access is generally agreed by international standards to mean the delivery of 30Lcd of safe water within 250m of the community and serving about 250-500 persons per water point. Safe water also means water that meets the National Drinking Water Quality of Nigeria. Rural communities seriously lack water supply and sanitation in absolute and qualitative terms and the danger is that the 60Mrural population in Nigeria which constitutes over 50% of the total population of Nigeria are in danger of water borne diseases especially cholera and dysentery. In a recent survey conducted by UNICEF, respondents which are made up of rural inhabitants identified lack of water supply as the major household problem (Fig. 1).

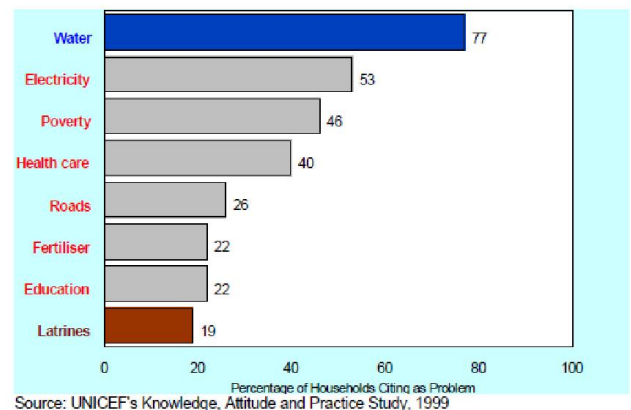


Fig. 1. Major Problems Identified by Rural Households in Nigeria

Anambra State has an estimated land area of 4762 sqkms and a total of 177 communities. It has a population of 4,177,288 according to 2006 population census out of which above 60% live in rural areas. Ezenwaji (2003) in his study of rural water supply in Anambra State surveyed, 1800 households across the State and found that average water deficiency in the rural communities of the State was 55%. Also Obeta (2003) noted that rural communities in Enugu State experience water deficiency to the level of 61%. These shortfalls are serious forcing the urban and rural poor's to supplement from sources of doubtful quality which gives rise to serious health consequences.

METHODOLOGY

In carrying out this research, survey was conducted in six Local Government Areas located in the six geopolitical zones in the country as follows (Table 1). The survey was conducted with the aid of 300 questionnaires randomly administered to respondents in the area between June and December, 2012. The sampling method adopted was the purposive sampling. This method was adopted because it is highly selective and affords the researcher an opportunity to select members he is confident will be useful in the study. The selection of the above areas for the study was because we know that they use one form of traditional microfinance method or the other to fund micro rural development projects including water supply and sanitation. Robinson (2001) however defined microfinance as the supply of loans, savings and other basic financial services to the poor. Irobi (2008) further opined that microfinance

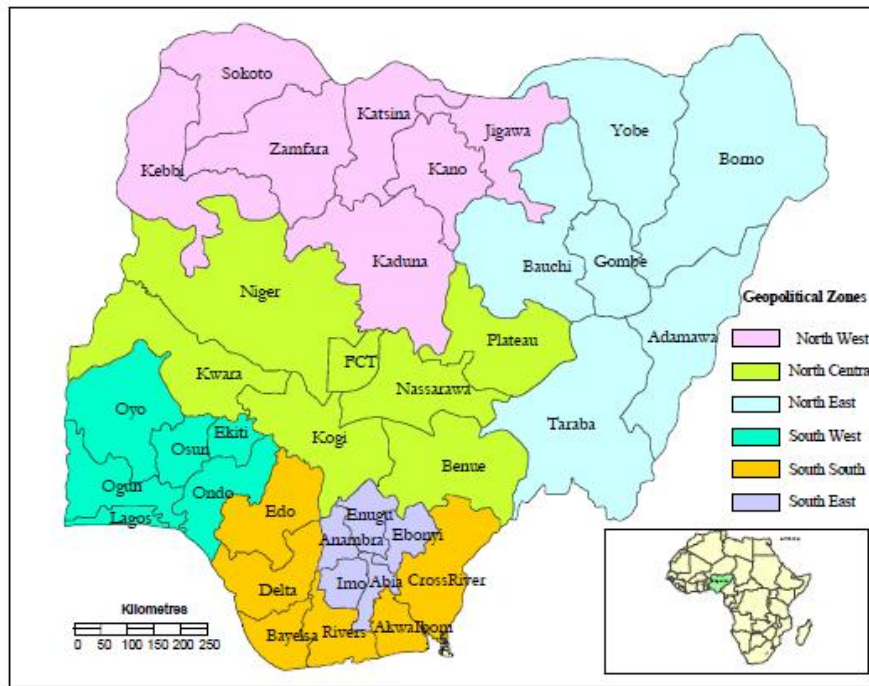


Fig. 2. Map of Nigeria Showing 36 States/FCT and 6 Geopolitical Zones

evolved as an economic development approach intended to benefit the low income part of the society. Microfinancing may not necessarily operate under a formal institution as is being believed in some quarters because it was operating in Nigeria and other parts of Africa as informal institution of a group of people that come together which was either savings and loans cooperatives, loan unions or other non-bank institutions, before the formal establishment of Micro Finance Banks in Nigeria, previously known as Community Bank on 28th April, 1990.

