

# **Expanding the Frontiers of Microfinance in the Service of the Poor: Experiment with Water and Sanitation**

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## **Abstract**

Microfinance application in water and sanitation is a burgeoning concept. For some Microfinance Institutions (MFIs), the concept and its viability appear nebulous since there is inadequate information to enable them create effective portfolios for that. This paper provides a clear case of extending microfinance to water and sanitation businesses. It adopted diverse approaches to collect data from 60 landlords and tenants as well as a number of potential and existing indigenous entrepreneurs in the water and sanitation in Nima, a low income slum area in Accra, Ghana. The study found that not only does microfinance investment in water and sanitation enhance access to, and demand for water and improved sanitation, but also create business opportunities for both MFIs and individual entrepreneurs.

**Key words:** microfinance, credit, water, sanitation, water vending

## **1. INTRODUCTION**

Over the past two decades, micro-credit or micro-finance has been developed as a strategy for poverty reduction and income generation for the poor. It intends providing tangible and intangible resources to assist the poor sail out of poverty through self-employment, which until recently included mainly small and medium scale businesses such as trading, craftwork, baking, and so on (Yunus, 2003; Mehta, 2008). Albeit this strategy of microfinance has insufficiently penetrated the poorest strata of the society who are the majority without access to credit (Morduch and Haley, 2002), evidence in Africa and other developing countries amply suggests that the poorest can apply microcredit to an income-generating activity and repay favourably (IRC, 2007).

Diverse innovative ways have been adopted to provide credit to the entrepreneurial poor. Two approaches have been advocated on the role of credit in poverty reduction. These are income-generation approach and minimalist approach. While the former maintains that credit should

be provided mainly to the entrepreneurial poor to enable them finance specific private income-generation activity, the latter argues that credit programmes would still be helping the poor fight poverty by giving credit to any poor person who is able to repay a loan without dictating how and on what the loan should be used (Zella, 2001). These have different focus and effect: the former is rigid and portfolio specific, the latter is flexible and innovation generation. It is the latter which encouraged some poor entrepreneurs in India, Kenya, South Africa, Senegal, etc. to apply credit to water and sanitation businesses such as water reselling (Mehta, 2008; IRC, 2007) which is the focus of this paper.

Available evidence indicates that most of these Microfinance Institutions (MFIs) worldwide service the traditional business enterprises including retailing, manufacturing, food processing and services. This is mainly the situation for the over 230 MFIs in Ghana, with high concentration in Greater Accra (48.3%), Western (16.1%) and Ashanti (15.6%) regions. For instance, evidence from Sinapi Aba Trust (SAT), a leading MFI in Ghana shows that majority (74.2%) of their clients are engaged in trading activities, taking up about 77.6 percent of total loans granted in 2012 (see Table 1). Other major traditional areas of microfinance included production (14.6%), services (5.5%) agriculture and business asset loans. However, current realities and circumstances in poor communities are dictating some inclusion of new areas such as water and sanitation services, education, housing, etc. in the microfinance domain.

Table 1: Traditional Areas of Microfinance

Product	Number of clients	%	Amount *GH¢	%
Agriculture	2,899	2.14	1,088,000	2.00
Production	19,871	14.64	5,608,000	9.28
Trade	100,713	74.22	46,895,000	77.60
Services	7,461	5.50	3,795,000	6.28
Business asset loan	1,334	0.98	79,000	0.13
Education loan	335	0.25	586,000	0.97
Microschools	509	0.38	810,000	1.34
Housing loans	262	0.19	453,000	0.75
Others	2,301	1.70	1,118,000	1.85
Total	135,685	100	60,432,000	100

Source: Sinapi Aba Trust, August 2012

\*Conversion rate: Conversion rate: US\$ 1= GH¢1.54

The emerging reality is that some MFIs are now providing credit to boost the supply of water and sanitation services in low-income urban neighbourhoods. In the case of Sinapi Aba, this is seen mildly in housing loans, which includes maintenance, construction of toilet and connecting water into the house. However, there seem to be inadequate awareness of the business case for water supply and sanitation projects which can attract microfinance institutions to readily deliver credit and other services to that sector. This is the objective of this paper.

