Final Report

ASSESSING MICROFINANCE FOR WATER AND SANITATION

Exploring Opportunities for Sustainable Scaling Up

July 5, 2008
Ahmedabad, India

A study by Meera Mehta for the Bill & Melinda Gates Foundation

CONTENTS

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Executive Summary

1. Introduction and Scope

The importance of microfinance in financing water supply and sanitation services (WSS) has been recognized in several recent reports and workshops. They highlight the potential for using microfinance to meet the financing needs of poor and low income groups for improved access to higher-quality water and sanitation services. The objective of this study, commissioned by the Bill & Melinda Gates Foundation, is to assess the potential market for using microfinance in the water and sanitation sector, and to identify specific opportunities for potential learning, investment, and support. This report focuses on these opportunities and suggests measures that are needed for sustainable scaling up, which can be supported by the Bill & Melinda Gates Foundation and other development institutions.

The study uses a broader definition of **microfinance** ***that includes small loans to household borrowers, and funding of small projects with loan sizes of less than half a million USD from conventional microfinance providers and other financial sector players on a commercial basis.*** The term "water supply and sanitation" essentially covers services for safe water supply and the disposal of excreta in both rural and urban areas. The study covers 38 countries in three sub-regions: East and Southeast Asia**,** South Asia, and Sub Saharan Africa. The scope of this study is limited to desk-based research, including follow-up with practitioners.

2. Nature and size of microfinance opportunities

Analysis of trends in water supply and sanitation coverage presents different opportunities across the regions for the use of microfinance: a) to increase coverage to the urban poor in East and Southeast Asia, b) to improve levels of service for urban and rural water supply in South Asia, c) to increase outreach for water supply in Sub-Saharan Africa through both basic and higher levels of services (see definition below), d) to develop urban sanitation linked to housing and slum upgradation activities in all three regions, and e) to achieve a significant increase in outreach for rural sanitation in all three regions.
Note: "higher service" includes individual access to piped systems.

Table 1: Potential Demand for Microfinance across WSS Segments and Regions (2004-2015)

	Borrowers (in millions)			Total Estimated Loans (in USD billions)		
	East/Southeast Asia	South Asia	Sub-Saharan Africa	East/Southeast Asia	South Asia	Sub-Saharan Africa
Urban Water	7.5	7.9	4.7	0.6	0.9	0.4
Rural Water	5.0	10.3	3.1	0.2	1.1	0.2
Urban Sanitation	23.2	7.9	3.4	1.7	1.4	0.6
Rural Sanitation	17.3	30.8	4.4	1.1	3.1	0.8
Total	53.0	57.0	15.6	3.7	6.6	2.0

Note: Refer to text for details. Figures have been rounded and totals may not be exact.

Trend-based projections of levels of services and resultant investments suggest a potentially large demand for microfinance of over USD 12 billion in loans over the next decade. Demand for sanitation is very large, particularly for rural sanitation. This demand can be increased further through appropriate

policy changes. For example, South Asia has a very low share of higher service levels. Policy changes may be needed to support the use of microfinance to encourage higher service levels for water supply. Such policies can also free up public resources to focus more on the poor.

Successful scaling of microfinance for WSS will depend on the status of the microfinance and banking sector in each country. There is a small group of countries (for example Sri Lanka, South Africa, Vietnam, Indonesia, Senegal, Togo, Bangladesh, Benin, Kenya, and Cameroon) that seems to have a good balance between the size of potential demand and the size of the microfinance and wider financial sectors. However, in other countries, where the microfinance sector is small, there may be limits to scaling up. Realization of these opportunities will depend on appropriate water and sanitation sector policies that provide space for and encourage the use of microfinance through appropriate capacity-building support.

Successful, sustainable scaling will require putting appropriate policies in place to create space for the use of microfinance in the water and sanitation sector. Identification of these policies will require country-level assessments of the financial and water supply/sanitation markets to determine policies for the finance and the real (WSS) sectors. Though beyond the scope of the first phase of this study, such country-level assessments will be needed to inform and realize the potential identified above. It also requires identification of appropriate support measures to articulate and respond to the demand for microfinance in improving water and sanitation.

3. Lessons from Experiences by Product Segments

The microfinance market for water and sanitation is currently served by three product segments that reflect the types of loans and opportunities that exist across urban and rural areas:

- ***Retail loans for household water and sanitation:*** These are loans for water and sanitation facilities or connections that are granted by some large microfinance institutions (MFIs): e.g. Grameen Bank, BRAC and ASA in Bangladesh; the Vietnam Bank for Social Policy (VBSP); SEWA Bank and Basix in India; and BRI in Indonesia. A few of these have achieved a significant scale—though they are still small in relation to the MFI's overall size and outreach.

  For example, in 1999 all MFIs together in Bangladesh had reached about 9 percent of rural households. More recently, in Vietnam, VBSP has achieved 2.4 percent coverage of all households over a three-year period. In both cases the WSS portfolio comprised less than 1.8 percent of total MFI portfolio, though borrowers for water and sanitation comprised 30 percent of its total borrowers for Grameen Bank and 10 percent of total borrowers from VBSP.

- ***Small and medium enterprise (SME-type) loans for small water supply investments:*** In most cases, these loan programs are still at the pilot stage, though the design of some pilots (such as those of the K-Rep Bank in Kenya and Togo) suggests potential for scaling. In the case of Kenya's K-Rep Bank, the Water and Sanitation Program, which facilitated the project, is already exploring a countrywide scaling up with the development of business development services (BDS) and a project development fund.

- ***Loans for urban services upgrading and shared facilities in low income areas in towns and cities***: These loans focus on access to settlement level services for the disadvantaged. Despite their complexity, its importance arises from high rates of urbanization and high shares of "slum areas"

in most regions. Actual experience using microfinance segment for WSS in this product segment is limited.

The review of experiences with using microfinance for WSS shows potential demand and significant opportunities, and demonstrates the need for appropriate policies and support to achieve sustainable scaling up. Some of the areas where support is needed are outlined in Table 2:

Table 2: Measures for Sustainable Scaling Up by MF Product Segments

Product Segment	Measures needed for sustainable scaling up
Retail loans for households	Special WSS products with MFI leadership, requiring support through assistance in product design for household facilities and connections to piped water supply
	Special attention is needed for sanitation, especially for links with promotion programs–or, conversely, promotion programs for WSS need to include a microfinance component
"SME-type" loans for small water supply investments	Project development support and facilitation through a credible "promoter"
	Partial subsidies or guarantees to ensure the affordability of financing terms
	Conducive sector policy to provide space, design subsidies and ensure legitimacy of service providers
	Promote Business Development Services (BDS) support, to ensure SMEs are viable
Loans for urban services, upgrading, and shared facilities	Use of microfinance as bridge finance, and/or blended with partial subsidies using public funds (because of public perceptions about project affordability)
	Link microfinance with programs that support citywide scaling up
	Address the critical issues of land tenure

4. Mutually Reinforcing Benefits for WSS and MF Sectors

The study outlines the mutually reinforcing role played by the water and sanitation and the microfinance sectors. Use of microfinance helps to realize and further improve household benefits from improved water and sanitation; while engaging in WSS can help microfinance institutions to improve their outreach efforts, and their financial and social performance.

Use of microfinance makes it possible for cost recovery to be linked to private benefits, thus freeing up public resources for the poorest, and for activities with clear public benefits. Microfinance can improve aggregate benefits by expanding access to a higher level of services, and increasing access to sanitation, both of which are critical for wide public health benefits. Microfinance can also be used to improve efficiency and effectiveness of public resources through bridge finance and links with pro-poor subsidies. Finally and most importantly, the use of microfinance brings market rigor and can help to improve the sustainability of small water systems, by creating more localized accountability between providers and recipients of microfinance.

Microfinance institutions also benefit from engaging with the water and sanitation sectors: microfinance institutions can increase their outreach and customer base, improve their financial viability (especially by maintaining larger WSS loans in their portfolios without losing program focus on the poor), and better meet their social performance targets (especially through sanitation loans).

5. Exploring Strategic Options

A review of microfinance programs for WSS suggests that while there are many pilots, very few have achieved scale. More importantly, the review also highlights that only a few large MFIs show an interest in the water and sanitation sector, because it continues to be relatively unknown and is perceived as high risk. In order for microfinance to be scaled, then, these perceptions will need to be changed, by demonstrating a clear business case to MFIs and other financial sector institutions.

The highest potential for making a clear business case is through individual retail loans for sanitation. This is followed by water supply loans through retail and SME-type loans for small water investments. The sanitation loan sector shows high potential demand and can be coupled easily with existing sanitation promotion programs. In large urban centers, individual sanitation programs are likely to be constrained by space and land tenure issues, but there could be considerable scope in rural areas as well as in small- and medium-sized towns. Efforts would help to achieve access targets of the United Nations' Millennium Development Goals (MDGs), and would provide benefits such as health, time savings, dignity, privacy, and social status. Retail loans and SME-type loans for water supply also have considerable scope and can greatly increase health benefits, while freeing up public resources for other projects. Retail loans can be made for utility connections (as in Indonesia and Cote d'Ivoire) or for household facilities in rural areas (as in Bangladesh or Vietnam). SME loans can be used for community-managed systems (as in Kenya and Senegal) or small private service providers (as in Cambodia, Togo and Mali) as well as small public utilities (as in Philippines). Urban upgradation projects are less likely candidates for piloting and scaling up, because urban systems are more complex and there is a lack of available technical experience. Nevertheless, there would be value in supporting a pilot operation, especially one that focuses on the most vulnerable residents in the fastest-growing urban centers.

All regions considered in this report have a significant potential demand, though the highest potential portfolio is in South Asia. In East and Southeast Asia, estimated demand is greatly reduced if China is excluded, because of the limited presence of microfinance institutions in China. Nevertheless, a number of other countries show potential in terms of demand and of the relative strength of their microfinance sectors. In terms of country estimates, India accounts for nearly 44 percent of the global potential demand for water supply, and 46 percent of the demand for global sanitation. China, due to its large population, has a high potential demand, but most of it is for sanitation (not water), and there is little scope for microfinance projects. The scope for scaling is also quite large across the rest of Asia and in Sub-Saharan Africa. For example, in East and Southeast Asia, Vietnam, The Philippines, and Indonesia all have high demand levels, as do all the countries studied in South Asia. In Sub-Saharan Africa, Nigeria, Ethiopia, Tanzania, and Kenya have a high volume of demand. From the viewpoint of the microfinance potential, other important countries include Sri Lanka, South Africa, Vietnam, Indonesia, Senegal, Togo, Bangladesh, Benin, Kenya, and Cameroon.

To support sustainable scaling of this market, a few core activities have been identified as critical for developing opportunities and learning across the three product segments. These include: 1) industry assessment, to understand demand from both the household and MFI perspectives; 2) availability of business development support (BDS) to support SMEs working in the WSS sector; 3) research support for product development, to determine loan tenor, assess risk, and set interest rates; 4) project development support, to help reduce appraisal costs and risk, and 5) additionally, guarantees may be needed to lower risk for MFIs to enter this market. While all are important, the sequence of their use will need to be determined in the given country contexts and choice of product segments. Where guarantees are needed,

Table 3: Strategic Choices and Potential Demand across Segments

WSS Segment	Potential loans in USD billions (Borrowers) (in billions)	Product Segments		
		Individual Retail Loans for households	SME type loans for water supply	Urban services upgrading and shared facilities
Rural Water	1.9 (2.0)	**Medium** (for household facilities, and connections in small projects)	**Medium** (for community-managed water projects)	
Urban Water	1.5 (1.8)	**Medium** (for utility-linked new connections in large centers, and household facilities in small & medium towns)	**Low** (for community schemes /small private providers in peri-urban areas)	**Low** (for large urban centers with slums/ low income settlements)
Urban Sanitation	3.7 (3.4)	**High** (in small and medium towns)		
Rural Sanitation	5.2 (5.2)	**High** (for individual toilets)		

Notes: Refer to text for details.

Table 4: Core Support Activities by Product Segment

Core Activities	Product Segments		
	Individual retail loans for households	SME type loans for water supply	Urban services upgrading and shared facilities
WSS industry assessment and policy support	√ To identify demand, market size, costs, institutions, connection policies/ practices, etc.	√ To assess market size, institutional and regulatory issues, and costs	√ To assess market size, institutional and land tenure issues, costs, etc.
WSS Product development	√ For a special product, or to adjust the current MF products	√ To link SME type product to cash flow, partial subsidy required	√ To link special services upgrading product & citywide scaling up
Facilitation by a credible promoter	√ For linking MFI and utilities, dissemination, to mobilize community	√ To establish links between MF and WSS	√ To establish links with local authorities, utility, NGOs, and community
Project development support and other services during operations	√ Not needed	√ Needed for each project initially; over time merged with business development support (BDS)	√ Needed for each project initially; over the long term time merged with BDS and functions of local authorities
Capital funding	√ Needed in selected cases for MFIs without easy access to funds for WSS lending	√ Partial subsidies to address affordability concerns; partial risk capital	√ Partial subsidies to address affordability concerns; partial risk capital

there are options available through a range of development institutions, such as USAID, PIDG, and the IFC.

To meet these needs, there are three types of potential partners: *large MFIs* who have achieved projects of significant scale; a *credible promoter agency* that can provide the necessary facilitation support and can act as a catalyst in developing transactions; and *associations of microfinance institutions* that can be effective

vehicles to disseminate lessons and to create interest among MFIs in these opportunities. Each can serve as an entry point for growing the market, or could be co-partners providing supportive and mutually reinforcing activities.

To design an effective scaling up program, initial market research is critical—along with experience-sharing within and across national borders. Bridging the microfinance and WSS sectors is relatively uncharted territory. As such, pilot applications are likely to be needed. This requires an assessment of the water and sanitation industry, to enable appropriate choices in institutional design, and financing mechanisms that are viable for countrywide scaling up on a sustained basis. Program design should be relative to the level of demand, to country policy, to the regulatory environment, and to stakeholder readiness. Strategic choices for support need to be made carefully, to ensure that different business models evolve from the experience. It is also necessary to create mechanisms for sharing experience within and across national borders. This will necessitate simultaneous identification of lessons and of effective means for sharing these lessons.

1. Study Objectives and Scope

The importance of microfinance to address the financing gap in water supply and sanitation services (WSS) has been recognized in several recent reports and workshops.[1] These reports and events have highlighted the potential of microfinance to meeting the financing needs of poor and low income groups for improved access to a higher quality of water and sanitation services. Despite this stated importance, however, there has not been any assessment of the potential size and scope of this market for microfinance.

Study Objectives

The objective of this study, commissioned by the Bill & Melinda Gates Foundation, is to assess the potential market for microfinance in the WSS sector, and to identify specific opportunities for potential learning, investment, and support by the Foundation.

Specifically, the study seeks to determine the potential *scope* of the market (in terms of the nature and type of products); the *size* of the potential demand; the *contexts* where microfinance is likely to achieve sustainable impact at scale; the *measures* needed to overcome barriers to the use of microfinance for these purposes; and specific *opportunity areas* for support by the Bill & Melinda Gates Foundation or other funding agencies.

Scope of the Study

Defining Microfinance (MF)–"Small size of loans, projects, and financial services": Microfinance is conventionally understood as financial services provided by a variety of providers such as rural banks, nonprofits, credit unions/cooperatives, and non-banking financial institutions.[2]

This study uses a broader definition of microfinance to include small loans to household borrowers, funding of small projects with loan sizes of less than USD 500,000,[3] and other financial services provided to households and small water service providers. These services may be provided by conventional microfinance providers or by other players in the financial sector, such as commercial banks, development finance institutions, revolving or community development funds, and project development facilities. This broader definition is used to align with the larger size of finance required for WSS projects, while also taking into account the potential limitations of conventional microfinance providers. This represents an adaptation on the term "microfinance" which may be provided by the conventional microfinance institutions, as well as the wider financial sector.

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[1] For example, the Camdessus Panel report mentions that ""micro credit schemes are also important in financing community water projects and small local producers." Other papers include Mehta and Virjee, 2003; and Mehta et al, 2007a. Workshops include: "Regional workshop on Microfinance and innovative mechanisms to achieve the MDGs in the water and sanitation sector in Sub-Saharan Africa" (Dakar, 2003); and "Water and Microfinance: Exploring innovative partnerships" (Delhi, 2007).

[2] For example, Mix-market, which provides the outreach and operational information for over 1137 microfinance providers across the globe, mainly includes providers like microfinance and rural banks, cooperative and credit unions, non-banking finance companies, and nonprofit NGOs.

[3] This would fund a small project for a population of up to about 5,000 at 100USD/capita; or on a smaller scale, it could be an augmentation or rehabilitation for an existing project for a population of up to 25,000.

Scope of demand assessment: Despite the small size of loans and financial services covered under this definition of microfinance, there can potentially be a large market for these services, based on a 'bottom of the pyramid' framework.[4] The potential scope and size of these markets is explored in this paper. However, as desk-based research, the study's findings are limited. Realization of the potential for using microfinance in water and sanitation will require enabling policies and regulatory environments in both the microfinance and WSS sectors. The scope of this study does not include detailed country-level inquiries into these aspects.

Demand assessment has been done using available information on WSS access, which results in a "top down" approach and a macro-level view of the market. However, the value of a more direct assessment of demand through market surveys of potential client groups is recognized, and its use is also illustrated in some of the case studies reviewed. The study did not include this type of market survey for specific countries (which would have provided a more "bottom up," demand side perspective).

Scope of water supply and sanitation: The scope of water supply and sanitation essentially covers services for safe water supply and disposal of excreta in rural and urban areas. Given the focus on microfinance, this generally includes household connections and other household level WSS goods and services, as well as larger investments for small, networked water supply systems that serve populations of up to about 25,000.

Comparative global information on water supply and sanitation is used in discussions of two service levels[5]: *basic levels* of service, and *higher levels* of service (representing individual access to piped systems).

Geographical scope of the study: The study covers 38 countries in three sub-regions: *East and Southeast Asia* (Cambodia, China, Indonesia, The Philippines, Thailand, Vietnam); *South Asia*: (Bangladesh, India, Nepal, Pakistan, Sri Lanka); and *Sub-Saharan Africa*: (Benin, Burkina Faso, Cameroon, Congo, Cote d'Ivoire, Democratic Republic of Congo (DRC), Ethiopia, Ghana, Kenya, Madagascar, Malawi, Mali, Mauritania, Mozambique, Namibia, Niger, Nigeria, Rwanda, Senegal, Somalia, South Africa, Swaziland, Tanzania, Togo, Uganda, Zambia, Zimbabwe). Annex 1 provides details of the overall scope of these regions and their broad demographic and economic characteristics.