Table 1. Spatial Distribution of sampling population on the traditional water finance model in practice

Zone	State	Local Government Area
South East	Anambra	Aguata
South West	Ondo	Idanre
South South	Delta	Ndokwa
North West	Sokoto	Shagari
North East	Yobe	Damaturu
North Central	Nassarawa	Keffi

The various microfinance models identified during the field trip are:

- i) Output based aid model.
- ii) Self-help group model.
- iii) Group revolving fund model.
- iv) Water credit model
- v) Isusu model.

DISCUSSION

The microfinance models outlined above are the products of field investigation of their operations in various parts of the country. These models were evolved because the poor and marginalised always struggle for access to water supply and

sanitation, resulting in their unending search for their provision. The greater percentage of our urban and rural poor who lack steady source of income and access to collateral that banks require to source a loan have difficulties gaining access to credit or other financial capital, that would enable them develop their water supply sources and maintain adequate sanitation. In Nigeria, various people and cultures had evolved the model that suits them to operate their own environment. It is based on this, that we shall discuss and assess the micro financial models identified during our field work.

Output Based Aid Model

Some communities in Nigeria operate the Output Based Aid Model. In this model the people develop water supply systems using internal resources and available grants. Most of the time, internal resources are more than grants, but all the same they seek to access grants from willing donor agencies. The output based aid model often leverage co-financing from a private commercial microfinance bank. In some parts of the South West geopolitical zone, this model is very rampantly employed as it affords the marginalised people the opportunity to properly manage their micro water projects. Usually, a community or group identify a microfinance bank that would provide a subsidy to finance the water project. The introduction of Output Based Aid model subsidy requires that the project be initially pre-financed using other sources of funds with which they would pay for the bank subsidy and remains responsible for collecting the loan. The essential characteristics of measuring this model is the calculation of output. These outputs may include change in revenues collection, increase in water service coverage and increase in number of those with access to toilet facilities. Each beneficiary group would define the level of outputs it plan to

achieve and this would be built into loan agreement with the relevant Bank. This model is well developed in Kenya and other parts of East Africa as was amply reported by Mehta and Virjee (2007). The major weaknesses of this model include (i) it is difficult for the operators to obtain a subsidy from commercial microfinance Banks because they fear that they may not be able to pay back the loan at agreed period. (ii) Lack of conventional collateral, as the use of group collateral is a problem. (iii) wrong assessment of the output could lead to wastage of the subsidy.

Self help groups model

The Self Help Groups (SHG) are associations that were formed voluntarily at the community level and often act as community organisers and educators in creating demand for improved water supply and sanitation, a role which is necessary to the success of the project. This model is more practised in the South East and parts of Delta especially in Ndokwa and Oshimili areas. All these areas are dominantly peopled by the Igbo tribe who are known for self-reliance and had championed numerous self-help projects (Ezenwaji and Ezenwaji, 2010). This model has some variants. For example the Aguata people of Anambra State, Nigeria adopted the variance in which their Association – Water Consumers Association WCAs are formed in every community to raise funds from the following sources – (i) periodic organisation of joint funds raising especially during festive seasons (ii) water charges (iii) fines from defaulters of the WCA rules. These funds according to Ezenwaji, (2013) which are sourced within each WCA, are pooled and paid into “water fund” account which had been opened in a conventional bank by the joint WCAs and managed by a 14 member fund management committee known locally as ‘otumiri’ drawn from the 14 WCAs in the area with each monitoring a member. The body has the responsibility to loan funds to the water projects committees in communities for the rehabilitation of water projects. In other words, loans from ‘Otumiri’ are not given to individuals but to the WCAs who uses it to rehabilitate their water infrastructure. The loan is usually without collateral as the required collateral is jointly borne, but attracts interests ranging from 6-10% depending on the size of loan. Also Ezenwaji and Otti (2013) described another version of self-help groups model in Obizi area of Anambra State. In this version, each community in the area formed women association who mobilizes funds for loan to its members for the improvement of water infrastructure and expansion of sanitation facilities at household level. Most of the water and sanitation infrastructure built as a result are used for household business which has helped to improve the income generation of households. The various SHG described here is close to the one described by Waldorf (2012) for an NGO known as Gramalaya in Tamil Nadu, India. The goal of this NGO is to empower communities through the provision of water sanitation and hygiene services. Gramalaya distributes loans through its Women’s Action for Village Empowerment (WAVE) Federation Network. The SHG is responsible for distributing the loans among the borrowers while the entire SHG is responsible for paying back the loan from funds generated by the NGO. In addition to providing loans, Gramalaya offers capacity building programs to its borrowers.