## **2. MICROFINANCE AND WATER AND SANITATION IN AFRICA**

Inadequate access to potable water and poor sanitary conditions in most developing countries have necessitated alternative water and sanitation providers augmenting the efforts of public utility provision systems. These alternative options include standpipes, household resellers, mobile distributors, etc. These alternative private suppliers provide relevant services to the urban poor albeit their capacities are inadequate (Kariuki and Schwartz 2005).

A critical constraint facing these providers is low capacity and access to credit (Mehta and Virjee, 2003) and microfinance presents opportunity to provide credit to such water and sanitation providers in poor urban areas. Mehta and Virjee (2003) indicated that in sub-Saharan Africa, the scale of microfinance investment in water and sanitation is constrained by little product diversification, dependence on donor support for MFIs and donor outlook for financial sustainability, limited client base and portfolios and poor performance in terms of loan repayment. It is thus necessary to critically address these issues in any initiative that links water and sanitation to microfinance.

Over the years however, the microfinance sector in Ghana has experienced considerable growth. Sinapi Aba Trust (SAT), a financial NGO in Ghana for instance had a client base of 55,000 in 2007 (Afrane, 2007) but increased to over 136,000 by August 2012. Operational and financial sustainability of SAT were 109 and 102 percent respectively (Afrane, 2007). Evidence in Ghana and other African countries suggest that the water and sanitation sector is attracting microfinance investments. One contributing factor to this is rooted in the premise that microfinance sector concerned about outreach, sustainability, and product diversification provides opportunities to explore partnerships with water and sanitation initiatives (Mehta and Virjee, 2003).

Although it is believed that increasing number of microfinance investments in water and sanitation projects are being executed in Africa, not much have been reported in the literature. For instance, in Wogodogo, a low-income neighbourhood in the capital of Burkina Faso, a saving-credit initiative was set up for household management of domestic waste. The credit was provided by LAGEMYAM, a women's association, based on moral values since the people could not provide guarantee. The interest rate was 5.0 percent and covered mainly administrative costs. In the first phase, 28 households constructed 35 excreta and waste water infrastructure such as VIP latrines but only five reimbursed the credit. In the second phase however, due to awareness campaign, reimbursement rate increased above 80 percent (Kouassi-Komlan and Fonseca, 2004).

Another remarkable example occurred in Abidjan, Côte d'Ivoire, where an NGO called CREPA Côte d'Ivoire, partnered the Public Water Utility to enable 300 poor households to connect to the network by providing microfinance with grant from United Nations Development Program (UNDP). CREPA first pre-financed the full amount (US\$36 each) of connection fees as a loan for all 300 households and provided capacity building for households aimed at mobilizing savings to repay the loan. The micro loans were paid back in 17 months (IRC, 2007).

Again in Kenya, K-Rep Bank, a commercial microfinance bank, provided loans on a fully commercial basis to 21 community-managed water projects with subsidies from the Global Partnership on Output-based Aid (GPOBA). The total cost of averagely US\$80,000 per project was to be pre-financed up to 80 percent loan. GPOBA would refinance the loan with 40 percent subsidy upon successful completion and verification of each project, and the remaining would be paid from the water proceeds. Additional packages included technical assistance grants and management assistance during project implementation. These present lessons for further exploration.

Accessing microfinance for water and sanitation in West Africa in most cases, encounters certain problems. These include the need for solid guarantees, management capacity of financing institutions and the lack of enforcement of the legal framework when these institutions do not fulfill their obligations. Nonetheless, opportunities exist in most African countries in terms of already existing institutional and legal frameworks for microfinance, social values such as solidarity, social cohesion, community self-help groups, willingness to pay for clean water and high mobilization around social projects (Kouassi-Komlan and Fonseca, 2004).