Report structure

Chapter 2 assesses the potential demand for microfinance using trend-based estimates of investments in the WSS sector that are likely to improve service levels, as well as reviewing these estimates in light of supply-side constraints of the relative development of the microfinance and the wider financial sector in different countries. Chapter 3 first develops a simple product segmentation framework for microfinance based on WSS sector characteristics; it also reviews a large number of actual experiences in using microfinance, by reviewing available literature and following up with practitioners. Chapter 3 also identifies the mutually reinforcing nature of benefits that accrue from the use of microfinance in WSS. Strategic options for product segments and regional country choices, partners, and core activities are

[4] See for example the experiences presented in Prahlad, 2006.

[5] This is based on the definitions used by the Joint Monitoring Program which is the only source for comparative country-level information on water supply and sanitation for different time periods. More details on service levels and related definitions are in Annex 1.

identified in the final chapter. Details of data and methodology for trend analysis and demand estimates, contacts, and details of case experiences are provided in a series of Annexes that accompany this report.

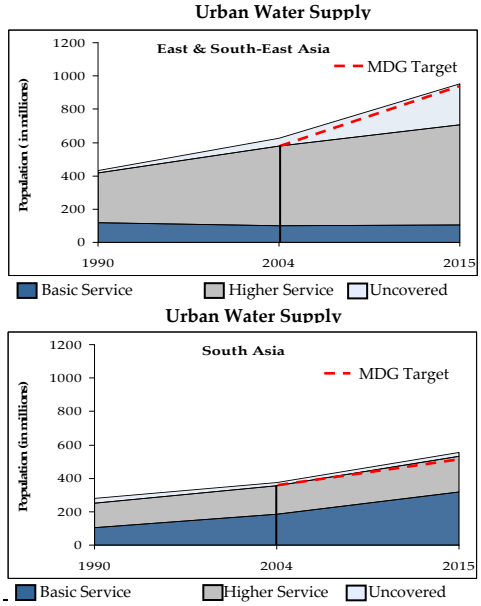
2. The Nature and Size of Microfinance Opportunities--A Demand-Supply Perspective

Most analyses of the WSS sector assess the likelihood of different countries achieving the UN's Millennium Development Goals (MDGs) and associated costs.[6] However, in this study, trend-based estimates of changes in WSS status are assessed for two service levels (basic services and higher service levels) to arrive at investments that are likely to increase coverage and change service levels. Demand for microfinance is then estimated as a share of total investments based on a broad assessment of prevailing public finance and subsidy policies. The potential demand envelope for water supply and sanitation is assessed across urban and rural areas, because these are expected to show variations in response to the prevailing institutional forms, densities, tenure characteristics, and infrastructure costs. Estimates have been developed for 38 countries and three regions (East and Southeast Asia; South Asia; and Sub-Saharan Africa). Although a number of assumptions were needed[7], the estimates can provide an indication of the potential size of the demand for water and sanitation services in rural and urban areas.

2.1 Demand-Side Opportunities for Using Microfinance

Information on trends across water and sanitation segments and across countries is mainly based on estimates developed by the Joint Monitoring Program (JMP), which is managed by the WHO and UNICEF. The JMP provides time-series information on the share of population in rural and urban areas at three service levels: i) no access to safe WSS, ii) basic levels of service, and iii) higher levels of service (representing individual access to piped/sewered systems). From this, trend analysis is used to estimate the potential demand envelope. Service levels along with gaps in service in different regions indicate issues related to equity and sustainability of services. A review of trends across the three sub-regions suggests key areas of focus and opportunities for using microfinance:

a) To increase outreach to the urban poor in East and Southeast Asia: Urban population growth is high in this region, and as a result, despite good progress, there will be some gaps in achieving MDG targets for urban water supply. The high proportion of population with piped water is expected to grow, but it is likely that this will exclude many poor urban households. Here, micro-credit may be used a) for individual credit for connections to piped water supply, and b) for credit for community-level extension of services in low income settlements.[8] Both approaches would work where there are well-run utilities that can meet demand on a sustainable basis.



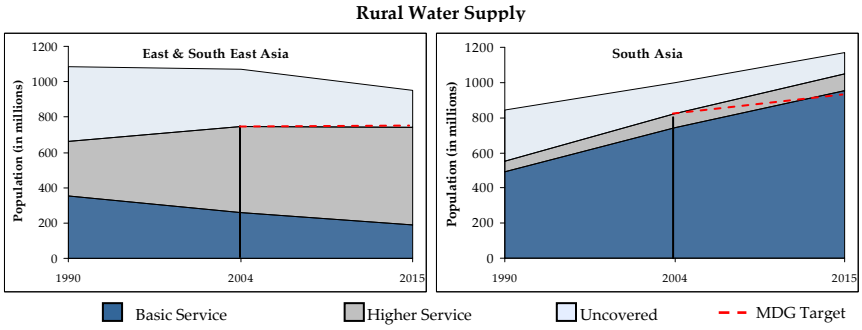
b) To improve service levels for urban areas in South Asia: South Asia is expected to maintain its existing service coverage, but will have limited growth in higher service levels. As most countries in the region start to attain full WSS coverage and assuming increases in average income, there will

[6] For example see: WHO-UNICEF JMP 2000, 2004, 2005, 2006 and Hutton and Bertram 2007.

[7] Refer Annex 1 for details.

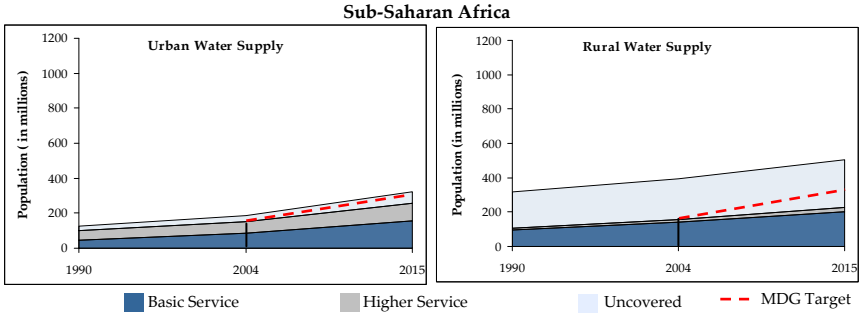
[8] Refer to Section 3 for case examples from Indonesia and The Philippines.

be increasing demand for access to higher service levels. Microfinance can play a role either through micro-credit for individual connections to utility supply, or through slum development programs that help to ensure provision of a new piped network in slums. In this context, the possibility for using microfinance for urban water supply in South Asia is likely to be linked with citywide slum upgradation. For example, such policies for citywide slum upgrading activities are planned under the Government of India's efforts under the Jawaharlal Nehru Urban Renewal Mission (JNNURM).[9]



c) To increase access to higher service levels in rural water supply in Asia: Asia shows good progress in rural water supply and will achieve the MDGs. However that will still leave a sizeable population without access to water services. Microfinance demand is more likely to be for access to higher service levels. This could free up limited public resources to provide basic level services to the uncovered population.

d) Use of microfinance with increased outreach for water supply in Sub-Saharan Africa: Sub-Saharan Africa shows inadequate progress for both rural and urban water supply and is not likely to attain the MDG targets. Significant shortfalls in rural areas suggest the need for additional financial resources and human resource capacity, as well as the need to improve sustainability. Some countries in Africa do not have these resources, while others, e.g., Uganda, may be constrained by macroeconomic sector ceilings on public resources.[10] Microfinance in rural Africa could be used to increase coverage of basic service levels. In urban areas, there are some possibilities for micro-credit-linked individual connections for low income groups in countries with good water utilities (Senegal, Burkina Faso, Uganda, etc.). In some cases, subsidies can be used to help allay affordability concerns. Support for using microfinance for small-scale service providers can also help, in some cases, to address issues of legitimacy and regulation that these service providers often face.[11]

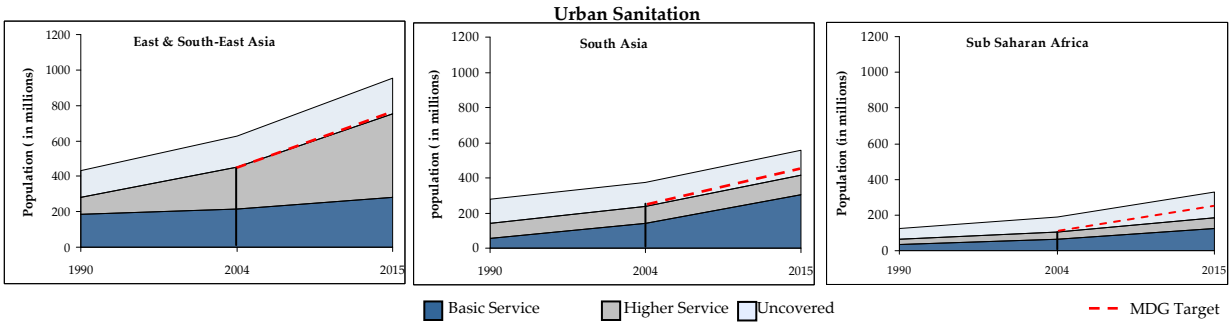


e) Use of microfinance linked to housing and slum upgradation activities for urban sanitation: East Asia, Southeast Asia, and South Asia are likely to achieve MDG targets through improvements in basic service levels, but the population without access to sanitation is still large, and still growing due to demographic trends. Potential scope for micro-credit includes a) products linked to community/shared toilets in dense slum areas, and b) individual toilets where low income households have adequate space. Products may

[9] Under the JNNURM, one sub-mission focuses on the Basic Services for Urban Poor (BSUP), focuses on provision of services to the urban poor, and includes an Integrated Housing and Slum Development Program (IHSDP). At the end of seven-year mission period, it envisages that all the urban poor will access basic level of urban services. (GOI, 2007).

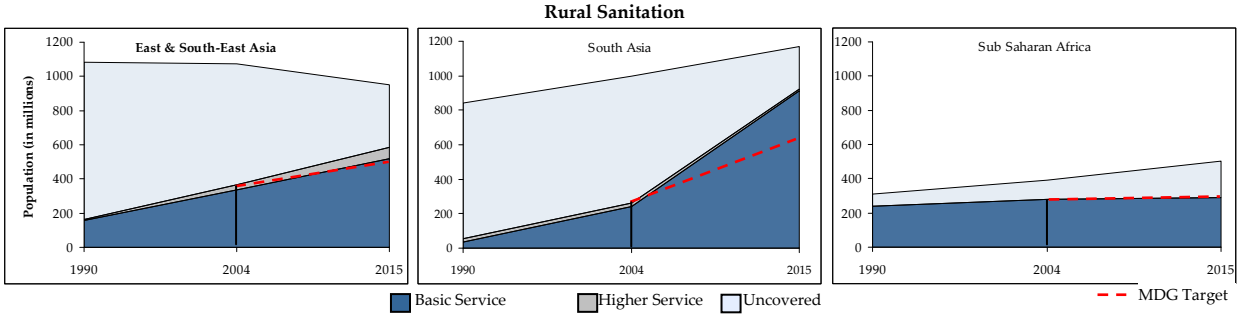
[10] For example see Mehta and Mutono, 2008.

[11] Based on communications with researchers who have worked extensively with the small private providers.



be linked to housing loans that are already in use. Opportunities may also exist to link WSS projects with existing slum upgrading activities in several countries. In all regions use of subsidies for slum-related programs continues to be common. Consequently, the scope of the market in this area will depend on whether the policy space can create conditions for microfinance to be viable, for example as bridge finance.

f) To achieve a significant increase in outreach for rural sanitation: The rural sanitation coverage gap will likely decrease in East/Southeast Asia and South Asia, but will likely increase in Sub-Saharan Africa.



There is a strong case for the use of micro-credit for basic sanitation in rural areas. Several countries such as Vietnam, Bangladesh, and India have already used micro-credit for toilets though each has a different approach.[12] Evidence suggests a need to establish links with broader efforts to mobilize household and community demand for sanitation.

Based on the regional analysis, a number of opportunities are evident across rural and urban areas. These are reviewed in terms of actual experiences in the use of microfinance the next section.

2.2 Size and Nature of Potential Demand for Microfinance

Table 2.1 provides estimates of potential demand for microfinance in terms of the likely number of borrowers and total credit requirements over the next decade.[13] These estimates were derived through three steps. First, for each of the 38 countries, increases in households at different service levels were estimated between 2005 and 2015 (see Section 2.1 above). Second, estimates were made of total investments that would achieve these increases in service levels, using estimated unit costs of "service improvements" for each region.[14] In the third step, potential demand for microfinance was estimated. It

[12] Refer to details in Section 3 and Annex 2.

[13] The period used is 2004 to 2015. Details are in Annex 1.

[14] Information for unit costs and level of demand is weak and limited. Available global information for 2000 has been used, with regional variations in distribution of technologies for basic services, and price increases for 2005 taken into account.

was first assumed that 25 percent of households that improve their service levels (i.e., from no service to basic services, or from basic to higher level) will use loan financing.[15] It was also assumed that the ratio of loan finance to total investments will be 50 percent for basic services, and 10 percent for a higher level of services. These assumptions are broadly based on the cost levels and current structure of subsidies in most countries.[16]

Using these assumptions, total demand for microfinance for use in WSS is estimated to be USD 12 billion in loans, with 125 million borrowers, between 2004 and 2015. The number of borrowers will be less if one considers loans to small-scale water service providers. The potential demand for microfinance for sanitation is very high in all regions. The number of potential borrowers is high in East Asia, and Southeast Asia, but these are more likely to be for individual connections with higher service levels, whereas in South Asia the potential demand is more for basic service levels particularly for sanitation.

In terms of overall estimates of potential demand, water supply share is only about 28 percent, with sanitation constituting nearly three-fourths of total demand. The large demand for sanitation is mainly for basic service levels.

Table 2.1: Potential Demand for Microfinance across WSS Segments and Regions (2004-2015)

	Borrowers (in millions)			Total Estimated Loans (in USD billions)		
	East/Southeast Asia	South Asia	Sub-Saharan Africa	East/Southeast Asia	South Asia	Sub-Saharan Africa
Urban Water	7.5	7.9	4.7	0.6	0.9	0.4
Rural Water	5.0	10.3	3.1	0.2	1.1	0.2
Urban Sanitation	23.2	7.9	3.4	1.7	1.4	0.6
Rural Sanitation	17.3	30.8	4.4	1.1	3.1	0.8
Total	53.0	57.0	15.6	3.7	6.6	2.0

Note: Refer to text and Annex 1 for assumptions used and detailed description of methods. Microfinance loans are assumed to be taken by 25 percent of households with improved service levels, and comprise 50 percent of costs for basic services and 10 percent of costs for a higher level of services. Figures have been rounded and totals may not be exact.

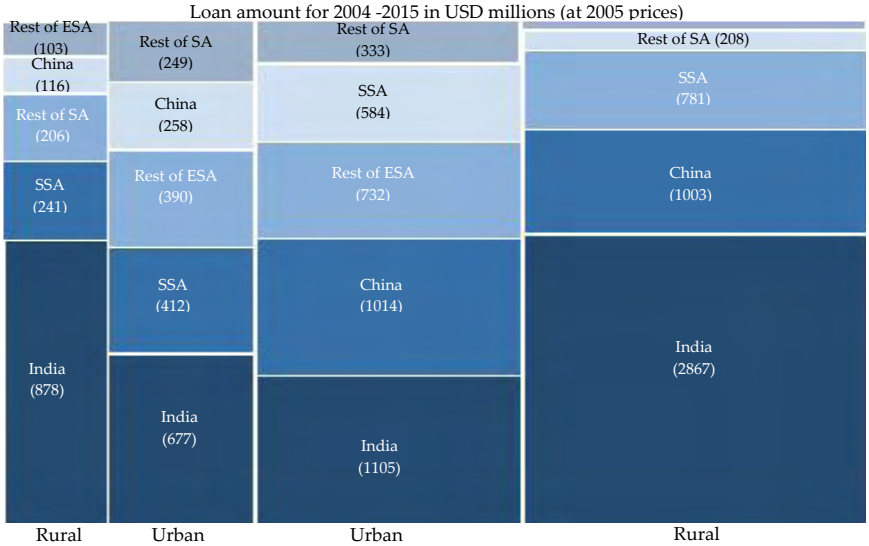
[15] This is based on an assumption that an estimated 50 percent of the population with a per capita income of USD 500 to 1,500 will borrow. Households in these income categories are likely to borrow microfinance. The income distribution estimate is developed on the basis of information on income distribution in over 12 countries as reported in Hammond et al, 2007. Income is measured in 2002 international dollars.

[16] Because detailed studies are not available, these assumptions are based on a broad understanding of prevailing patterns. For basic services the costs are low and households may use their own savings, or available subsidies, to meet about 50 percent of costs. For higher service levels, loan financing would generally be only for individual connections; this cost is estimated to be about 10 percent of the total cost of higher services. The full cost includes water or sewerage infrastructure for source, sewage treatment, and distribution or collection systems There is a possibility of a higher share going up to 50 percent in rural water supply where small projects are taken up for financing.

In terms of country estimates, India accounts for nearly 39 percent of the total potential demand for water supply, and 46 percent for sanitation. China, due to its large population, has a high potential demand, but most of it is for sanitation.[17] However, the scope is also quite large across the rest of Asia and Sub-Saharan Africa, as is evident from the maps below, which show the level of loan volumes in different countries. In East and Southeast Asia, Vietnam, The Philippines and Indonesia all have high demand levels, as do all other countries in South Asia. In Sub-Saharan Africa, Nigeria, Ethiopia, Tanzania and Kenya have high volumes of demand.