So in addition to having access to capital members of the NGO also gained the skills and training necessary to use loans productively and to participate actively in the construction and upkeep of the improved water and sanitation sources.

This microfinance model has, however, the following problems:

- (i) Because of relaxed collateral, there are many cases of high loan defaulting rates which often times negatively affects the programme.
- (ii) Payment rates are also low in this model because beneficiaries often find it difficult to pay back because at times the funds are used to solve domestic problems. In some areas of Nigeria where people engage in this type of Microfinancing some borrowers sell personal possessions to meet the loan obligation.

Group revolving fund model

Group revolving fund model is a microfinance scheme that is very popular in some parts of North Central geopolitical region of Nigeria. In this model, a regional organisation usually formed by women have various community women’s groups under it whom it provides a revolving fund scheme to access improved water. This model has its origin in some parts of East Africa especially Uganda where it has developed well. Bavuma (2012) amply described how a woman development trust known as Katosi Women Development Trust (KWDT) that works in Mukano District operates with 16 women groups providing a revolving fund scheme for access to improved water sources. Under this model, women in communities within a clan or even Local Government Area can create groups and then apply for membership with the regional organisation. The groups if accepted by the regional organisation go through training and other capacity building programs to educate the group on the financial gains of accessing improved water and sanitation sources. This training is usually done to increase the understanding of women on the use of microfinance for water and sanitation and not to solve family financial problems or only for business development. Women groups can use the revolving loan to participate in income generating activities once they gain access to improved WSS services. For example in some parts of Laffia, women access funds from a similar organisation to sell excess water captured during the rainy season in the water scarce periods.

The beauty of this model is that once groups have formed independently and gone through the application process with the regional body, they have already proven their initial capability to work together as a group Waldorf, (2012) reported that the regional association provides money to each women’s group. The group collectively decides which individual member will get the loan first, based on a set criteria. In many areas, the loan is not provided in cash but through the purchasing of the materials needed to construct the tank. After the tank is constructed the regional association and the women’s group assess and agree on the cost. The loan is then paid back by the group. While only the woman who has received the loan for her household water tank is responsible for making loan payments, others within the group can help her if she finds it difficult to do so on time. This, however,

guarantees that loan is repaid to the regional association and also that once it is paid off, the money will be transferred to another woman in the group so that she can also construct her own tank. With this, water and sanitation facilities within the area gradually expands resulting in the increasing access to the sector in the area. One important area of success of this model is that its loan is demand driven. Another is that the application process for loan requires collaboration among the group women applying and securing group relationship before loan is issued. However, it is not all a success story because our findings from the field revealed that there were some cases where beneficiaries of the loan have betrayed the group trust by refusing to pay back the loan at maturity. Also, although the loan is demand driven, at times it is used to solve family financial problems.

The water credit model

In parts of Lagos and South West geopolitical region of Nigeria, some NGOs and organisations that work in Water Supply and Sanitation (WSS) are linking with microfinance institutions (MFIs) to use microcredit as a funding mechanism for WSS. Water.org is one of such organisations that has developed this model. Currently loans offered by Water Credit and its local loan affiliates are designated for household water and sewerage connections, toilets, rainwater harvesting etc. In the Water Credit model financial capital are provided to MFIs so that they can provide micro-credit for water and sanitation projects at individual and household levels. Water Credit ensures that local MFIs take advantage of their personalities to communities, establish reputations and understanding of the local cultures to create a customer base and issue loans that are tailored to the specific need of each community. At times the model provides water, sanitation and hygiene (WASH) technical assistance and capacity building efforts in communities that receive loans which helps ensure the sustainability of the project and the community's ability to repay the loan. In areas where this is beginning to operate like in some parts of Ajegunle, Lagos, it is expected that it will record some successes such as sustainability of the community water and sanitation projects and decrease incidences of water borne diseases. One advantage of this model is that it is demand driven i.e. it promotes those products that fit the needs and demands of clients and eliminating those that do not have market support. In addition, borrowers who take water credit loans save time and money by having water closer at home, reducing reliance to vendors and decreasing illness due to open defecation (Davis and Tinsley, 2013). This model has its own challenges essential because it is new. One of such challenges is lack of experience and knowledge surrounding WASH. Many MFIs in Nigeria have never offered WASH products in the past with the exception of water tanks. Another is that the product company such as water.org do not require partners to monitor some quality indicators such as confirming that the physical product has been installed completely and that the borrowers and family members are using the product.