The above experiences show that extent of microfinance programmes for water and sanitation is still limited, and only a few large MFIs have shows interest in the water and sanitation sector (Mehta, 2008). Apparently, the sector is relatively unknown and is perceived as high risk. Improving the scale of microfinance in water and sanitation demands a change of this perception by demonstrating a business case to MFIs. Mehta (2008) suggested that individual retail loans for sanitation possess the highest potential for making a clear business case. However, this would stride better in rural and middle-sized towns than urban areas because there is lack of space and tenure challenges in most houses in the latter.

Regardless of the paucity of cases on microfinance investments in water and sanitation in Africa especially, the available literature addresses critical issues which subsequent microfinance investment in water and sanitation cannot overlook. One such of critical issues is that microfinance for water and sanitation must be competitive comparable to the traditional areas of microfinance investments. Incorporating savings into the programme has also proven to be an effective means of sustaining the credit system (Afrane, 2007). Importantly, microfinance in water and sanitation may yield different results but SME-type loan appears to have the highest business potential.

### **3. APPROACH AND METHODOLOGY**

A case study approach was adopted in this study, making use of relevant qualitative and quantitative methods of data gathering and analysis. Nima, a typical slum community in Accra Metropolitan area, the capital city of Ghana, was selected as the study area. Two main factors informed the choice of Nima for this study. First, it is one of the slum communities which have received project intervention of microfinance application to water and sanitation. Second, the

acute water supply shortages and sanitation challenges in the community provide opportunity for private financial intervention in water and sanitation provision.

### **3.1 Data sources and survey techniques**

A total of 60 pre-tested structured questionnaires were administered to landlords and tenants. In each community, 30 tenants and landlords each were interviewed. The distribution of the sample in the community for the field interviews combined stratified and systematic sampling methods. Stratified sampling was necessary to ensure that the various segments of the community were well represented in the samples used. The application of the systematic method ensured consistent spacing of the houses selected for the surveys.

In addition, other qualitative data were collected through key informant interviews, focus group discussions targeting special groups and individuals such as the vulnerable (e.g. women), opinion leaders, social groups, water and sanitation vendors, NGOs operating in the communities, relevant government agencies such as Ghana Water Company, Metropolitan Assemblies, etc. The focus group discussions were used mainly to validate and confirm information gathered through the other instruments.

### **3.2 Data analysis**

Appropriate techniques were applied in analyzing the data assembled in the survey. The structured questionnaires administered were analysed using the Statistical Package for Social Sciences (SPSS v.16.0). This allowed for data disaggregation, cross-tabulations, and relevant statistical application whereas the key informant and focus group discussions were analysed qualitatively by subjecting responses to the relevant literature.

### **3.3 Profile of Study Area**

Nima is located in the northern part of central Accra, within Accra Metropolitan Area (Ghana). The area is categorized as urban slum with high population density and low income, inhabitants of which are mostly migrants from northern part of Ghana (CIHSD, 2008). It has high levels of poverty which manifest in the poor living conditions, inadequate access to quality water. Generally, Accra city's water supply is appalling and there is always unmet demand, an estimated deficit of about 91,364 m<sup>3</sup>/day in Accra (Awua and Assan, 2007). Nima's situation is quite worse due to its high population density of about 250 persons per hectare. In sum, the area is considered a migrant and depressed community in the metropolis (AMA, 2006).

The occupants of the community are predominantly Muslims (56.7%) and Christians (43.3%), with majority (44%) having primary level as the highest educational attainment. Only 15.2 percent had never being to school. More than half of the people are engaged in trading activities but only 16.7 percent have loan experience.

## 4. RESULTS AND DISCUSSION

### 4.1 Water and Sanitation Situation in Study Areas

Sources of water in Nima mainly included pipe borne water from private vendors (78.3%), public standpipe (1.7%) and in-house water connection (20.0%) as shown in Table 2. This shows that in-house water connection in the study community is worse than the national average of 37 percent. Private vendors being the major water source confirms the assertion that private water providers or water resellers constitute 50 percent of water sources for a typical city population in Africa, and up to 80 percent of water sources for the urban poor (Boyer, 2007; Sarpong and Abrampah, 2006).