Composition of Potential Demand for Water Supply & Sanitation

Loan amount for 2004 -2015 in USD millions (at 2005 prices)



ESA – East & Southeast Asia, SA – South Asia, SSA – Sub-Saharan Africa

Total Potential Loans for Water Supply and Sanitation, 2004-2015

(Loans in USD millions at 2005 prices)

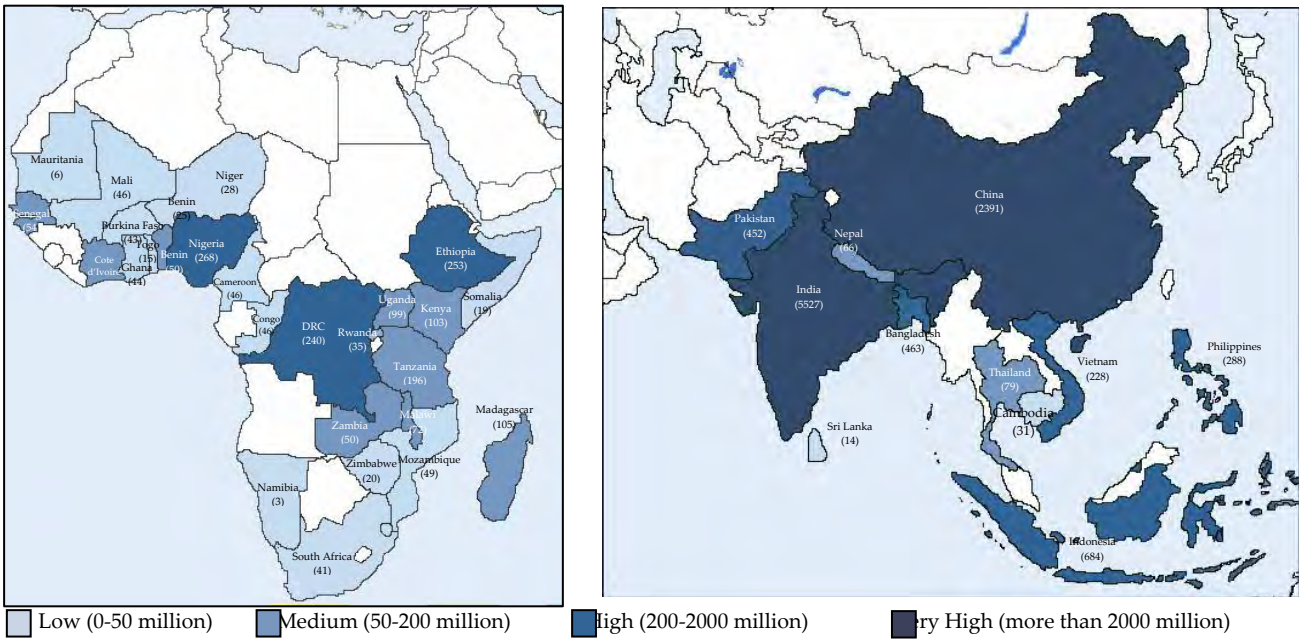


Table 2.2 highlights the variation in potential demand across the three regions for higher level of services. Regionally, East and Southeast Asia seem to be well ahead in terms of moving towards higher level of

[17] See Annex 1 for country-level estimates of potential demand.

services, whereas the trend for higher services in South Asia seems limited. Interestingly, even in Sub-Saharan Africa, demand for higher service levels is greater than in South Asia.

The extent of higher level service levels is possibly also influenced by a country's income, as reflected in the high correlation coefficient (at 0.67) between the extent of higher level of services and a country's per capita income[18]. However, a few countries (such as India, Sri Lanka, and Pakistan) in South Asia do not have the higher services one would expect, considering their level of income. However, these trends may be changed by encouraging the use of commercial finance for a higher level of services. This may require some policy changes, but would help free up public resources to focus on the poorest of the poor.

Table 2.2: Share of Demand for Higher Services by WSS Segments and Regions

	Percentage Share of Total Loans for Higher Services		
	East/Southeast Asia	South Asia	Sub-Saharan Africa
Urban Water	72.5	17.6	30.7
Rural Water	91.6	4.1	7.4
Urban Sanitation	62.1	4.9	16.8
Rural Sanitation	12.5	0.0	1.1
Total	51.0	4.3	12.4

In all the regions, demand for microfinance for rural sanitation will be mainly for a basic level of services, essentially loans for individual toilets. Likewise, in South Asia and Sub-Saharan Africa, demand for microfinance for rural water is also largely for basic levels of service. Given the current focus of "subsidized" provision of basic water, microfinance loans will have to be combined with grant-supported community mobilization and demand promotion activities.

Importantly, this analysis used conservative estimates and restrictive assumptions. Clearly the size of demand will increase significantly if sector reforms provide more space for using commercial finance in WSS. This will be influenced by public policies that determine the level of subsidies for water and sanitation services. Widespread perception that a high level of subsidy is available for WSS, even if not backed by fiscally sustainable allocations, often tends to reduce the propensity of households and small water projects to borrow. However, if the public policy is clear in terms of limiting subsidies to ensure affordable access, this can provide the necessary space for using commercial finance. This is illustrated by several examples in India and Vietnam for sanitation, and in Kenya for small community-managed water projects (explored further in Section 3).

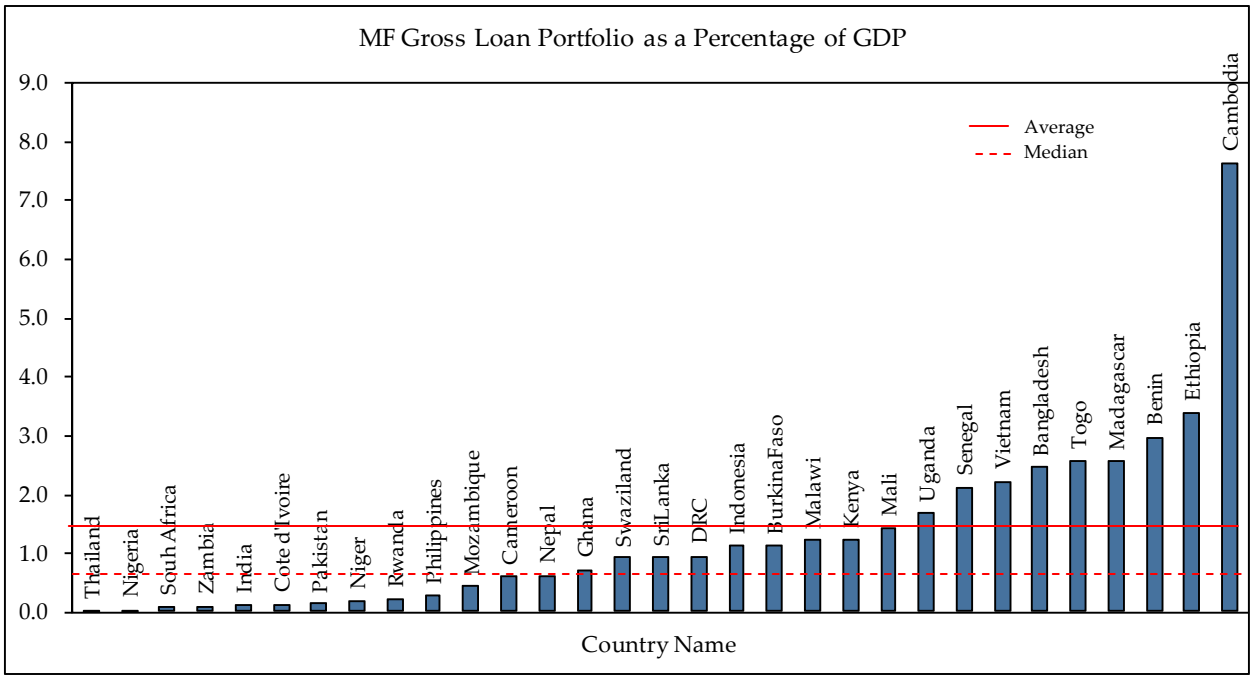
2.3 Assessing the Supply Side–Financial Sector Potential across Countries

In most countries reviewed here, the use of microfinance would likely be relevant to improve the in sustainability of WSS investments.[19] While this could be done on a pilot basis in any country, the overall impact will be much stronger in those countries where significant scaling up possibilities also exist. For microfinance to be viable at scale there has to be a relatively well-developed financial sector from which

[18] The correlation coefficient between the share of higher level of services and the country's per capita income is 0.67 for 32 countries for which this information was available.

[19] Refer to Chapter 4 for a discussion on impacts of using microfinance for the water and sanitation sector.

such funds can be accessed. This potential is assessed by relating the estimated potential demand for WSS to the total microfinance sector as measured by gross loan portfolio.[20]



Source: Based on information from Mixmarket. See Annex 1 for details.

Size and Composition of Microfinance Sector in Countries: There is considerable variation across countries in terms of the presence of the microfinance sector as measured by the size of the total gross loan portfolio of MFIs as a proportion of country GDP.[21] At least 14 countries (including Cambodia, Benin, Madagascar, Togo, Vietnam, Bangladesh, Mali, Senegal, Ethiopia, Uganda, Kenya, Malawi, Burkina Faso, and Indonesia) have considerable MF presence with a gross MF portfolio that is more than the average value of 1.3 percent of country's GDP.[22] A large MF sector suggests more competition and possible interest among MFIs to diversify their product range in the water and sanitation sector. However, even in countries where there is a limited but growing MF presence (e.g., in India and Zambia) there may be interest among MFIs to use WSS to increase their outreach among the poorest and low income groups. For example, an emerging concern in the microfinance sector is social performance related to outreach to the poor. Enabling access to the WSS sector could help to increase the outreach of MFIs.[23]

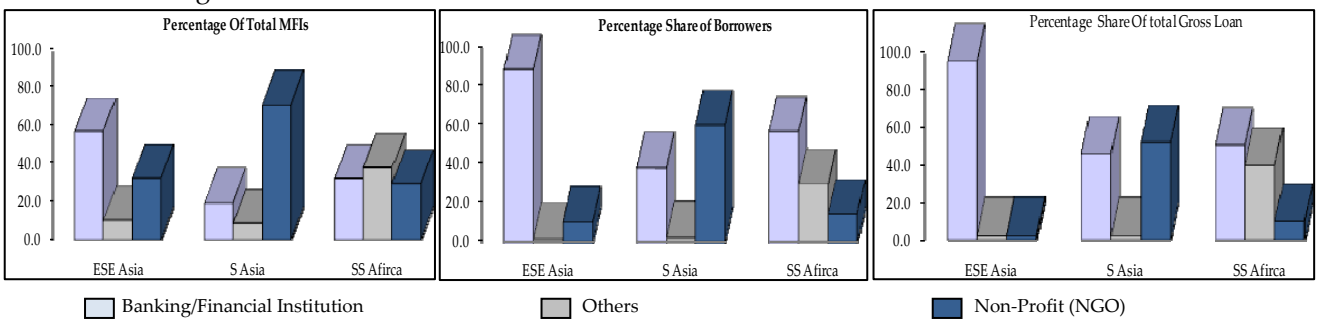
[20] While the policy and regulatory framework for the financial sector (including banking, other financial institutions, and the microfinance sector) are likely to also greatly influence its use in the water and sanitation sector, a detailed inquiry of these in different countries is not within the scope of this assignment. In assessing specific opportunities in given countries, however, such assessments will be required.

[21] Information on gross MF loan portfolio for each country has been compiled from information on over 555 MFIs for 2005-2007 on the MixMarket website (http://www.mixmarket.org/en/home_page.asp). Congo and Somalia are not included due to lack of data; and Mauritania, Thailand, China, Namibia, Nigeria, and Tanzania are not included as they have a negligible MF presence.

[22] Even in Latin America some of the countries with a good MF presence, such as Bolivia and Ecuador, have gross loan portfolio-to-GDP ratios of 9 percent and 2 percent respectively (based on information from Mix-market website).

[23] This is discussed further in Chapter 3, which examines available experience in using microfinance for water and sanitation, and in Chapter 4, which reviews the impacts of f microfinance for water and sanitation.

In a number of countries (such as Mauritania, Thailand, China, Namibia, Nigeria and Tanzania), there is a negligible MF presence: with a sector size of less than 0.2 percent of GDP and very limited opportunities to scale up use of microfinance for WSS. In these counties, further exploration is needed to see if WSS can help increase the outreach of microfinance institutions in these countries. Furthermore, in some countries, such as India, Thailand, and China, there may be the possibility of exploring the wider financial sector for WSS financing.[24]



Source: Based on information from Mixmarket. See Annex 1 for details.

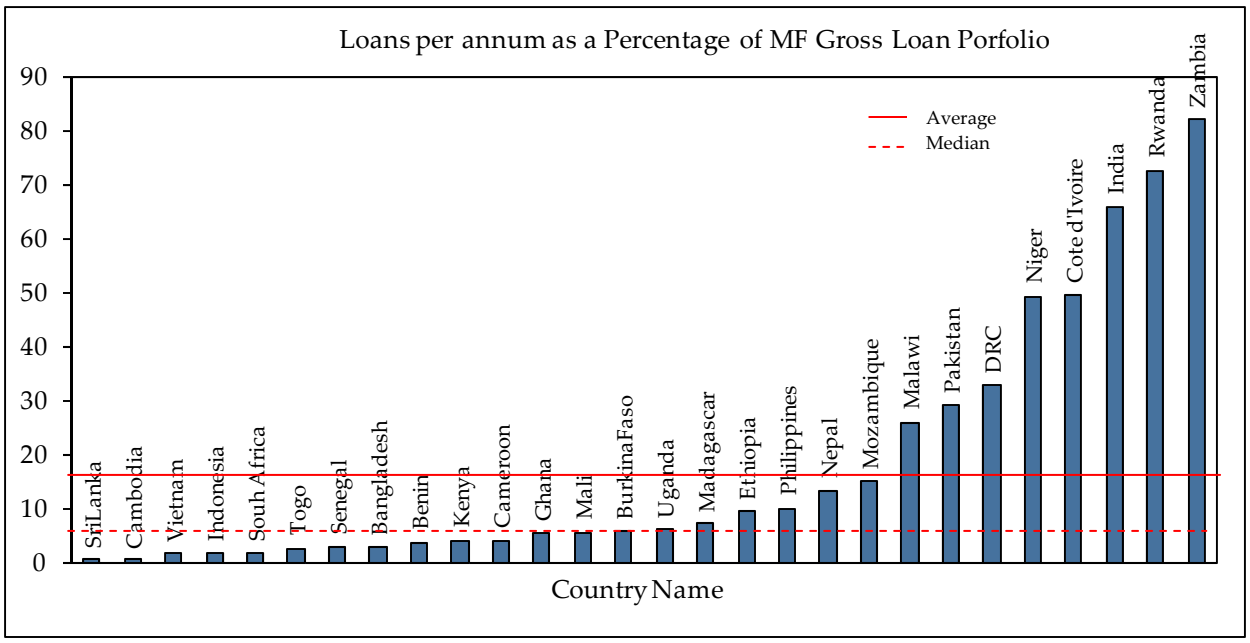
The types of micro-finance institutions across the three sub-regions vary greatly: East/Southeast Asia (ESE) is dominated by a few large banks (such as the Vietnam Bank for Social Policy and BRI in Indonesia). South Asia has a large number of nonprofit NGOs operating as MFIs, though banks and non-banking financial institutions (NBFIs) are also emerging as important. The dual presence of both NGOs and NBFIs in South Asia is beginning to present some policy tensions because of their different approaches to microfinance. India also has a very large microfinance presence through the informal self-help groups (SHGs) that are not considered in this analysis[25]. Sub-Saharan Africa has a wider range of MFIs though the nonprofits seem very small, with less outreach and small portfolios. MFIs also have varying objectives. For example, the banks and NBFIs in South Asia are more likely to focus on increasing outreach and portfolio size (and to be concerned about profit margins), whereas the smaller nonprofit NGOs are more likely to experiment with new approaches that may require more attention to community mobilization.

Relating WSS Demand Opportunities to the Microfinance Sector: The estimated WSS demand potential needs to be assessed in relation to the size of the MF sector in each country. The estimated loan volumes are assessed in relation to the total gross loan portfolio of the microfinance sector in each country. On an average, WSS demand is nearly 20 percent of the MFI loan portfolio, though the median is only 6.2 percent.[26]

[24] For example, China has high total financial system deposits at almost 150 percent of GDP; and for Thailand and India it is nearly 100 percent and 50 percent, respectively

[25] For example, see Ghate, 2007, who estimates that cumulatively, nearly 3 million SHGs in India had reached about 41 million persons by 2007, with a cumulative loan disbursal of about USD 4.2 billion over a period of seven years.

[26] Refer to Annex 1 for details. Several countries for which MF information was either not available--or which have a relatively small microfinance sector--were not included.



Source: Based on information from Mixmarket and size of loans estimated as per section 2.2 above. See Annex 1 for details.

While there is no benchmark for the most appropriate percentage of WSS in an MFI portfolio, a review of some large MFIs with sizeable WSS portfolios suggests that the share of WSS portfolio may range from 2 to 15 percent.[27] This share depends on available investment opportunities, but a lower portfolio size may be linked to a perception that WSS loans are non-productive and therefore pose increased credit risk. However, an MFI's WSS portfolio can increase significantly if larger loan products for small enterprises are linked to a clear revenue model based on operational surplus of the water enterprise. Larger loans can be useful to help the MFIs improve their portfolio size, as has been done successfully by some MFIs with housing loans.[28]

Implications and Impact of Supply-Side Potential: Table 2.3 provides groupings of countries in terms of their supply-side potential—based on their MF sector size and the size of the wider financial sector. The table also shows the implications and impacts in using microfinance for WSS sector projects.

[27] Based on the analysis reported in Section 3, and details given in Annex 3. Estimates range from about 2 percent for VBSP, 1.6 percent for Grameen Bank, 15 percent for SEWA Bank, and 5 percent for K-Rep Bank.

[28] For example, in mid-2000, Mibanco (a Peruvian MFI) launched its housing product--Micasa ("my home")--and achieved impressive results within a year, with 3,000 active clients and a USD 2.6 million portfolio. This helped Mibanco's overall profitability, while reaching its poor client base. Micasa achieved rapid and profitable growth because the product was developed and launched within Mibanco's existing branch and lending infrastructure--there was no need to create new offices or hire new loan officers. The program does not provide its borrowers any specific assistance in designing or supervising the construction of their homes (Brown and Garcia, 2002). This is also discussed in Chapter 4, which covers benefits for the MF sector.

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Table 2.3: Country Groups by Extent of Potential Demand in Relation the MF Sector Size

Supply Side Potential for Scaling Up through the MF Sector (WSS loans: percentage of MF gross loan portfolio)		Countries with Financial System Deposits of more than 30 percent of GDP	Implications and Impacts
High (Less than 5%)	Sri Lanka, Cambodia, Vietnam, Indonesia, South Africa, Togo, Senegal, Bangladesh, Benin, Kenya, Cameroon	Sri Lanka, South Africa, Vietnam, Indonesia, Bangladesh, Kenya	High potential for scaling up, through either the MF sector or the wider financial sector.
Medium (5 to 15%)	Ghana, Mali, Burkina Faso, Uganda, Madagascar, Ethiopia, Philippines, Nepal	Ethiopia, The Philippines	MF sector can meet a part of the potential WSS demand. However, program designs need to include an equal emphasis on using WSS products to increase MF outreach.
Low (More than 15%)	Mozambique, Malawi, Pakistan, Niger, Cote d'Ivoire, India, Rwanda, Zambia, China, Tanzania, Namibia, Thailand, Swaziland, Nigeria	Nepal, Pakistan, India, China, Namibia, Thailand	Reliance on the MF sector to scale up WSS does not seem possible. However, for some countries with a large financial sector there are possibilities for linking grants/subsidies and using wider financial sector institutions.