The isusu model

The isusu model is the most traditional of all models. It is still in its original crude form in almost all the six geopolitical

regions of Nigeria, where it assumes different names, but having one meaning. The isusu methodology according to Seibel, (2000) is noted for its outstanding efficiency, a feature that may be beyond the possibilities of even the most advanced modern bank. The traditional methodology which has several variants in other African and Asian countries consists of the collection of agreed (fixed) sums of money from a number of people at regular intervals. These are then paid out as a loan for one person at a time, repeating the procedure over time until each member is served and then the procedure begins to run again. According to CHORD, (2000), the evolution of the concept has seen formal microfinance institutions (MFIs) crafting various adaptations to this methodology to satisfy the different socio-economic features of their clients in the delivery of service. The microfinance (susu) scheme is being used by various local organisations in Nigeria for maintaining and operating the water hand pumps in their areas. One advantage of this model is that it is simple for all the operators to understand considering the high illiteracy level in Nigeria. Second is that beneficiaries have joint collateral responsibility to pay back the loan. However, some of its pitfalls are;

- (i) Its crude nature prevents some enlightened members of the community from participating in it as its operation is not in tune with modern banking and business practices.
- (ii) There were cases from the field work where beneficiaries have defaulted from paying back the loan. Lack of collateral has made it impossible for such loans to be recovered.
- (iii) The high level of poverty experienced by majority of urban and rural populace after makes it difficult for some persons to participate in the program.

Recommendations of microfinance model for water and sanitation improvement in Nigeria

The search for financial sustainability of water and sanitation projects in the event of current government's inability to completely fund such projects calls for a new model that would close the financial gap, created. It is, therefore, necessary to recommend the financial model that can properly address this need in different parts of the country. It is based on this that we recommend as follows:

- i. Self-help group model is advocated for South East and parts of the Igbo speaking areas of Delta and Rivers States. This is because these areas are occupied by the Igbo who are known for their self-reliance and community spirit. The model is already being practiced in the area where it is taking considerable root. The two examples cited for Aguata and Obizi serve to show that the people of the area should be encouraged to further develop it.
- ii. The group revolving fund model is recommended for people in parts of North Central region especially the middle belt where organisations are already developing the model. Here the State government can help organize such groups but should not be involved in their operation.
- iii. The WaterCredit model is firmly recommended for the Western and Lagos regions where the level of modern financial transaction could be said to be higher than in other areas of Nigeria. The knowledge and wide

involvement of the people of the area in financial institutions will no doubt assist the model which is still new in the area to grow considerably.

- iv. The Northern parts of Nigeria especially the States and regions largely occupied by the Hausa–Fulani tribe can be encouraged to practice the isusu model because of the sedentary life of the people. However, in doing so it is our recommendation that the model should be improved to link it with the modern microfinance Bank so that some form of control can be effected.
- v. The output based model is not recommended because of the difficulty involved by the group practising it to secure subsidy from conventional microfinance institutions. The finance institutions usually go for outright loan at an agreed interest rate which the local organisations may not be able to pay.

Conclusion

We have tried in this paper to spotlight the basic problems of most water supply and sanitation projects regarding their inability to be sustainable. Most abandoned projects in the sector are seen more in poor and marginalised communities which are found in the rural areas as well as in slum and squatters settlements in the urban communities. However, despite the difficulty in estimating the exact proportion of funding that can be provided by various informal finance methods for WSS sector, there is certainly potential for microfinance to help close the gap created by government funding and support offered by various transfers from donor agencies. It is in this regard that we have assessed various traditional funding means already in practice in Nigeria and elsewhere and how such methods should be strongly grown locally in the part of the country where they are already operating. We recommended that the existing microfinance methods already in practice in various parts of the country should be encouraged to ensure continuous development until they get to the desired maturity stage. This will no doubt end our long search for financial sustainability of our water and sanitation projects especially in the marginalised communities.

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