Table 2: Sources of water

Source of water	Freq.	%
Private vendors (Pipe borne water)	47	78.3
In-house connection to GWCL lines	12	20.0
Public Stand pipe	1	1.7
Wells/borehole water vendors	0	0.0
<b>Total</b>	<b>60</b>	<b>100</b>

Source: Field Survey, 2011

The primary and preferred source of water for the above sources is Ghana Water Company Limited (GWCL) since water from borehole was considered unhygienic due to the poor sanitation within the community. This means when water does not flow from GWCL, the community was confronted with severe water shortage.

Table 2 also indicates that about 80 percent of the households buy water. It has been reported in the literature that private water providers (or water resellers) sell water three times their cost (Collignon and Vézina, 2000) and that the poor spend more on water in proportion to income. This study also found a similar trend. It revealed that the average amount spent on water every month was GH¢ 21.10. However, about 50 percent of households with income level GH¢0-100 spend about 21 percent of their income on water monthly whereas the average income (GH¢ 195) earners spent only 10.7 percent of their income on water. Similarly, the high income earners (GH¢500+) spend barely 5.0 percent of their income on water. From these, it appeared that the poor were disadvantaged not only by their inability to get connected to GWCL supply system, but also they buy water from the resellers at premium price.

Irrespective of the high cost at which most of the respondents obtain water, such sources were preferred and most of households (63.8%) did not intend changing their water sources. The

reason is that such sources were within reasonable distance (0-250 meters) and are fairly reliable. However, they noted that their sources become unreliable when water does not flow through the GWCL connection lines.

Accessibility to toilet facility in the study area is not too different from that of water. Only 33.3 percent of the respondents have access to in-house toilet facility. These were mostly pan latrine, ventilated improved pit (VIP) and water closet (WC). Charges for dislodging of household Latrine facilities ranged from GH¢50 to beyond GH¢150. The remaining 66.7 percent use public toilets at a charge of 10 pesewas per usage. The seven public toilets available in the community were not enough to meet the demand, especially at peak hours where people had to queue.

#### **4.2 Private water enterprises**

Reselling water by private individuals had existed for more than 30 years in the community. More than 20 of such enterprises were identified, scattered within the area. The study interviewed seven of the water vendors. Unanimously, they indicated that the water enterprise soars during periods of water shortages – thus, when there was water cut from GWCL for a day or more. This was because, demand for water exceeded supply within the short-run. With various forms of storage facilities such as polytanks, block tank, metal tanks, barrels, etc., the vendors continued to supply water for two or more days depending on their size of storage facilities. When all water vendors run out of stock, people resorted to other means of accessing water such as commuting to other communities, buying from water tankers, etc. This suggests that the number of water vendors could be increased, or the existing vendors could be assisted to acquire large water storage facilities.

When water flowed regularly, the market for each vendor extended within 250 meters radius around a “water kiosk”. The surveyed showed that 68.2 percent of the people cover less than 250 meters to fetch water at normal times. Customer base of the water vendors ranged from 10 to 100 people. On the average, vendors served a maximum of 86 persons. Thus, the market size for each water kiosk when water flowed regularly was relatively low, but increased substantially during water periods of water shortages.

After the initial cost of water connection, the cost of sales in water vending enterprise was the monthly water bill, except some repairs become necessary. The water vendors were charged commercial rate of GH¢ 1.80 per 1000 liters by GWCL. Due to this, monthly bills were usually as high as GH¢280. To recover cost, the vendors charged between three and four buckets of water for GH¢0.20.

With this market size and cost, the minimum and maximum sales reported by the vendors were GH¢5 to GH¢7 daily when water flowed regularly. When such situation continued for a month, sales ranged between Gh¢150 to GH¢210. Given these figures, it was quite uncertain if the water vendors were able to make much profit. However, the operators just perceive the venture as viable and profitable, a common feature with many informal businesses (Ligthelm, 2010). To them, the profit level was fair.