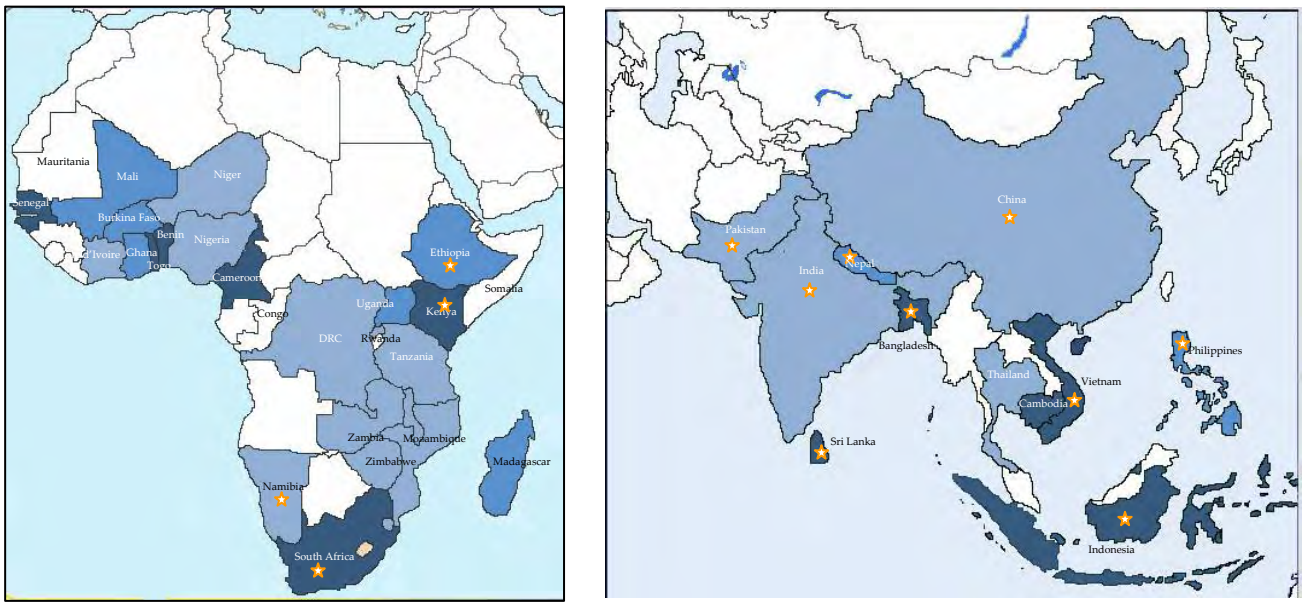
Notes and sources: i) Figures in brackets give the WSS Loans as a percentage of total MF gross loan portfolio; ii) Some states in India, such as Andhra Pradesh, may fall in the first category with high potential for scaling up; iii) Estimates of loans are based on the description above and on details in Annex 1; iv) The size of the MF sector in each country is derived from information on the Mix-market website, Congo, Mauritania, Nigeria, Somalia and Zimbabwe are not included (refer to footnote 21 for details ; v) The information on financial system deposits is from the World Bank (2007).

There is a group of countries (which includes Sri Lanka, Cambodia, South Africa, Vietnam, Indonesia, Senegal, Togo, Bangladesh, Benin, Kenya, and Cameroon) that seems to have a good balance between the potential demand for WSS microfinance and the supply of funds by MFIs. However, realization of this demand will depend on appropriate policies that provide space for microfinance and encourage the use of microfinance for WSS. For example, South Africa has a high level of subsidies for basic water and sanitation, as well as for housing, and this may actually preclude the use of microfinance for WSS. On the other hand, some countries (such as Vietnam, Kenya, Benin and Senegal) have more supportive policies for microfinance. Given the extensive presence of the microfinance sector in these countries, there is a greater possibility of experimentation and the use of a variety of WSS products.

In the second group of countries, the microfinance sector can meet a part of the potential WSS demand. However, program designs also need to capitalize on the possibility of using water and sanitation lending to increase the outreach of microfinance sector. More detailed inquiries are needed to review the WSS policies of these countries.

In the third group of countries, sole reliance on the microfinance sector is not possible to scale up use of microfinance for WSS, or to even meet a large share of demand. However, for some of these countries (e.g., India and China) that have a large financial sector, there may be possibilities for using wider financial sector institutions to meet a part of demand.

Supply-Side Potential in Relation to Potential Demand



WSS Loans as a Percentage of MF Gross Loan Portfolio. Refer to Table 2.4 for details

Low (More Than 5 %) Medium (5 %- 15 %) High (Less than 5 %)

☆ High Financial Sector Potential (Financial deposits of more than 30 % of GDP)

The supply-side analysis above will be affected by country-level policies and regulatory frameworks for the microfinance sector, which will affect the ability to mobilize resources and to water and sanitation products, as discussed in later sections. Realizing the large market potential identified above will also require appropriate policies to provide space for the use of microfinance in the water and sanitation sector. Understanding these policies and their potential to encourage or constrain the market will require country-level assessments. Demand assessments, to understand willingness to borrow and pay for basic and higher service levels are also needed.

Realizing this market potential also requires identification of appropriate support measures to articulate and respond to demand. This is explored further in the next section, which looks at available experience in using microfinance for water and sanitation.

3. Lessons from Experiences in Using Microfinance for Water and Sanitation

This section develops a product segmentation framework for using microfinance for WSS services. This framework was used to review available experience. Given the paucity of readily available references, the desk search was enhanced by follow-ups with over one hundred practitioners, and a review of several MFI websites[29]. This has yielded a varied set of experiences and cases, even though the scale of operations still seems limited in relation to the potential size of the demand (as estimated in the previous section).

3.1 Product Segmentation Framework

A product segmentation framework was developed using two key factors: a) types of loans that are likely to be available as microfinance; and b) water and sanitation opportunities in urban and rural areas, as discussed in the previous section.

These factors were assessed in relation to the potential demand identified in Chapter 2 and to a number of actual experiences.[30] Based on this, Table 3.1 provides a segmentation framework for three MF products: retail loans for household WSS; small and medium enterprise (SME) type loans for small water supply investments; and loans for urban services upgrading and shared facilities in low income areas of towns and cities.

Table 3.1: Microfinance Products in Water Supply and Sanitation

WSS Segment	Retail Loans		SME Loans
Rural Water	1. Retail loans for households		2. SME type loans for water supply
Urban Water		3. Urban services upgrading and shared facilities	
Urban Sanitation			
Rural Sanitation			

3.2 Experiences in Using Microfinance for Water and Sanitation

This section highlights experiences using microfinance in WSS. While this report's analysis indicates a large potential market, which has been corroborated in discussions with experts from both sectors, experiences so far suggests that although several pilots are available to study, the sustainability and scalability of the market is still unknown. The examples below provide a summary of known experience, using the framework described above.

1. Retail Loans for Households: Retail loans to households for water and sanitation are generally more suited to current capacities of microfinance institutions. These are made to individuals and are generally of short- to medium-term of less than three years. The loan amount is usually small as the purpose of this

[29] See the list of References for different case studies. Over one hundred researchers and practitioners were contacted to obtain information on these examples. A full list (of persons contacted, and the websites checked) is in Annex 2.
[30] For detailed notes and sources for the cases reviewed in this section, please refer Annex 3.

type of loan is for new water connections, construction of family wells, bathrooms or toilets, or installation of water purifiers. There is a strong potential for developing a standardized product for such demand, as the potential market size is huge in both rural and urban areas. At present many MFIs do not have separate products, but this demand is served by the usual consumption loans.

The cases presented in Table 3.2 suggest two different approaches are being adopted. The first includes activities undertaken by some large microfinance institutions as a part of their normal routine operations (e.g., by several MFIs in Bangladesh including Grameen Bank, BRAC, and ASA; Vietnam Bank for Social Policy; and SEWA Bank in India). A second approach comprises activities with external assistance: these are often pilot projects (e.g., Basix in India, and BRI-USAID in Indonesia).

***MFI-led retail loans for households*:** A general review of microfinance institutions across the countries suggests that very few have placed any separate emphasis on water and sanitation activities, especially as compared to other sectors such as education, health, and housing, which often figure as more important activities. A review of various MFIs listed in MixMarket[31] suggests that only a few have listed specific water or sanitation products. For example, the Vietnam Bank for Social Policy (VPSB) separately lists Safe Water and Rural Environmental Sanitation Programs; the bank also provides information on outstanding loans for this program in its 2007 balance sheet (USD 20 million or about 1.8 percent of its total assets). BRAC states that it "works with concerned authorities like the City Corporations, the Health Department, and Water and Sewerage Authority to provide safe water and sanitation for slum dwellers." However, no further details are readily available on BRAC's website on total WSS lending.

There appears to be no clear focus on WSS by most MFIs, but it can be deduced from the activities of some large MFIs in Asia (listed in Table 3.2) that considerable scale has been achieved by some in Vietnam, Bangladesh, and India (though each represents very different modalities and outcomes):

- ***WSS Loans by MFIs in Bangladesh*[32]**: In Bangladesh, some of the larger MFIs have offered special products for water and sanitation in rural areas. For water supply, lending is generally for a borewell, while sanitation lending is for construction of a toilet. In 1998, these products had loan ceilings of about USD 20 for toilets and USD 50 to 100 for water supply. Loans were for up to two years tenor, and sanitation loans were sometimes at lower rates of interest. The scale reached by MFIs in Bangladesh was considerable, with four large MFIs having reached about 9 percent of total rural households in Bangladesh by 1998. An analysis of the Grameen Bank suggests that WSS was a significant component of its portfolio by 1998, and almost 30 percent of its members had taken out a loan for water or sanitation. In value terms, this formed only 1.6 percent of Grameen's cumulative loan disbursement in 1998, suggesting rather small sizes for these loans. However, Grameen Bank reports that in recent years, it has discontinued lending for borewells due to the arsenic problems in Bangladesh. It also now includes toilet loans as part of its housing loan product.

[31] See website of Mixmarket at http://www.mixmarket.org/

[32] Based on WSPSA, 1999 and communication with Ms. Nurjahan Begum, Grameen Bank, and Abdul Bhuiyan, SSS. Refer to Annex 3 for further details.

Table 3.2: Retail Water and Sanitation Activities of Selected MFIs

	Microfinance Institution	Country / Program	Total Borrowers	Total Loans (in USD)	Period Referred (years)	Latest year of Information
	MFI Led activities:					
1	Grameen Bank	Water and Sanitation loans, Bangladesh	921,000	35,000,000	15	1998
2	Bangladesh Rural Advancement Committee (BRAC)	Water and Sanitation loans Bangladesh	335,000	5,800,000	26	1998
3	ASA	Water and Sanitation loans Bangladesh	229,000	7,200,000	19	1998
4	Society for Social Services (SSS)	Water and Sanitation loans Bangladesh	19,000	480,000	12	1998
5	Vietnam Bank for Social Policy (VBSP)	Safe Water and Rural Environmental Sanitation Program, Vietnam	450,000	110,000,000	3	2007 (ongoing)
6	SEWA Bank	Ahmedabad, India	7,300	4,100,000	5	2007 (ongoing)
7	SHGs and District Coop Banks in Maharashtra	India, Under Total Sanitation Campaign (TSC)	640,000	18,000,000	5	2005 (ongoing)
8	Swadhaar Finaccess	Mumbai, India	18	3,000	1	2007 (ongoing)
	Activities with External Support/ facilitation					
9	Revolving Funds by Vietnam Women's Union	Vietnam, World Bank funded Urban Sanitation Program,	14,000	2,100,000	3	2002
10	SHGs and local commercial banks	India, Program supported by Gramalaya and WaterAid	9,000	425,000	1	ongoing
11	Bhartiya Samruddhi Investments and Consulting Services Ltd., (Basix)	India, with TA and credit support from Water Partners International	2,700	242,000	2	ongoing
12	Lesotho Bank	Lesotho, Sanitation Program funded by KfW and GoL	7,500	650,000	3	1995
13	Bank Rakyat Indonesia (BRI)	USAID supported Environmental Services Project (ESP), Indonesia	2,200	230,000	2-planned till 2009	ongoing
14	Cooperative Housing Foundation with local NGOs and a revolving fund	Low cost sanitation project by Cooperative Housing Foundation (CHF), Tegucigalpa, Honduras	1,300	350,000	3	1995
15	Various domestic MFIs including Mibanco, and Municipal Cajas de Abhorro Credito (CMAC)	Joint Program on sanitation with multiple donors and the Vice Ministry of Construction and Sanitation, Peru				Under design

Sources: Refer to Annex 3 for details.

- ***Special WSS Loans at Scale in Vietnam***[33]: The Vietnam Bank for Social Policy (VBSP) has also introduced a separate product for water and sanitation, through the Safe Water and Rural Environmental Sanitation Program (SWRESP) and has achieved significant scale. Over a short period of 3 years VBSP has managed to build up a borrower base of nearly half a million households with cumulative loans of USD 100 million. In 2007 its outstanding loans for SWRESP were USD 20 million, comprising about 2 percent of its gross assets, and cumulative borrowers under this program were nearly 10 percent of its total active borrowers in 2007. Demand for this product is very high. The product is offered countrywide and the loan terms include tenor of less than five years; loan size of less than USD 460; and interest rate of about 7.8 percent. Borrowers have to join a savings and credit group and no other collateral is required. For this program, VBSP draws on the cooperation of the Vietnam Women's Union (VWU), which is large mass-based organization with over 11 million women members. VWU gained experience in sanitation through a World Bank project, using a revolving fund approach. However the link with VBSP has helped to mainstream the sanitation loans with a regular MFI. VWU helps with community mobilization and formation of groups as well as collection of interest, and is paid a commission for these services.

- ***Borrowing for Household Sanitation Facilities in Maharashtra, India***: In India, the limited available documentation suggests possible borrowing by households for toilets under the Government's Total Sanitation Campaign (TSC) Program. Available evidence from verification reports for a Government of India reward scheme (Nirmal Gram Puraskar) in the state of Maharashtra suggest that about 60 percent of households who built new toilets took loans with an average loan size of about USD 30. Over 1 million households built toilets between 2001 and 2005, and an estimated 640,000 loans (for a total of USD 18 million) have probably been taken for sanitation. These are loans from the fast growing self-help groups (SHGs) as well as district level cooperative banks. There is no overall assessment of the extent of this activity to cross-check these estimates.[34] Discussions with staff involved with these programs suggest that easy access to micro-credit has resulted in better performance in sanitation coverage.

- ***Use of MFI Regular Loans for WSS Purposes***: In addition to these more targeted MFI products, it is likely that a significant share of general purpose loans from many MFIs is used for water and sanitation. Although these details are not always available, some studies have reported this trend for MFIs in India and for a few countries in Africa[35]. Some MFIs, such as the SEWA Bank in India, track the purpose of loans. Based on this information it is estimated that in the past five years, nearly 12 percent of borrowers and 15 percent of total loans by the SEWA Bank in the city of Ahmedabad were used for water or sanitation sector activities. SEWA Bank's sister organization, the Mahila Housing Trust (MHT), is currently doing a more detailed end-use tracking of SEWA Bank's loans. A smaller start-up MFI (Swadhaar Finaccess in Mumbai, India) also traced a

[33] Based on the VBSP website and communication with Nhan Cu, Director of International Cooperation, VBSP. Refer to Annex 3 for further details.

[34] Estimates are developed using the rather limited available experience based on Jain, 2007, and Government of Maharashtra, n.d. For further details see Annex 3.

[35] For example, a series of studies by the Water and Sanitation Program in India reported such usage by SEWA Bank, Mahila Milan, Padmavati Sangam, and Baroda Citizens' Council (see WSPSA and SEWA Trust, 2000). An early study commissioned by the water and sanitation program in Sub-Saharan Africa also found similar evidence in Benin, Uganda, and Zambia (ICC, 2002).

number of loans that were used for water and sanitation, though their share of the total portfolio was estimated at less than 1 percent.[36]

Externally facilitated retail loans for water or sanitation: Across all the regions, there is some retail microfinance for water and sanitation, supported through external assistance from donors, and from international and local NGOs. Over the past few years there has been some general donor interest in exploring the use of micro-credit for water and sanitation activities. In the 1990s, donors focused on creating special revolving funds, often with guarantees (as in Honduras, Lesotho, and Vietnam). Though these programs did achieve some success, they were not sustainable after donor funding stopped. More recently, donor efforts have focused on linkages with regular MFIs or banks, possibly reflecting greater development of the microfinance sector. Though these are still at very initial stages they do seem to focus both on scaling up and ensuring sustainability.

The three ongoing cases of external support for MFI linkages present different approaches:

- ***The case of BRI in Indonesia***[37] links the MFI with the water utility (PDAM Tanah), in a win-win situation for both. USAID has supported this initiative with technical assistance under its Environmental Services Program and plans to scale up countrywide with a target of 10,000 connections by 2009. The effort has yielded benefits for the utility and the MFI, along with the customers who otherwise lacked access. This program does not include any subsidies. It is worth checking if a recent project under the World Bank-managed GPOBA, which provides subsides for such connections, will crowd out the BRI program. There may be lessons from this experience for several utilities across the countries studied. A micro-credit alternative can be useful to address the issues of slow uptake even with subsidized connections using output-based aid (OBA).

- ***Gramalya in Tamilnadu, India (with support from WaterAid and WPI)***[38] has facilitated linkages between self-help groups and local banks to mobilize funding so that individual households can construct toilets. This is a part of wider sanitation efforts focusing on "open defecation-free status" for these villages. Over a period of nine months in 2007, about 9,000 toilets were built at a total cost of USD 675,000, of which 25 percent was initial household contribution, 12 percent was government subsidy, and the remaining 63 percent (or USD 425,000) was taken as loans. The loans were mainly from: a) SHGs internal savings through a common fund (26 percent), and b) domestic commercial banks that are ready to give loans for latrines (36 percent). Households have managed to effectively combine available government subsidies with loans from SHGs. There is significant scaling up potential as this effort ties in with the rapidly growing bank-SHG linkage program in India. Gramalaya has received support from WaterAid for technical assistance for this activity.

  Gramalaya has received somewhat different support from Water Partners International through a USD 425,000 grant to support hardware and software components of its Water Credit program. It has so far provided loans for 667 water connections and 1,500 toilets under this program. Gramalaya has kept the remaining funds as a revolving fund with a new institution, Guardian,

[36] Refer to Annex 3 for details.

[37] Based on Development Alternatives, 2006; Bahar, 2006; Prabaovo, 2007; and communication with staff of USAID and ESP (Neil van Dijk and Alan Hollenbach). Refer to Annex 3 for further details.

[38] Based on communication from George Fernandez; WaterAid, Rich Thorsten, WPI; and www.gramalaya.org

set up as a MFI with technical assistance from Basix, a leading MFI in India. Gramalaya will continue to provide community mobilization and facilitation support, but the loans will be made by Guardian. Self-help groups that receive loans can use the loans to onlend to households--for toilets or for water connections to piped systems in both rural and urban areas.