There was no external regulatory policy for the prices charged, not even the local Water Board at Nima. This board was established by the Public Utility Regulatory Commission (PURC) to manage and regulate activities of water and sanitation operators. It prevented illegal water connections and vendors who wanted to use high-powered pumps. The local Water Board at Nima indicated that the vendors have embarked on self-regulation of their prices. The board only ensured that there were no illegal water connections and that water and sanitation problems of the community were directed to the Public Utility Regulatory Commission (PURC).

#### **4.3 Microfinance intervention in water and sanitation**

CHF International, a non-governmental organization (NGO) operating in Accra and Secondi-Takoradi has supported water and sanitation delivery in the communities. In 2008, CHF International initiated the Slum Communities Achieving Livable Environments with Urban Partners (SCALE UP), a three year pilot project aimed at facilitating a process to enable the urban poor participate in the planning and implementation of slum improvement programmes. Implementing this programme led to mobilizing microfinance institutions – BOAFO, DAASGIFT Quality Foundation, and Youth for Social Enterprise (Y-SEF) – into the delivery of microfinance for water and sanitation projects. Whereas DAASGIFT concentrated mainly on enterprise development loans, BOAFO and Y-SEF in addition, granted home improvement loans as well. The home improvement loans of Y-SEF and BOAFO were geared toward, enhancing access to water and constructing toilet facility in the house and other housing-related activities.

Like all credit programmes, the beneficiary must fulfill certain conditions. For instance, in order to qualify for DAASGIFT's loan, the applicant must have been in an existing water business. Second, the client contributed a compulsory savings equal to 10 percent of the amount of loan being applied. Y-SEF rather required that the loan applicant made a down payment equal to 20 percent of the cost of items being sought for. The interest rate charged is to cater for operation and administration costs (Mehta, 2008; Fonseca, et al, 2007). But some of them were quite high. For instance BOAFO charged 48 and 36 percent per annum respectively for enterprise and home improvement loans. The issue of high interest rate on microcredit has been questioned, arguing that it tends to increase the plight of the poor (Khan, 2008). However, this has been countered with the argument that "what really matters to the poor people is not the interest rate but access to credit" (Varley, 1995).

Microfinance intervention in water projects were in two categories: provision of credit for in-house water connection and credit for water enterprises. The cost of in-house water connection ranged from GH¢800 to GH¢1200 depending on the distance of the house from water source. The cost was funded between the beneficiary (30%) and CHF International (70%), but the beneficiary's share was provided as a microcredit by MFI which was repaid within a year. Patronage of this facility was not encouraging mainly because paying the monthly bills also became added financial burden. As result, some of the few landlords who patronized this facility ended up converting it into water vending business. Regarding the water enterprises, seven water vendors received microcredit facility. The loan was used to buy large storage

facility (see Fig. 2) or establish a new enterprise. The cost, usually ranging from GH¢1,000 to GH¢2,000 was funded between the beneficiary (30%) and CHF (70%).



Fig. 2: Large water storage facility obtained through microfinance

Regarding sanitation, landlords took credit facilities to construct in-house toilet facility (Fig. 3). Possibly due to the pressure on the few public toilet facilities, this facility was highly patronized. When the project was rolled up, 120 applications were received from different houses. However, only 28 were approved. The major challenge for most of the houses was lack of space. In some instances, a room had to be vacated to make space for the toilet facility. Mehta (2008) envisaged this as the main challenge with toilet provision in a high density urban area. The cost per toilet facility was GH¢1,700, which is funded between CHF (50%) and the beneficiary (50%).



Fig. 3: A sample of Toilet Facility

Although the MFIs could not conduct their independent assessment of clients before credit was delivered to beneficiaries, repayment rates were generally good. The in-house water connection model was performing poorly due to payment challenges of water bills. Repayment rate was below 70 percent. However, that of water vendors and in-house toilet facility was both above 85 percent. Taking the interest rates and other conditions such as pre-savings into consideration, the repayment rates were considered good. It could be improved if the

repayment duration was increased such that the burden was spread over a longer period of time.

#### **4.4 The Roles of stakeholders**

Application of microfinance in water and sanitation in the study area as described above appeared intensive and systematic. An inter-play of CHF International, other NGOs and three MFIs led to this actualization. Without such initiatives, microfinance application to water and sanitation would have remained ad hoc since most MFIs concentrated much resources on traditional areas of microfinance.

It emerged that, CHF International acted as the initiator and collaborator which linked all other stakeholders. It created the environment that allowed the various actors to collaborate effort in addressing the local water problem. Through its SCALE-UP programme, CHF mobilized communities through formation of associations such as landlords association, women's group, etc; provided counterpart funding for projects; selected beneficiaries; linked MFIs to the beneficiaries, and contracted other bodies to either conduct feasibility assessment of the project or physically construct the project. For instance PRONET, an NGO, supervised the construction of the toilet facilities, educated the beneficiaries on the usage and maintenance.

The MFIs simply responded to the programmes of CHF by granting microcredit to the beneficiaries who could not contribute their part of the project cost. On the other hand, CHF could not achieve the programme objectives without the MFIs since most of the beneficiaries could not afford their part of the project cost without the credit. After delivering the credit, beneficiaries repaid it together with interest to the MFIs. This arrangement enabled the MFIs explore other non-traditional areas of microfinance.

A major challenge of this system appeared in the unclear relationship between CHF and MFIs, and the weak linkage between the beneficiaries and the MFIs. The MFIs' involvement in the entire system was to provide credit to the beneficiaries, who were selected by CHF through the programme. This denied the MFIs adequate opportunity of assessing clients' real need and ability to repay before loans were delivered. According to some of the MFIs, this adversely affected repayment. Again, project execution appeared to be in a rush since CHF needed to deliver results on project reporting timelines. As a result, there were inconsistencies in their requirements and reporting systems which were unfavourable to the MFIs. It was, thus, necessary for CHF to involve the MFIs early into the project, especially in the selection of beneficiaries/clients.

#### **5. CONCLUSION**

In conclusion, the study has established that through microfinance, water vendors were able to expand their business leading to adequate storage and supply of water during shortages. The MFIs, also expanded their scope of operations, fetching them competitive repayment rates comparable to that of trading, etc. By this, the concerns of Mehta and Virjee (2003) that

microfinance application to water and sanitation must take into consideration outreach and sustainability of the credit was somewhat fulfilled in this study.

The role of NGOs in the entire system cannot be overemphasized. In all the programmes, CHF International funded at least 30 percent of the cost. This is essential since the MFIs did not have to bear the entire cost, which would have been too high for the beneficiaries to repay within a period of one year, which was usually the case. Involvement of NGOs was essential in mobilizing the people into groups and pre-financing the construction. This study has shown a productive and beneficial relationship between NGO, MFIs, beneficiaries and other stakeholders in addressing critical community need for water and sanitation.

In sum, this study has shown that not only can microfinance investment in water and sanitation enhance access to, and demand for water and improved sanitation, but also create business opportunities for both MFIs and individual entrepreneurs. Thus through microfinance, on one hand local entrepreneurial capacity to supply water and sanitation services is enhanced, and on the other hand, small and micro enterprises of households and individuals in the community are enhanced financially to access these services in a sustainable manner. In effect, this frontier of microfinance application enhances the 'supply and demand' sides of the infrastructure delivery and consumption equation and thereby reduces poverty. As observed in this study, on the supply side, microfinance application in water and sanitation has utilized local entrepreneurial capacity to supply water and sanitation services through independent private service providers resulting in enhanced community self-reliance and sustainability in the delivery of these facilities. On the demand side, microfinance stimulated small and micro enterprises of households and individuals in the communities and consequently enhanced the financial ability of people to access these services in a sustainable manner.

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