- ***Basix in India with support from Water Partners International***[39] has piloted a new WSS product in four different locations in rural and urban areas. The new product is similar to others and does not include any subsidies. The loans are through joint liability groups. This is backed by market research in each area and a line of credit for long term funds from WPI. The new product has done well in three out of the four planned locations, though the uptake has been far more for sanitation (toilets and bathrooms). Basix used different approaches for facilitation of this activity in different locations. In the rural area of Ganjam, it worked through its own staff, in Delhi through social workers, and in Indore (a smaller city) through a NGO. Loans are made to joint liability groups. New operations have just been initiated in Hyderabad, where market research was supported by the Administrative Staff College of India (ASCI). Basix plans to scale up this product after the pilot phase.

- ***Alternative "pro-poor" sanitation solutions in Peru***[40] a new sanitation initiative that brings together government with a large number of donors also includes a component to bring in micro-credit through MFIs. The program envisages emphasis on promotion and demand through a number of activities, as well as strengthening micro enterprises, and developing technology and micro-credit options. The credit component is still evolving. Given the rather well developed status of several MFIs in Peru, it would be useful to explore a lead role for some MFIs that could internalize these products in their portfolio. This would increase the chances of sustainable scaling up later on.

2. SME loans for water supply: SME financing has taken on a considerable importance in recent years. Many banks and financial institutions see market potential in the SME segment and have set up special SME units. However, so far the WSS sector has not received much attention in such efforts.

SME loans can be for investments to community groups, for private providers in greenfield contexts, or for augmentation/rehabilitation of WSS. There is also some possibility of SME loans for other suppliers in the value chain--such as pit latrine emptiers and tanker suppliers. These loans are potentially suited for mature MFIs. Potential for significant market size exists for small water supply projects, when policy environment provides space for such finance, and when there is clarity in institutional relationships.

Compared to household retail products, the experience with SME-type of loan products is limited. A few examples of SME financing for water supply were identified, but these remain largely at the pilot scale. The experience presented in Table 3.3 suggests that some recent projects using microfinance for community-based service providers in Kenya, Senegal, and Ivory Coast do present possibilities of sustainable scaling up:

[39] Based on communication with Basix (Parthasarthy), and WPI (Rich Thorsten). Refer to Annex 3 for further details.
[40] Based on Macroconsult 2007a, and 2007b.

Table 3.3: Examples of SME Microfinance for Water and Sanitation Activities

	Microfinance Institution/ Banks	Country / Program	Total Borrowers/ Projects	Total Loans (in USD)	Period (no. of years)	Last year
	Community Managed Water Supply Projects					
1	K-Rep Bank	With facilitation from Water and Sanitation Program (WSP) and PPIAF, GPOBA, and EUWI assistance, Kenya	41 community managed water supply projects	USD 1.6 million (40% of project costs)	About 5 years expected	Ongoing
2	CMS	Regefor Project funded by AFD, Senegal	32 ASUFORs (community managed water projects)	USD 200,000 (20% of project costs)	5	2007
3	Cooperative d'Epargne et Credit (COOPEC)	With facilitation by CREPA, in Abobo-Sagbe and Kuweit, Ivory Coast	1,300 households through community committees	Estimated USD 53,000	na	Ongoing
	Private / Small Public Water Provider					
4	Rural Infrastructure Fund by GRET	MIREP Project, Cambodia	14 networks serving 18,000 persons	na	5	2006
5	Six MFIs in Togo	With facilitation by CREPA, in Lome, Togo	1,200 household entrepreneurs	USD 1.8 million	6	2006
8	Various domestic banks (to be identified)	The Philippines	Under design			

Sources: Refer to Annex 3 for details.

- ***Community water projects and microfinance in Kenya***[41]: Kenya has vibrant community-managed small water enterprises. The institutional and financing policies of GoK provide space for commercial finance. The Water and Sanitation Program in Africa has facilitated an initiative to use microfinance for this segment. Under this, K-Rep Bank (a commercial microfinance bank in Kenya) will provide loans on a fully commercial basis to 21 community-managed water projects. This program is backed by partial subsidies from the Global Partnership on Output-based Aid (GPOBA). Each project will be pre-financed with a loan up to 80 percent of total project costs (an average of about USD 80,000 per project). And upon successful completion and independent verification, a 40 percent GPOBA subsidy will refinance a part of the loan. The remaining loan repayment will be from water revenues. Use of water for productive purposes helps increase viability. Technical assistance grants are provided to assist with project development. Each community project also receives a grant for management assistance during project implementation, and during first year of operations. This will enable the development of a market based Business Development Services (BDS) sector for the small water projects. The program structure provides the possibility of countrywide scaling up. Further assistance for another 21 projects has been approved by the GPOBA with additional funding from the European Union Water Facility.[42]

[41] Based on Mehta and Virjee, 2007; Mehta, Virjee, and Njoroge, 2007. Refer to Annex 3 for further details.

[42] Based on communication with Kameel Virjee, Water and Sanitation Program, Africa.

- ***ASUFORs and microfinance in Senegal***[43]: Over the past years, community management has been successfully introduced in rural water supply in Senegal with over 1,200 community-managed projects (ASUFORs) managing rural piped networks. Under the REGEFOR project funded by the French development agency (AFD), CMS (a Senegalese MFI) provided loans to about 32 ASUFORs to meet their 20 percent share of new infrastructure investments. It received a line of credit from AFD for long term finance for five years. Its experience was successful in terms of repayment: in fact it now has several ASUFORs as its regular clients. However, despite the CMS interest, further lending to ASUFORs needs support for project development as well as partial subsidies to address affordability concerns. With a high share of smoothly functioning ASUFORs and a conducive policy environment, there is considerable scope for achieving countrywide scaling up (by introducing meters, developing further extensions to the network, and increasing household connections). A combination of household loans and SME-type loans to ASUFORS with appropriate subsidy mechanisms can be developed easily in Senegal through appropriate facilitation of linkages between ASUFORs and domestic MFIs. This can introduce a new and exciting perspective that can further enhance the sustainability of ASUFORs.

- ***Microfinance for local community committees in Ivory Coast***[44]: Ivory Coast has one of the oldest private sector concessions for water supply in Africa (with the private company SODECI). It also has a policy of giving social connections to low income residents at a discounted rate of USD 40. Despite this, however, a significant number of low income settlements do not have access to the utility network. CREPA facilitated the process by using microfinance to provide affordable connections: CREPA formed local committees, whose role was collecting the repayments to the MFI from households. This program has been implemented in two areas of Abobo-Sagbe (250 households) and in Koweit (1080 households). The MFI, Cooperative d'Epargne et Credit (COOPEC), provided loans for linking connections to the utility network. The local committee also managed the later operations, and helped with collection of water charges on a regular basis. This approach has the potential to be scaled up in all unserved areas within the SODECI's jurisdiction

Evidence for other small service providers, private utilities, and small public utilities is limited, though experience from the cases reported in Table 3.3 does suggest some future trends:

- ***Loans for small private providers in Cambodia***[45]: Small private providers have a large share of the market for rural water supply in Cambodia. However, their operations are often not formally recognized and they lack a consistent regulatory framework, and hence lack a firm legal basis for their operations. An international NGO, GRET, has worked in Cambodia to support formal contracts with private providers through two projects: MIREP and PACEPAC. Under MIREP about 15 water networks have been built and contracted to private providers. GRET has also facilitated WSS borrowing by these private providers from domestic commercial banks. To this end, more formal contracts, better information, and the credibility brought by GRET's involvement as a credible "promoter" have all helped. In both the MIREP and PACEPAC projects, GRET facilitated access to subsidies (30 percent) and loans (15 percent) from a commercial bank in Cambodia. However, given the rather new approaches, and a lack of credit

[43] Based on Hane and Dia, 2006; and communication with Luc Hoanggia. Refer to Annex 3 for further details.
[44] Based on IRC and CREPA, 2005; Kouassi-Komlan, Evariste, 2007b. Refer to Annex 3 for further details.
[45] Based on GRET website (http://www.gret.org/pays_uk/); IRC and CREPA, 2005; Virjee, 2006; Salter, 2003; and communication with Jan-Willem Rosenboom, WSP. Refer to Annex 3 for further details

history for such deals, GRET also provided partial guarantees through a Rural Infrastructure Fund set up with a public sector development bank in Cambodia, which helped to reduce the rate of interest (14 percent compared to a market rate of 25 percent) and needed collateral (200 percent of loan value as compared to market rate of 300 percent).

- ***Microfinance for private entrepreneurs in Togo***[46]: Lome in Togo faces considerable water shortages, and the utility has not been able to respond to the needs of a large proportion of the population. A change towards private provision of services was initiated through CREPA awareness campaigns. With the advent of new entrepreneurs who were willing to use more appropriate technologies, a credit scheme was developed with six domestic microfinance institutions. Under this program, at least two households from a given area/community (members of which are also members of the MFI) can apply for a loan for new water investments at the normal MFI rates of nearly 23 percent. These water investments include either a shallow borehole (USD 3,000) or a rainwater harvesting tank (USD 1,000). The loan application has to be backed by a drilling permission from the Ministry of Water, and an agreement with the private entrepreneur. Loans are borrowed by households but the funds are disbursed directly to the private drilling companies. The viability of these loans essentially depends on the reselling of water in bulk or in buckets.

- ***Exploring commercial finance for small public water utilities in The Philippines***[47]: Small public utilities are dominant in urban areas outside the Manila Metropolitan Area—and these utilities generally have fewer than 5,000 connections. Through Executive Order 279, issued in 2004, Water Districts and other water service providers are to be categorized by their level of creditworthiness. Those with a high level are expected to access market-based funding directly. Small Water Utilities Improvement and Financing (SWIF), a project by the Water and Sanitation Program, aims to build capacity for credit by addressing demand- and supply-side constraints. There are three components: i) developing performance improvement plans with investment components; ii) evaluating investment viability through consumer surveys and pricing review; and iii) improving access to finance by domestic government and private financing institutions. About 11 water utilities are participating at present. The lessons are likely to be valid for about 100 municipal government-owned utilities, 300 smaller Water Districts, and over 60 rural cooperatives. Even if 25 percent of these utilities are able to access commercial funds, this would result in over 100 borrowers, and loan assets of nearly USD 10 million. It would require considerable technical assistance and project development support. It is possible that, initially, partial guarantees may be needed until credit history is built up for the sector.

3. Use of Microfinance for Urban Upgrading and Shared Facilities: UN-Habitat estimates that by 2020 nearly 1.4 billion people will be residing in the urban slums of developing countries and will have inadequate services.[48] In several countries, this requires settlement-level services upgrading before individual connections, or even shared services, become possible. A few microfinance institutions have ventured into this critical but challenging area, especially in some large cities in developing countries. The type of financial services and products for these programs are different from the retail (or SME loans) discussed above, and deserve further attention.

[46] Based on IRC and CREPA, 2005; Kouassi-Komlan, Evariste, 2007b. Refer to Annex 3 for further details.
[47] Elvas and Sy, 2007; World Bank, 2005. Refer to Annex 3 for further details.
[48] UN-Habitat, 2006.

As shown in Table 3.4, there is limited experience of the urban upgrading of WSS. The cases reviewed here are mainly from Latin America and India; but there is also a plan to introduce private sector participation in financing and operating public toilets in Kenya.

- ***Parivartan Project and role of SEWA Bank***[49]: SEWA Bank is one of the SEWA group of agencies that work with poor and low income women in Ahmedabad, India. It has been a key partner, along with the Mahila SEWA Housing Trust, in the Parivartan project of the Municipal Corporation that aims to provide a number of basic infrastructure services in more than 1,000 slum settlements housing over half a million persons. Out of a total infrastructure cost of about USD 125 per household, the community contributes a third. In addition, a subsidy is made available for individual toilets. In the case of slums located on government owned lands, guaranteed occupancy rights are given for 10 to 20 years. The program was launched in 1995. NGOs play a role in project implementation, and to date about 47 settlements (about 9,000 households) have been covered. Despite the potential of this initiative, implementation has been very slow and only about 5 percent of settlements have been reached over the last 12 years. The two main reasons for this are related to the difficulty in providing occupancy rights in slums located on private land, and to the slow implementation, because of which the allocated budget of City government was not made available. It would be useful to explore the use of bridge financing in such a case.[50]

  SEWA Bank provides financial management support to slum settlements essentially by mobilizing savings from households and by offering loans so that households can meet their contribution responsibilities. However, regular savings collected during the mobilization phase is generally sufficient to meet the community share of total costs. Thus very few loans have been given by SEWA Bank.

[49] Based on Vyas, 2004; and communications with Bijal Bhatt, Jayshree Vyas, and Madhu Bharti Sharma.

[50] See, for example, the use of CLIFF funds by SPARC and Nirman for bridge finance in providing community toilets in four cities in India.

Table 3.4: Examples of Microfinance for Urban Upgrading and Shared Facilities

	Microfinance Institution/ NGO/ Private Partner	Country / Program	Description	Scale
	Community-based Urban Upgrading			
1	SEWA Bank	Parivartan (Slum Networking) Project, Ahmedabad, India	Savings mobilized for community contribution, with very limited number of loans	47 slum settlements with about 9,000 households
2	Mibanco ("my bank")	Special product called "urban upgrade," Peru	Infrastructure services at community level with loans made to households	Have done 5 projects, but details of WSS not available
3	Genesis Empresarial	CISEC, Guatemala	Infrastructure services at community level with loans made to households	8,000 households
	Shared / Public Facilities			
4	SPARC/ Nirman with resources from CLIFF	Community managed / operated public toilets in Slums, Mumbai, Pune, Pimpri-Chinchwad and Tiruppur, India	Bridge finance with CLIFF funds for community toilets constructed with public subsidies and community contributions	76,000 households, bridge finance for 2 million USD and 1.3 million from banks
5	Acumen Fund and Care Enterprise Canada (CEC) with Ecotact	Public toilets, Kenya	Public toilets in market/ public spaces on a BOT basis with local municipality for a 10 year period	About 30 public toilets in 10 towns

Sources: Refer to Annex 3 for details.

- ***Urban upgrading product of Mibanco, Peru***[51]: Microfinance lender Mibanco was created in 1998 by taking over the financial operations of the NGO "Acción Comunitaria del Perú" (APC) which had been working with Peruvian micro-entrepreneurs for over 33 years. In October 2000, Mibanco introduced an innovative housing loan product known as *Micasa* ("my home") after a two-month pilot testing. It has recently introduced a new line of credit titled "urban upgrade" to offer loans to communities who plan to provide services such as water, sewerage, electricity, roads, and sidewalks in their neighborhoods. The loan can cover up to 90 percent of the project costs, with a tenor of six months to five years, at a 25 percent interest rate for loan of USD 10,000 to 160,000. These are individual loans for each community member, though the funds are disbursed directly to the project provider, contractor, or network installer. The community organization needs to be fully organized with the necessary municipal approvals, select its contractor, and prepare full budgets and cashflow statements. After approval, Mibanco plans to do monitoring through a third party (appointed by Mibanco). Another MFI, Genesis Emresarias in Guatemala also offers a product called "infrastructure and community service credit" (*CISEC*), though this program is for rural areas. It also provides individual loans and has close to 8,000 clients. Unlike Mibanco, it also supports community mobilization and planning processes.

- ***Finance for public/ community toilets in India and Kenya***[52]: Often in low income settlements the lack of adequate space and the lack of legal tenure constrain provision of individual WSS facilities. In many cities throughout the developing world, it is common to find shared community services. Although these are often provided with public resources, new approaches that focus on either community management or on a private sector role in operations have gained

[51] Based on information from Daphnis and Walker (forthcoming); Fernando, 2005; and Mixmarket website.

[52] For India: from CLIFF Annual Review, 2005 and 2007. For Kenya: Communication from J. Mbuvi, WSP; and EcoTact, 2007.

prominence. There may be a case for bringing in commercial finance in these services, not only to leverage additional resources but also to bring in improvements in operational performance.

In India, working with the city municipal corporation, SPARC created a community management model for toilets in the city of Pune. This approach has now been replicated in other cities, including Mumbai and Tirupur. While public resources are used for these toilets, SPARC has also used bridge financing from CLIFF to smooth the construction loan process. In the four cities this has resulted in bridge finance of USD 1.5 million, benefiting about 260,000 households. An example from Kenya provides a different approach, in which the private sector plays a role in the financing and operating of public toilets. Ecotact (a new company focusing on innovative sanitation services) plans to develop sanitation facilities in public places on a Build-Operate-Transfer (BOT) contract with the local municipalities to build and operate for 10 years. Ecotact plans to franchise the facilities to youth groups for day-to-day operations. Ecotact plans to mobilize debt for this activity from the Acumen Fund (USD 400,000) and Care Enterprises Canada (USD 200,000) to develop 30 facilities in 10 municipalities in Kenya. For pay-and-use public toilets in low income neighbourhoods, however, grants funds from the corporate sector are being used.

Urban services upgrading and shared services projects are often looked at only as temporary solutions. In large cities such as Mumbai, there is a move towards rebuilding slum settlements, as was done in urban renewal projects in the United States in the 1960's. However, for a large number of informal settlements, such rebuilding may remain a distant dream. Meanwhile, households in these informal areas continue to spend considerable amounts for a water connection--which, at times, are illegal. This is evident from the experience of Swadhaar Finaccess, a small MFI working in the Mumbai slums. For large scale funding of urban services upgrading, the Thailand-based (CODI) provides a successful model of community funds in WSS projects. Though this may not constitute "commercial finance" in a strict sense, it does provide loan-based resources, and has achieved considerable scale in Thailand. Similar funds have been started in several countries, including Indonesia, Vietnam, and Sri Lanka.[53]

3.3 Measures to Support Scaling Up Across the Three Product Segments

The estimates of potential demand in the previous chapter suggest significant opportunities with potential loans of USD 12 billion across the regions over the next decade. The existence of demand potential was also corroborated in discussions with both MF and WSS sector professionals. However, when reviewed against actual experiences, the picture is somewhat mixed.

Realities of scale in past experiences: Table 3.5 provides a summary of the range of scale and the average loan sizes achieved in the different cases reviewed. The loan sizes range from about USD 30 to 250 for retail loans, though sanitation loans are generally cheaper. The Vietnam Bank for Social Policy (VBSP) stands out for its high level of coverage, at 150,000 loans per year over the past three years. Its cumulative portfolio size is nearly USD 110 million. In two cases the WSS portfolio comprised less than 1.8 percent of the total MFI portfolio: for Grameen Bank, 30 percent of its total borrowers had taken WSS loans, and for VBSP, WSS loans were taken by 10 percent of its total borrowers. In terms of coverage, all MFIs in Bangladesh had reached about 9 percent of rural households. MFIs in Bangladesh also reached scale, but of these, Grameen Bank has stopped its lending for these products. VBSP has achieved 2.4 percent

[53] See the CODI website http://www.codi.or.th/; and the newsletter of the Asian Coalition of Housing Rights, November 2007.

coverage of all households over a 3 year period in Vietnam.[54] Although the SHGs and district cooperative banks in the state of Maharashtra have also made an estimated 128,000 loans per year for the past five years, the average loan sizes are much smaller—USD 30 compared to nearly USD 250 for the VBSP.

For SME-type loans, experience is more limited, though both the Kenya and Togo experience suggest that scale is reachable, and that countrywide or citywide coverage is possible. In the case of Kenya's K-Rep Bank, the Water and Sanitation Program, which facilitated this activity, is already exploring countrywide scaling up through business development services (BDS) and a project development fund. Despite these few cases that show significant scale, in general both microfinance and WSS sectors have paid limited attention to scaling up the type of opportunities reviewed above. This may be due to the relatively recent growth in the number of MFIs with wide outreach potential, as well as to issues related to policy, financing terms, and capacities, which inhibit rapid scale-up.

Identifying key drivers in influencing use of microfinance for WSS: The different cases reviewed suggest two main reasons for "why and how" the microfinance institutions or locally based promoters decided to deliver microfinance services for WSS:

- ***Large WSS programs as drivers***: Many of the large scale efforts have been linked to major programs for improved water and sanitation with associated technical assistance (and in some cases with partial subsidies). For example, VBSP's recent growth is linked to the Government of Vietnam's Program for "safe water supply and rural environmental sanitation"; BRAC's work in Bangladesh is linked to a WASH program supported by the Government of the Netherlands; and use of loans by households from self-help groups and other MFIs under the Total Sanitation Campaign is promoted by the Government of India and various state governments in India. Possible MFI links are also being explored in Peru for a large sanitation program.

- ***Creating potential market opportunities/business lines for MFIs***: In at least three cases, MFIs, taking up WSS products with support from external "credible promoters," have attempted to develop new WSS products that match local demand, and that present a potential opportunity for business in the future. These include the Water and Sanitation Program's (WSP) work with K-Rep Bank in Kenya (with a possible business line for project finance for small infrastructure projects); Water Partners International's work with two MFIs in India (Basix and Guardian) to develop retail products for water and sanitation that can be scaled up by the MFIs themselves; and USAID's support to local Indonesian utilities and BRI to provide loans for household water connections.

  In a few cases, though less commonly, MFIs have also responded to demand from their clients: for example, SEWA Bank in India funded WSS investments through normal loans (generally recorded as "housing" loans). In Latin America at least two MFIs (Mibanca in Peru and Genesis Empresarial in Guatemala) have introduced urban upgrading type of products (including water and sanitation) in response to client demand.

Table 3.5: Loan Sizes and Annual Scale across Selected Case Experiences

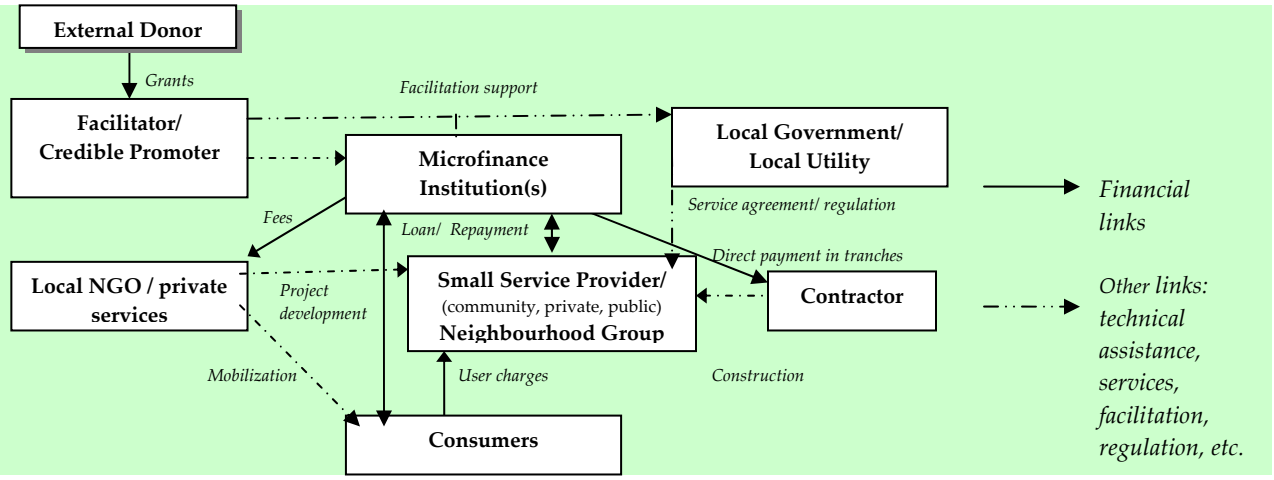
All monetary values are in USD

Country, MFI/ banks	Type of Loans	Average Loan Size*	Total No. Borrowers (/annum)	Total loans	Loans/annum*
Retail Loans					
Bangladesh					
Grameen Bank	Water and sanitation	47	921,000 (61,000)	35,000,000	2,900,000
BRAC	Water and sanitation	21	325,000 (12,900)	5,800,000	275,000
India					
SHGs and Dist Coop	Sanitation (linked to GOI's program)	30	640,000 (128,000)	18,000,000	3,800,000
SHGs/commercial banks	Sanitation (with Gramalaya support)	47	9,000	425,000	425,000
Basix	Water and sanitation (with WPI support)	130	1,000 (500)	130,000 (till 2007)	65,000
SEWA Bank	Water and sanitation linked housing repairs	562	7,300 (1,500)	4,100,000	820,000
Indonesia					
BRI	For connections to local utilities, with USAID support	105	2,200 (1,100)	230,000	115,000
Vietnam					
Vietnam Bank for Social Policy	Water and sanitation	244	450,000 (150,000)	110,000,000	36,000,000
Vietnam Women's Union	Sanitation (revolving fund under World Bank project)	150	14,000 (4,700)	2,100,000	800,000
SME Type Loans			**Total projects/ HHs**	**Total Loans**	
Kenya					
K-Rep Bank	For small water projects in rural and peri-urban areas, with WSP support and GPOBA subsidy	39,000 per project (30,000 to 120,000)	41 projects About 20,000 households	1,600,000	
Senegal					
CMS	For water projects to meet 25% contribution, with AFD support	6,250 per project	32 projects	200,000	
Cote d'Ivoire					
COOPEC	For water connections to utility with CREPA support	2,000 per local committee	1,300 households and 25 committees	53,000	
Togo					
Various MFIs	For small household entrepreneurs	1,500 per entrepreneur	1,200 entrepreneurs	1,800,000	

*Source: See Tables 3.2, 3.3, and 3.4, and Annex 3 for details of each case. Note: * Because the reference years differ, average loan sizes and lending per annum have been worked out at 2007 prices by assuming a 3% growth per year.*

Critical Institutional Roles in Scaling up: The review of experience across the three product segments brings out the importance of other institutions besides the lender (MFI) and borrower (household or water service provider). These roles are highlighted in the figure below. The retail model is clearly the simplest and may not require any role for a small service provider. The main roles are also outlined in Table 3.6.

Institutional Roles in Models for Use of Microfinance for Water and Sanitation



Note: Refer to Annex 3 for adaptation of these roles in local contexts for various case studies

Table 3.6: Institutional Roles across Product Segments

Stakeholder	Retail Household Loans
Microfinance institution	Product development and lending Mobilization of resources from savings, commercial borrowing
External donor	Grants for technical assistance, partial subsidies to ensure affordability
	Line of credit for WSS on-lending
Facilitator /Promoter	Facilitation with external donor and government Grant-based technical assistance support for product development, market research Resources from external donors
	Line of credit for WSS onlending
Local NGO	Support to MFI in community mobilization Support to communities for project development
National government	Policy for WSS and financial sector
Local government/utility	Provide legitimacy to small service providers/ neighbourhood groups through service agreements Provide household connections to utility networks
Small water service provider	Generally for piped water supply services--either community-based or small private sector; legal basis critical as a borrower of loans from MFIs
Neighborhood group	For urban services upgrading--legal basis critical
Consumers	Main borrower--borrows and repays loans; user of water supply / sanitation services; pays for service consumption;
Joint liability group	Main borrower--borrows and repays loans
Contractor	Provides fee-based construction services to build water/ sanitation facilities

Articulation of these roles depends on the local context, as highlighted by several cases in Annex 3. For example, in the case of a large MFI such as BRAC, the roles of facilitator/promoter as well as local NGOs are internalized. Or, as in the case of VBSP, there has so far been no role for external donor support or a facilitator/promoter. To ensure sustainable scaling up, design of external grants should be aligned with possible government funding later. Similarly, the funding of NGOs and the private sector to support small service providers or household consumers should be done in a manner that ensures market based services at a later stage (through a business development services-type of approach).

Lessons from experience across product segments: Based on the cases reviewed in the previous section a number of challenges and measures have been identified across the three product segments for increasing the potential for scaling up, while increasing sustainability for both the water and sanitation as well as microfinance sectors.

Key lessons for the retail household type loans from MFIs include:

- ***Special WSS Products with MFI Leadership***: The successful examples of MFIs from Bangladesh and Vietnam, and the emerging presence of large MFIs with a significant outreach in several countries all suggest that special WSS products can go a long way in sustainable scaling up of WSS retail loans. A number of different approaches may be possible. For some MFIs, this approach may start with technical assistance support for market research, and a WSS industry assessment in their jurisdiction. Some may want to pilot test, as evident from the Basix experience in India. For some other MFIs, assistance may be provided--first to track the end use of their loans (to gauge the extent of water and sanitation activities), and then to assess demand among their existing and potential clients. The use of special WSS products in enhancing their extent of outreach, as well as their social performance, also needs to be assessed.

  In developing special WSS products, it would be useful to review the possibility of combining these products with housing improvement-type products, which many MFIs have successfully introduced over the past years. Even when a separate product appears necessary, the MFI's previous experience in product development needs to be tapped.

- ***Use of MF for utility connections in urban settings:*** The use of micro-credit for water connections in Indonesia shows positive impacts both on the utility (PDAM) and the MFI. This model has considerable potential in many cities and towns if there is necessary facilitation and technical assistance. It is possible, however, that there are affordability concerns that need to be addressed through appropriate subsidies. Design of such subsidies needs to be carefully worked out to maximize effectiveness in reaching the target groups. In some cases there may also be constraints of city level supply. To address these concerns adequately, good industry assessment and citywide market assessment may be needed at the outset, especially to ensure sustainable scaling up. While initially a facilitator agency may be needed to catalyze the process, over time it can be internalized by the utility and MFIs. Variants of this approach may also use local water committees as illustrated by the CREPA experience in Ivory Coast reviewed in the next section.

- ***Sanitation requires special attention:*** Available experience with sanitation-related loans suggests that these loans have generally been linked to a wider program of demand promotion, in which considerable attention is paid to mobilization activities. When MFIs follow a community-based model with group lending (as in Bangladesh or the SHGs in India), this may serve the same purpose. A greater role for MFIs in such programs, however, can go a long way in sustainable

scaling up by the MFIs themselves. MFIs also tend to benefit from increased outreach. Although simple loans for toilet construction may work well in rural areas and even small towns, in larger urban areas these loans may become linked to issues of wider urban services upgrading discussed below.

Key lessons for SME type loans include:

- ***Importance of project development and a "credible promoter"***: In many developing countries, a key constraint appears to be the lack of bankable projects, because project development tends to be weak or non-existent. While this is generally true for all types of infrastructure, for small projects there are core supply- and demand-side capacity constraints. Project development tends to be difficult, for there is inadequate understanding of risks by project developers and potential lenders. In addition, projects of this type tend to be complex due to range of issues (such as community mobilization, financial viability, and links with government agencies). To address these needs, efforts and resources are needed for project development. Such funding needs to take into account overall growth prospects and scaling up prospects in a given country or region. Most likely, initial stages of project preparation will need to be grant-funded--though the design of funding mechanisms should be done in a manner that promotes local capacities, and helps create a market for such services. This requires a business development services-type approach in order for small water enterprises to take a lead in developing microfinance activities.

  Given the complexities, and the lack of previous experience and history in such efforts, most potential lenders would tend to look for a credible promoter that is recognized for its local presence and that is able to draw in experience through a wide network. For example WSP in Kenya, CREPA in Ivory Coast, or GRET in Cambodia have essentially played the role of a credible promoter.

- ***Building MFI capacity for project finance***: Most MFIs do not have the experience or capacity to undertake project finance, which requires very different appraisal skills. It is likely that such product diversification can be taken up only by rather mature MFIs. It will also require building internal capacity in terms of dedicated staff to focus on this product line. In initial years, this may need to be funded through external grants and technical assistance. However, over time, the MFI will need to build adequate internal capacity to develop and manage such a portfolio. Previous experience in SME project finance by other financial institutions should be reviewed and drawn upon.

- ***Need for partial subsidies or guarantees to ensure affordability***: Most MFIs are able to provide loans at tenor of up to two years, with interest rates that are generally higher than in the wider financial sector--at least partly because of the higher transaction and operating costs for originating and servicing small loans. For individual retail loans, these financing terms are manageable and still keep them affordable for households (as the loan sizes are generally smaller). However, for project finance structures where loan sizes are larger and the life of assets longer, longer tenors are generally needed to keep water prices at affordable levels. In some cases where the MFIs have started to explore SME products, the loan tenor has been extended to five years--though that still results in affordability issues. These issues can be addressed through a variety of measures: use of partial subsidies to bring down the debt requirements (as in the Kenya small piped systems project); use of guarantees to bring down the cost of funds for the MFIs, or to mobilize longer-term funds from domestic markets (for example, through use of

guarantees for MFIs to mobilize funds from banks)[54]; or use of guarantees to develop take-out finance structures that allow MFIs to extend tenor despite an asset-liability mismatch (due to the short-term nature of their funds). If needed, MFIs would be able to transfer the outstanding loans to another institution on a predetermined basis. However, design of such measures should be done to ensure scaling up over a reasonable time period.

- ***Conducive sector policy to provide financing space, design subsidies, and legitimacy of service providers***: Many developing countries have a high level of subsidies in WSS. This may lead to crowding out of any potential exploration of microfinance. To an extent this creates a vicious circle--as lack of financing space inhibits the use of microfinance even when it is feasible, and the lack of actual experience in the use of microfinance is then used as an argument in support of such subsidy policies. Unfortunately, the subsidy policies often fail to address issues of a higher level of services, or rehabilitation investments in the same communities. They also are not based on an assessment of fiscal sustainability for scaling up. This can be a concern, especially when the subsidy policies are not based on affordability assessment. Once subsidies are introduced, it can be difficult to remove them, even if they adversely affect the potential for scaling up.

  A key aspect in SME loans is the regulatory framework within which the small service providers operate. (These providers can be community-managed organizations, private providers, or public utilities.) This essentially determines their legitimacy, and ideally, the framework is backed by an appropriate contract--such as the services provision agreement (SPA) that is used by the Water Services Board in Kenya for community-managed service providers, or a special contract that was used between the provincial unit and a small private provider under the MIREP project in Cambodia.

- ***Promote Business Development Services (BDS) for scaling up and sustainability***: A key risk facing potential lenders is the issue of sustainability. It is common for systems to fail due to technical, institutional, or financial reasons. To address this, there is a new focus on post-operation support to the small water providers, using market-based principles.[55] Adaptation of this approach to the water sector requires a new way of looking at support for small water providers (support that has in the past relied heavily on grants and has generally focused on construction of new infrastructure). Mehta et al (2007) identify types of necessary support during service operations, including professional support for financial services (such as accounting), technical services (such as maintenance), strategic planning, community mobilization and support, regulation, and monitoring. Little experience exists in using market services for such support, and hence innovative and careful strategic designs will be necessary.

Key lessons for microfinance for urban services upgrading:

- ***Use of microfinance with public funds critical*****:** Issues around low income ("slum") settlements tend to receive considerable political attention, and promises of subsidies are common, even if they are not sustainable for large scaling up. Any approach to microfinance will thus need to forge effective mechanisms for combining the use of public funding and subsidies. Microfinance can be used to prefinance investments, or as bridge finance to smooth delays in disbursements of public funds. This would require improved design of subsidies to encourage, and not crowd out,

[54] See, for example, a review of guarantees for microfinance in Microenterprise Development Review 1998.
[55] See for example Mehta, Virjee, Evans, and Wathobio, 2007.

the use of microfinance. In addition, given the common practice of annual investments in local budgets for WSS, this segment faces problems because implementation periods often tend to be longer than one fiscal year. This may require a special fund structure that allows project-linked allocations for service upgrading projects, and that can receive annual budget allocations from local authorities.

- ***Land tenure remains a critical issue*:** In most developing countries urban services upgrading is constrained by issues of secure land tenure. WSS investments are made in slum areas, but generally when tenure is secure. As a result, WSS investment in slums by public agencies is generally restricted to community toilets and common water taps. Achieving higher level of WSS, (such as household-level water connection and toilets) is possible, and can provide de facto tenure for slum dwellers. However, for this, an overall policy for tenure rights to slum dwellers becomes necessary.

- ***Evolving feasible programs for citywide scaling up*:** The main aspect that sets this segment apart is the need for appropriate and productive links with local governments. Links with local governments are critical to ensure effective links between slum settlements and local services utility networks, as well as to capture local budget allocations. An important focus in this approach must be on strategies to achieve citywide scaling up within a reasonable timeframe. Since in most cases public funding is not likely to be sufficient, it is essential to develop mechanisms to harness funding from a variety of sources, including microfinance. Public resources should focus on partial subsidies to address affordability concerns, and should be used to carry out necessary extensions of utility networks to low income settlements, and as resources for community mobilization and capacity building support. This will leave adequate space for use of microfinance.

Key issues in scaling up microfinance for WSS: The experience across the three segments outlined above suggests the possibilities as well as constraints in using microfinance for WSS across the three product segments. Thus, scaling up would require considerable facilitation and targeted support.

While each market segment has specific issues to be addressed, a few common issues also emerge as important:

- inadequate understanding of sector policies/institutions and potential market demand for loans for the potential financiers and other stakeholders
- lack of special products for water and sanitation that have been promoted and tested by MFIs, especially for SME-type products structured around project finance approaches
- at the level of actual practitioners, there is a lack of awareness of WSS sector issues and institutions in the given country/ region or city among MFIs. There is a similar lack of awareness among WSS sector practitioners of the potential of microfinance, which creates a high level of risk perception
- in most cases despite the potential, there is a lack of bankable project opportunities for commercial funding and lack of business development services for small water service providers
- even when opportunities do emerge, the MFIs lack of access to medium/long-term funds for MFIs, and find it difficult to access or blend with subsidies to meet affordability concerns.

Core activities to address these common issues are discussed further in Chapter 5.

4. Potential Impacts of Using Microfinance for Water Supply and Sanitation

Impacts of using microfinance for water and sanitation are assessed from two perspectives. One perspective relates to the social and personal impacts of improved water and sanitation that are made possible by the use of microfinance; and the other is the impact of WSS projects on microfinance institutions. The assessment is based on available studies as well as discussions with stakeholders involved in the use of microfinance for WSS.

The next section traces the impacts of improved water and sanitation on health, and on economic and social well being. This section is based on a number of recent reviews.[56] The following section reviews the role of microfinance in further enhancing these impacts. The last section outlines the potential benefits and risks for the microfinance sector in the water and sanitation sector. The main emphasis is on understanding and detailing the mutually reinforcing role played by the water and sanitation sector and the microfinance sector inn accruing benefits to each other.

4.1 Impacts of Improved Water and Sanitation

Nature of benefits from improved water supply and sanitation: Over the past few years, a number of studies have identified and assessed the benefits of water and sanitation related interventions. Table 4.1 highlights important benefits from water and sanitation. These include direct as well as indirect benefits such as productivity gains or costs averted due to improved health and increase in school attendance. It is worth pointing out that most of the direct and indirect benefits of improved water and sanitation interventions are private in nature. While health and time savings benefits have generally received the most attention, other impacts from productive use of water and from a rise in property values are also important. Though difficult to quantify, key impacts of improved water and sanitation are linked to benefits in dignity, privacy, and social status, especially for women and girls. The different sets of benefits include:

- ***Health benefits***: The underlying premise of water and sanitation interventions is usually linked to their health impacts. The most accepted is reduction in diarrhea, as is shown by a large number of studies.[57] There are also benefits from reduced worm infestations and skin diseases. In addition, recent literature also emphasizes that "contrary to popular myth, malnutrition is not only the result of lack of food intake, but more often a consequence of bad sanitation and repeated infections."[58] Besides these direct health benefits, indirect benefits include the reduction of both public and private expenditures on medical treatment, days gained by patients and their care takers, the economic contribution of those whose lives are saved due to reduced mortality. In dealing with diarrheal diseases, Keusch et al (2006) identify "simple and effective ways to produce clean water and control human waste" as one of the key interventions that need to be scaled up, in order to reduce the mortality rate among children under five by two-thirds by 2015.

- ***Savings of time and other coping efforts***: Though health benefits are predominant in public policy making, in economic analysis, it is often time savings that come out as the most important benefit.[59] Time savings in rural areas generally comes from having a source of water or a toilet

[56] See for example: Brocklehurst, 2004; Cairncross and Valdmanis, 2006; and Rijsberman, 2005.
[57] See for example: Cairncross and Valdmanis, 2006; and Keusch et.al, 2006.
[58] Based on World Bank 2006 as reported in Acharya and Paunio, 2008, p. ii.
[59] See for example Hutton and Haller, 2004.

nearer to home. In urban areas this could be due to less time taken in collection of water and having a more closely located toilet. The time that is saved is generally used in economic activities that fetch extra income, or in better child care. In addition, households also save considerable time and expenditure on coping efforts, like boiling water or the purchase of expensive water from vendors.

Table 4.1: Illustrative Impacts of Improved Water and Sanitation Interventions

Benefits from Improved Water and Sanitation	Incidence of Benefit	
	Public	Private
Health Impacts (Direct and Indirect)		
Reduction in diarrhea and other diseases		√
Reduction in malnutrition and improved child development		√
Reduction in private health expenditure		√
Reduction in public health expenditure	√	
Reduction in days lost due to illness by patient and by caretaker		√
Savings in time and other coping efforts		
Reduction in time/energy spent collecting water, or in queues		√
Increase in income or leisure due to time savings		√
Reduction in expenditure on private water treatment		√
Reduction in expenditure on purchase of expensive water		√
Productive use of water		
Income from uses for cattle, poultry, and kitchen garden		√
Income from small industries		√
Gain in property values		
Increase in houses/shops, etc.		√
Increase in local revenues linked to property values	√	
Dignity, privacy, security, and social status		
Increased school attendance and retention in school for girls		√
Reduction in public expenditure on education	√	
Tenure security for informal low income settlements		√
Legal /regulatory framework for small water providers	√	√

Source: developed by author, drawing on Hutton, 2001; and Hutton, Haller and Bertram, 2007.

- ***Productive use of water***: Although water supply is generally associated with drinking water, the use of water for economic activities is also recognized in rural and peri-urban water supply projects.[60] Productive activities may include cattle rearing, poultry raising, and kitchen gardens. These benefits are important, for they result in increased incomes and make water sector interventions more affordable for consumers.

- ***Gain in property values***: The value of property is influenced by the level of services and access to good water and sanitation services. While such gains are large in urban areas, rural households also benefit. While these benefits largely accrue to private property owners, local authorities can also gain from increased revenues from property taxes that are linked to property values.

[60] See for example Winrock International et al, 2008 for a review of multiple uses of water that includes productive uses.

- ***Dignity, privacy, security, and social status***: These are intangible benefits, but of equal or more importance than the ones listed above, especially for the poor. Improved sanitation exemplifies the importance of these aspects for women. Besides these intangibles, improved sanitation in schools has led to higher school attendance for girls. Improved sanitation in the work place has led to greater retention and workforce participation by women. The use of loans for small service providers can have a favorable impact on the development of a regulatory framework for small water service providers, including community-run, private, and small public utilities. Likewise, the lack of a clear regulatory framework often hinders lending in this space, suggesting mutually beneficial impact.

Economic cost-benefit ratio for water and sanitation interventions: Various efforts have been made to determine the economic cost-benefit ratio for water supply and sanitation interventions. These generally take into account only some of the benefits listed in Table 4.1. Most studies show high benefit-to-cost ratios. This is true for project-level studies or for global studies--for example, those of the World Health Organization (WHO).[61] Several World Bank projects in Africa and India show high economic returns for water and sanitation projects.[62] At the global level, Hutton et al (2007) estimate that every unit of currency invested in water and sanitation can generate benefits ranging from 2.8 to 6.6 units in South Asia and in Sub-Saharan Africa. In general, economic returns from sanitation are high in all regions. However, these results do not include the benefits from higher service levels for water. In an earlier study that included more benefits and countries, Hutton and Haller (2004) showed that the cost-benefit ratios of different water supply and sanitation interventions ranged from 3.2 to 12.5.[63]

Table 4.2: Benefit-Cost Ratio for Achieving Six Water and Sanitation Coverage Scenarios

Region	Achieving MDG targets for:			Universal Access to:		
	Water	Sanitation	WS&S	Water	Sanitation	WS&S
Sub-Saharan Africa	2.8	6.6	5.7	3.9	6.5	5.7
East Asia & Pacific	6.9	12.5	10.1	6.6	13.8	12.1
South Asia	3.9	6.9	6.6	3.9	6.8	6.6
Latin America & Caribbean	8.1	37.8	35.9	17.2	39.2	27.4

Notes: For achieving MDG targets, the regions include only those countries that are not likely to reach MDGs; and for universal access only those countries that are not likely to reach universal coverage by 2015. Source: Hutton, Haller and Bertram, 2007, p. viii.

A large share of these measured benefits accrues from time savings. For example, in Sub-Saharan Africa, 63 percent of the benefits for water are attributed to time savings and for sanitation they are as high as 90 percent of total benefits. These figures are highly sensitive to appropriate valuation of time. The direct economic benefits of reduction in expenditure costs (for example, due to diarrhea cases avoided, or the indirect economic benefits of reduced morbidity and decreased mortality) have a much lower share of benefits. The previous estimates by Hutton and Haller (2004) also showed that the share of time savings was 70 percent in sub-Saharan Africa and over 75 percent in global estimates. As pointed out by the authors, in conducting a global study an "important element of uncertainty is the generalization of epidemiological, cost and benefit data from one country or one region to another."

[61] See for example: Hutton and Haller, 2004; Hutton et al, 2007.
[62] See for example Brocklehurst, 2004.
[63] Hutton and Haller 2004, Table 25 p. 35.

In addition, sensitivity analysis by Hutton and Haller (2004) shows large variations due to changes in five key parameters (time savings, time value, diarrhea incidence, health care unit costs, and intervention costs) if economic returns remain positive. However, when pessimistic scenarios are combined with the data, these push the returns below one unit for each unit invested. On the other hand, such analysis is quite conservative, for it does not include other benefits from the productive use of water, gains in property values, or the more intangible benefits of dignity, privacy, security, and social status. These are difficult to capture, especially as they are likely to be context specific. Thus, the actual economic returns from water and sanitation interventions are likely to be higher.

Variations in benefit streams across WSS microfinance product segments: Table 4.3 identifies the type of benefits likely to accrue from interventions across the three product segments identified in Chapter 3. While health benefits are likely to accrue from all options, there will be limited benefits of sanitation-related impacts from SME options. Similarly, retail loans are likely to be either for water or for sanitation and thus impacts also limited to the specific use of loan. Savings in time are likely to accrue across all product segments, though these will indeed be very case specific. Gains in property values will be higher for individual loans through their direct impact on the household property, particularly in urban areas. Finally, the more intangible benefits will accrue from a secure water supply, and from the privacy and dignity of new sanitation facilities. A rather different impact results from the urban upgrading and shared facilities segment, where such investments can increase security of tenure (in slums and other low income settlements), thus lowering the threat of evictions.

Table 4.3: Benefits across WSS–Microfinance Product Segments

Type of Benefits	Product Segments		
	Individual retail loans for households	SME-type loans for water supply	Urban upgrading and shared facilities
Health Impacts (direct and indirect)	Medium (water and sanitation benefits)	Medium (only water benefits)	High (water, sanitation, and other services benefits)
Savings in time and other coping efforts	High		High (for individual services or improved shared services)
Productive use of water	Medium (only if linked to piped water services)	High (for kitchen garden, cattle, poultry etc.)	Less likely
Gain in property values	High	Medium (only through neighborhood effects)	
Dignity, privacy, security, social status	High (water security, privacy, and dignity from individual sanitation, etc.)	Medium (water security)	High (water security, security of tenure, privacy, and dignity from individual sanitation)

In broad policy terms, it could be argued that individual retail loans help meet the targets under the Millennium Development Goals and universal access targets set by many countries. On the other hand, SME-type loans focus more on improving management of small water investments, with a focus on increased sustainability. It is likely that to achieve these benefits, support to the development of market-based business development services (BDS) will be crucial.[64]

[64] See, for example, some discussion on BDS in section 3.3 above; and in Mehta et. al. 2007.

4.2 Difference in WSS Impacts Due to Using Microfinance

The previous section traced the impacts of improved water and sanitation. The main emphasis in this section is on identifying the difference made, or added value of these impacts, due to the use of microfinance. A key difference made by using microfinance is the possibility of ensuring the sustainability of WSS and linking cost recovery for services to the various private benefits. In addition, the use of microfinance can also help increase aggregate health benefits and improve efficiency in the use of public resources.

Increasing cost recovery and freeing up public resources: Hutton et al (2007) emphasize that while the economic benefits from water and sanitation interventions may be high, cost-benefit analysis does not provide answers about who will actually pay for these interventions. There are two problems in realizing private gains. First, "one of the problems of cost recovery is that often not all the benefits are realized instantaneously, whereas significant costs may need to be recovered in the short term. This budget constraint means that while many agents may show willingness to pay for water and sanitation interventions in hypothetical surveys, few may be willing to pay for the benefits before they occur".[65] Secondly, there may be affordability constraints in meeting the intervention costs in advance, which can be reduced by spreading payments over a longer time period. This is especially true when benefits accrue to low income groups who may not have adequate savings to meet the full costs early in the project stage. These constraints can be addressed to some extent through a microfinance loan that is repaid over a period of time. Such efforts must be preceded by awareness and promotion efforts to sensitize the people about these benefits.

Microfinance can bring new and additional sources of funding, thus supplementing the public funds commonly used for capital investments in the sector. With use of microfinance, it is possible to have households and communities pay for the private benefits. This results in an added benefit of freeing up public resources, which can then be focused on public benefits or on assistance for the poorest. This benefit will, however, be nullified if the resources for microfinance are themselves mobilized using public funds.[66]

Improved aggregate health benefits: As discussed earlier in Chapter 2, water and sanitation interventions are not just for basic levels of service, but also include higher levels of service. Thus, "water supply is not a single, well-defined intervention, such as immunization, but can be provided at various levels of service with varying benefits and differing costs."[67] The effect of a higher level of service on accrual of health benefits is highlighted by a forthcoming paper by WSP. Based on an extensive review of available studies, it suggests that there is "strong evidence of substantial reductions in diarrhea occurring from private piped schemes or distribution points near the house. No evidence was found on the effect of public water points over 5 minutes travel time providing less than 50 liters per capita per day. No study could demonstrate an effect on diarrhea of a lower service level such as public springs and wells. Water interventions regardless of technology type were suggested to have effects on schistomiasis, ascariasis, guinea worm and trachoma–although the magnitude of impact was dependent on the quantity of water provided."[68] Besides these additional health benefits, higher levels of service, such as individual

[65] Hutton, 2001, p. 345-46.
[66] For example, in Vietnam, VBSP depends on public resources to fund its large water and sanitation portfolio.
[67] Cairncross and Valdamains, 2006, p.771.
[68] Virjee et al, 2008.

facilities, have benefits related to additional time savings, gains in property values, and improved privacy and social status.

Microfinance in many instances could help increase the level of service for individual households and for communities within a shorter time span than would have happened if these groups had to rely solely on public resources or their own savings. To the extent that higher levels of service are able to increase the flow of benefits, this can be attributed to the use of microfinance. Thus, microfinance provides opportunities to households and communities for improving their level of services—hence, aggregate societal health benefits are likely to be much larger.

Increases in health benefits can also occur simply by association with microfinance institutions, as illustrated by a study in Kerala, India. Mohinder et al (2008) suggests that association with self-help groups (SHGs) have helped improve the health situation of poor women. This benefit is possibly linked to the type of MFIs used, especially those that focus on more participatory approaches with increased empowerment of women.

Improving efficiency of public resources: Public resources continue to be important sources of funds, either in meeting the full costs of water and sanitation interventions, or in providing partial subsidies to allay affordability concerns. There are a number of ways in which appropriate use of microfinance can help to improve efficiency and effectiveness in the use of public resources.

- ***Using microfinance as bridge finance***: Use of public resources is often constrained by delays, despite budget provisions. To overcome these constraints, community groups or NGOs can access microfinance as bridge finance. For example, SPARC, NSDF, and Nirman in India have used funds from the CLIFF facility as bridge finance for construction of a large number of community toilets in four cities. Access to such bridge finance has "enabled projects designed and managed by communities to go ahead, even where, for example, subsidies that are meant to be forthcoming from [the] government have not yet been paid. Without this bridging finance most projects would not be able to go ahead at all, as the nature of subsidies is often that they are payable only in arrears, which has been an effective way of excluding those who cannot afford to pre-finance developments, namely the poor… Completing a project puts much greater pressure on government to release a subsidy than negotiating in a vacuum ever can. Once funds have been drawn down and a subsidy payment system activated in practice, then many more communities can benefit". [69] In addition, bridge finance has eased the flow of funds, reduced time overruns, and therefore reduced costs.

- ***Using microfinance to prefinance construction and to support "smart subsidies":*** Some public schemes also require up-front expenditure by households, communities, or small contractors, which are reimbursed through public resources. Such policies deter the poor households or small contractors who do not have adequate funds to meet the initial expenditure. Use of microfinance can help to overcome these hurdles by providing loans to prefinance such activities. For example, in Ahmedabad, India, the local authority has a scheme for toilets where a 90 percent subsidy is provided to below poverty-line households, but the subsidy is later paid back as a reimbursement. Many members of the SEWA Bank have used loans to prefinance such toilet construction. Small contractors also avail themselves of such loans to prefinance toilet construction. In Uganda, an MFI provides loans to prefinance construction for pit latrines for

[69] From CLIFF Annual Review, 2007, p.18.

schools and health centers.[70] Such prefinance can also be effectively linked to output-based aid products, as is being done by the K-Rep Bank in Kenya (for financing small water investments, where a partial subsidy is made available upon the successful delivery of outputs).[71]

- ***Using microfinance to enable participation of small contractors:*** Access to microfinance can be crucial in making it possible for small contractors to participate in the WSS sector. They can get contracts either by access to funds to prefinance, as in Uganda case cited above, or by access to bridge finance as in the SPARC case in India, discussed above. Access to a line of credit provides guarantees for small firms or NGOs to participate as "contractors." For example, a line of credit, offered by the UTI Bank to SPARC/Nirman, has enabled the latter to take on contracts for constructing community toilets and rebuilding housing for slum dwellers under a slum redevelopment scheme in Mumbai, India.

Improving sustainability of water services: A key constraint in the water sector is the lack of sustainability. The use of microfinance can improve the sustainability of water service providers in different ways–the foremost being the market rigor it introduces. It also focuses on clarity of roles and relationships, and better financial management. This helps utilities to expand their customer base, especially at the lower end of the market spectrum, and to assess and mitigate risks better. Increased sustainability occurs when credit history is established, making it possible for the water service providers to obtain additional loans.

- ***Market rigor, better risk management, and transparency in small water service providers***: The use of microfinance is envisaged on commercial principles. This helps to bring in market rigor in terms of project assessment and appraisal, assessment of risks and their mitigation, and most importantly, monitoring by the lenders. This is evident from experience of the K-Rep Bank project in Kenya and the MIREP project in Cambodia. In another case in Ethiopia, links between small community service providers and Amhara Credit and Savings Institution (ACSI), a local MFI, have been facilitated through a FINNIDA-funded project. Two aspects are relevant here: one is the role of a credible third party that has played a facilitating and catalytic role (WSP in Kenya and GRET in Cambodia); and second is the need for an industry assessment of the sector to determine the potential for such transactions, the likely demand, and the design of a workable business model. These transactions also help bring greater transparency to the sector, especially in terms of institutional relationships, contracts, costs, and the operational performance of the service providers. This has helped to introduce transparency and improve financial management among small providers. It is expected that over time, as the MFI builds up more knowledge of the providers, this will lead to credit transactions.[72]

- ***Expanding customer base***: For utilities in developing countries, one of the key aspects of sustainability is often the need to expand the customer base. This makes it possible to increase revenues and lower fixed costs. This expansion is often constrained by the inability of many potential customers to pay for a new connection, as illustrated by PDAM Tanah Datar in Indonesia. In this case, the customer base was successfully expanded with access to microcredit that was provided through the USAID-ESP supported link with BRI, in support of several urban utilities. Impact assessment for the PDAM Tanah Datar program show that the expanded

[70] Based on communication with Cassim Namugali, CMF, Uganda.

[71] Refer to Annex 3 for details of this case.

[72] Based on Suominen, 2007; Suominen and Fonseca, 2006; and communication with Arto Suominen.

customer base and the additional water sales have helped the utility to reduce its average costs by 42 percent over a three-year period, and to reduce its nonrevenue water (NRW) ratio from 56.5 percent at the end 2002 to 36 percent at the end of 2004. The impact assessment noted that "financial cooperation between BRI and PDAM Tanah Datar could, in the future, be extended to finance PDAM's needs for additional banking services; i.e., working capital credit and financing of medium-term incremental capital investments".[73] In the case of SODECI, the utility in Ivory Coast, low income communities find it difficult to meet the costs of connections that are already subsidized through a surcharge on water tariffs. In this case, a community-based approach has been used to access microcredit from domestic MFIs with facilitating support from CREPA.[74]

- ***Promoting productive use of water***: Access to microfinance by small utilities and by households necessitates a demonstration of financial viability and a strong revenue model. In rural and peri-urban contexts, this can be better achieved through promotion of the productive use of water. Although use of microfinance does not automatically promote this, the need to demonstrate and to achieve viability to repay loans can often lead to greater use of water for productive purposes. Also, the use of microfinance often makes it possible to have piped water schemes which can significantly increase the amount of water available, and thus make it possible to use water for productive purposes.

4.3 Benefits for the Microfinance Sector from Engagement in the WSS Sector

Additional benefits may also accrue in terms of development of the microfinance sector.[75] While the focus in this section is more on the microfinance institutions, some of these benefits are also applicable to the wider financial sector, as discussed below. Benefits for the MFIs include increased outreach, larger portfolio size, capacity development for project finance, and enhancing projects' social performance. However, to realize these benefits, MFIs will need some facilitation support and must ensure that the new risks are well managed.

Increased outreach for MFIs: A key concern in the microfinance sector is the need to increase outreach to its original clientele: that is, the poor and low income groups, and especially women. This is also a key performance indicator for assessing MFI performance. As evident from the experience of some large MFIs such as Grameen Bank and BRAC in Bangladesh, and VBSP in Vietnam, special water and sanitation products have helped reach a large number of these clients. Similar views were also expressed by SEWA Bank, based on its experience with a slum upgrading project in Ahmedabad, where one of the main benefits to the MFI was the enrollment of new members, even though it did not lead to any loans. Thus, given that water and sanitation products have universal application to all households, these products could become useful mechanism for MFIs to increase their outreach to new customers. This can occur in both rural and urban areas. Such outreach impacts can be made through all three product segments, although the type of client base will be different for each. For a wider financial sector institution, its engagement in this sector can help widen its outreach and help it to develop its down-market operations, as well as explore a new market for small project finance.

[73] Based on Development Alternatives, 2006.
[74] See Kouassi-Komlan, 2007b.
[75] This is similar to the argument often advanced that housing finance systems contribute to financial sector development, or that municipal bond development contributes to capital market development.

Capacity development for project finance for small projects: Traditionally, the microfinance sector has focused on individual retail loans and has built up capacity and systems for such lending. However, many MFIs have discovered a demand from their members for loans that require project finance structures. Similarly, the traditional commercial banks have not generally given loans for small service providers using project finance mechanisms, even though they may have experience in SME lending. By participating in SME loans for small water service providers, MFIs can build up new capacity for project finance structures with small community-managed water enterprises (as in the K-Rep Bank case in Kenya, with support from WSP), or with small private service providers (as in the GRET-facilitated case in Cambodia). Once such capacity is developed and internalized, it may be further used for other infrastructure sectors (such as micro irrigation or electricity projects).

Increased portfolio of large loans without losing the social focus: A key aspect of transaction costs for MFIs is linked to the small size of the loans. While this is essential in keeping with the MFI mission of reaching low income groups over time, small loans can lead to larger loans that are more effective in terms of transaction costs. In effect, the larger loans are more profitable, and are desirable as long as they also keep within the overall mission. The larger loans cross-subsidize the cost of making smaller loans.[76] One benefit for MFIs in SME-type loans is the increase in average loan size that occurs without losing the mission and social focus. While the transaction costs are likely to be high until the institutional capacity is built over time, these loans can become profitable for the MFIs (the average size of these loans will be 100 to 200 times the average loan to individual borrowers). The focus in capacity support for MFIs will have to be on developing rapid appraisal systems, backed by appropriate credit scoring models.

Contribution to the social performance of the MFIs: In recent years, with the growing emphasis on the financial bottom line, concern has been raised over the social performance of MFIs. This has led to a move towards the development of a social performance bottom line in microfinance.[77] A Social Performance Task Force was set up in 2005 by CGAP, the Ford Foundation, and the Argidius Foundation. The task force decided on "a set of common indicators… to report on their social performance." These include indicators on intent, process, and results. The results focus on "whether institutions are reaching poorer and more marginalized populations, and whether clients are experiencing positive social and economic changes."[78] Reporting on results indicators requires collecting client or household-level data on living standards. Different approaches and methodologies are being developed for measuring these.[79] A tool developed by the Grameen Foundation called Progress out of Poverty Index (PPI) has a simple set of easily observable indicators to estimate the share of clients who are below an established poverty line. These proxy indicators are linked to national poverty lines as well as the international benchmarks of USD 1 and USD 2 per person per day. The tool is simple, inexpensive, transparent, and intuitive even though these are based on statistical analysis of national household expenditure surveys. For example, The Philippines' poverty index has five indicators, one of which is the type of toilet that the household has. Because water and sanitation are important but simple ways to measure social characteristics and because they are also included in the MDGs, these could become a key part of such results measures. Thus, developing special products for water and sanitation can contribute significantly in improving the MFI's social performance.

[76] This was brought out by an old evaluation of Bancosol, a successful Bolivian MFI. See Gonazalezs-Vega, 1996.
[77] See for example: Hashemi 2007; Hashemi and Anand, 2007; and SEEP Network and Argidius Foundation, 2006.
[78] CGAP 2005, p. 1.
[79] See for example Hashemi, 2007 for different methods.

In addition to such formal measurement, discussions with several MFIs in India suggest that water and sanitation are generally important concerns of their clients. Addressing these client needs can contribute to an improved quality of life and help build a strong brand for the MFI in the communities it serves. WSS loans can help provide a relationship with the community that is essential but that cannot always be achieved with individual loans. This is also necessary for its overall business, serving as a way of building up social capital for the MFI with the community.[80]

Facilitation and risk mitigation for MFI involvement: Despite the potential benefits, it must be recognized that many MFIs may be reluctant to launch new products. For the initial period, MFIs will need support. These will have to be provided on two fronts. First, most MFIs will need facilitation support for their exposure to the new and complex water and sanitation sector. Such support will include help in developing retail products, and project development for SME and for urban services upgrading. Those MFIs deciding to introduce these products will also need to build internal capacities for appraising, monitoring progress, and tracking use of loans. This type of support can be provided through appropriate grant mechanisms (discussed further in the next chapter).

Second, however, is the question of appropriate risk management for the MFIs. SME-type lending for small water investments can build the MFI capacity for project finance, and can help increase the average loan sizes and hence MFI profitability. However, initial build up of this new portfolio will have to be done carefully, with adequate attention to risk assessment and management. This will require time and technical support, and will push up initial transaction costs. These costs may be met through grant support. The understanding of and exposure to these risks will be new, and hence experience will need to be built up. There may be a temptation to use guarantees in such situations. However, this will need to be done very carefully. Use of guarantees should only focus on helping to build credit history for water providers, meeting regulatory concerns of MFIs, or helping extend loan tenors through innovative structuring. They should not be considered ways to speed up lending without adequate and careful appraisal.

Creativity and persistence will be needed for MFIs that venture into this new area, and for the water and sanitation sector to establish these new links to leverage additional resources, benefits, and much needed sustainability. The strategic options for these are explored in the next chapter.

[80] Based on discussions with two MFIs in India–SEWA Bank and Swadhaar Finaccess.

5. Exploring Strategic Options

Chapter 2 highlighted the large potential demand for microfinance in the water and sanitation sector. When coupled with the demonstrated positive reinforcing impacts of such activity outlined in the previous chapter, there should be considerable experience using microfinance for water and sanitation. However, a review of experiences suggests that despite many examples, very few have achieved scale. More importantly, the review also highlights that only a few large MFIs show an interest in the water and sanitation sector, for it continues to be relatively unknown and is perceived as high risk. Thus, strategic choices will need to address these perceptions, and must support the development of examples with potential for scaling up. These can demonstrate success and can help create an interest in these opportunities among microfinance and wider financial sector institutions.

The next section reviews key strategic choices across the product segments reviewed in previous chapters, to determine possible areas of focus for foundations and other development partners. It outlines common core activities across these product segments. The final section identifies possible strategic partners and the entry points these provide for demonstrating success.

5.1 Strategic Choices across Product Segments and Regions

Choices across product segments: Chapter 2 suggests that potential demand across all the four water and sanitation segments is likely to be quite high (USD 12.4 billion). Table 5.1 provides an overview of strategic choices across the WSS and the product segments. At nearly USD 9 billion, sanitation comprises 75 percent of this demand. Sanitation, mainly through individual retail loans for toilets, shows high potential. Some large MFIs (such as in Bangladesh and Vietnam) have shown the possibility of considerable scaling up, especially in rural areas. Other efforts in India also suggest similar potential. Urban sanitation, however, has received less attention by MFIs so far. Although in large urban centers, individual sanitation is likely to be constrained by space and tenure issues, there could be considerable scope in small- and medium-sized towns. The benefits from sanitation would be achieving MDG targets along with other benefits for health, time savings, dignity, privacy, and social status.

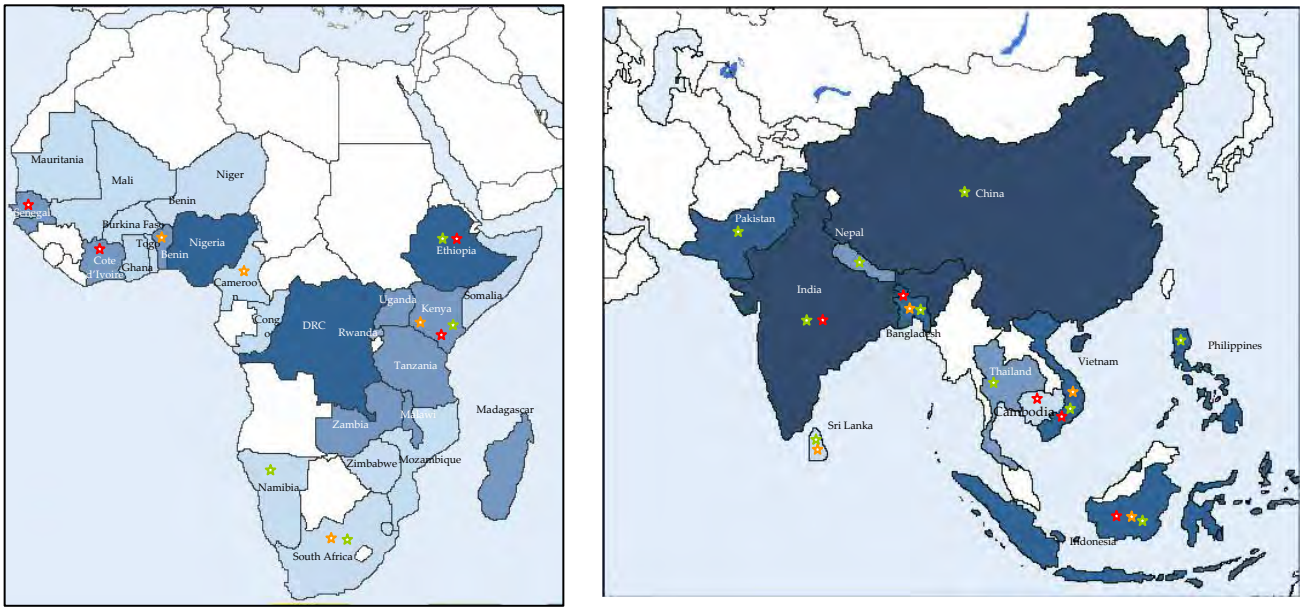
Table 5.1: Strategic Choices and Potential Demand across Segments

WSS Segment	Potential loans in USD billions (Borrowers in billions)	Product Segments		
		Individual retail loans for households	SME type loans for water supply	Urban services upgrading and shared facilities
Rural Water	1.9 (2.0)	**Medium** (for household facilities, and connections in small projects)	**Medium** (for community-managed water projects)	
Urban Water	1.5 (1.8)	**Medium** (for utility-linked new connections in large centers, and household facilities in small & medium towns)	**Low** (for community schemes & small private providers in peri-urban areas)	**Low** (for large urban centers with slums/low income settlements)
Urban Sanitation	3.7 (3.4)	**High** (in small and medium towns)		
Rural Sanitation	5.2 (5.2)	**High** (for individual toilets)		

Notes: Demand is based on estimates from Chapter 2, see Table 2.2. Opportunities for product segments are based on a review of experiences in Chapter 3.

While demand for water supply is only 25 percent of total estimated demand, there would be greater possibilities of realizing, and even increasing, this figure if the use of microfinance could be promoted for a higher level of services. Thus, water can be classified at a medium level of strategic importance. Retail loans and SME-type loans for water also have considerable scope, and can greatly increase health benefits, while freeing up public resources. Retail loans can be for utility connections (as in Indonesia and Cote d'Ivoire) or for households facilities in rural areas (as in Bangladesh or Vietnam). SME loans can be for community-managed projects (as in Kenya and Senegal) or small private service providers (as in Cambodia, Togo, and Mali) as well as for small public utilities (as in The Philippines). The choice between these segments depends to a great extent on the prevailing policies and institutional contexts in different countries. Besides the usual benefits of water and sanitation interventions, use of microfinance for water supply can help instill greater sustainability among water service providers due both to increased clientele and the exposure to market rigor. Urban upgradation is shown low preference due to its complexity and a lack of available project experience, but there would be value in supporting a pilot operation, especially since this would focus on the most vulnerable in fast-growing urban centers.

Strategic Choice for Microfinance for Water and Sanitation



Low (0-50 million) Medium (50-200 million) High (200-2000 million) Very High (more than 200 million)

(Potential loans in USD millions at 2005 prices)

☆ High MF Potential (WSS loans less than 5% of MF Gross Loan Portfolio)–based on Table 2.3

☆ High Financial Sector Potential (financial system deposits of more than 30 % of GDP)–based on Table 2.1

☆ Existing experiences in the use of MF for WSS–based on Chapter 3.

Strategic choices across regions and countries: All regions have significant potential demand, though the highest potential portfolio size is in the South Asia. In East and Southeast Asia, the size of demand is much less if China is excluded, due to its limited presence of microfinance institutions. A number of countries show potential in terms of demand and the relative strength of the microfinance sector. In terms of country estimates, India accounts for nearly 44 percent of the total potential demand for water supply, and 46 percent for sanitation. China, due to its large population, has a high potential demand, but most of it is for sanitation, and there is little scope for microfinance. The scope is also quite large across the rest of Asia and Sub-Saharan Africa: in East and Southeast Asia, Vietnam, The Philippines, and Indonesia all

have high demand levels; the same is true for all the countries in South Asia. In Sub-Saharan Africa, Nigeria, Ethiopia, Tanzania, and Kenya have a high volume of demand.

From the point of microfinance potential, the target countries include: Sri Lanka, South Africa, Vietnam, Indonesia, Senegal, Togo, Bangladesh, Benin, Kenya, and Cameroon. A number of others, such as India and China, also have potential for the wider finance sector.

5.2 Core Activities across Product Segments

To realize the strategic choices outlined above, considerable external efforts and support will be required. Based on the review of experiences and key issues in scaling up identified in Chapter 3, a few core activities have been identified as critical for developing opportunities for support and learning across the three product segments (see Tables 5.2 and 5.3). While all are important, sequencing their use will need to be determined in the given country contexts and the choices of product segments. Industry assessment is a critical input in the design phase for scaling up, and development of BDS is necessary to ensure the sustainability of small water service providers. Most stakeholders will need support for WSS product development. For SME and urban upgrading products, project development support is essential. While appropriate guarantees may be needed especially for the SME products, these should be accessed from available options through development institutions.

Table 5.2: Core Activities to Address Issues in Scaling Up

Issues in Scaling Up	Core Activities Needed for Scaling Up
Inadequate understanding of sector policies/institutions and potential market demand for loans	***WSS industry assessment and policy support*** including demand, market size, tenure issues
Most MFIs do not have special product for water and sanitation, and especially for SME-type products structured around project finance approaches	***WSS product development*** for: a) retail loans--possibly in the line of housing improvement products, and b) for SME funding on the line of project finance
MFIs lack awareness of WSS sector and institutions, and WSS sector lacks awareness of microfinance	***Facilitation by a credible promoter*** to facilitate partnerships between WSS institutions and MFIs
Lack of bankable projects for commercial funding; lack of services for small water service providers	***Project development support*** to create a project pipeline, and ***business development services*** during operations
Lack of access to medium/long term funds for MFIs, and subsidies to meet affordability concerns	***Capital funding*** to provide long-term funds for MFIs, and to meet subsidy needs

WSS industry assessment and policy support: This is needed, for MFIs do not understand the WSS sector well and the WSS actors do not pay adequate attention to market risks.[81] It is needed for all the product segments, to help establish potential demand and market size, and to target priority areas (e.g., small versus large cities). This support will ensure a firm basis to analyze costs, institutional and regulatory issues, specific issues such as service provision agreements between the government and the small services provider, and policies for connection/disconnection and land tenure. Such an assessment would also help to identify the need for and the possibility of mobilizing partial subsidies to address affordability concerns. It is needed by sub-sector at the country, state, and city level, depending on the government jurisdiction and scale of MFI outreach.

[81] See an industry assessment for Kenya's rural water sector in Mehta and Virjee, 2006.

Table 5.3: Core Activities by Product Segments

Core Activities	Product Segments		
	Individual retail loans for households	SME-type loans for water supply	Urban services upgrading, and shared facilities
WSS industry assessment and policy support	√ To identify demand, market size, costs, institutions, connection policies/practices, etc.	√ To assess market size, institutional and regulatory issues, costs	√ To assess market size, institutional and land tenure issues, costs, etc.
WSS product development	√ For special product, or to adjust the current MF products	√ SME-type product linked to cash flow, partial subsidy req.	√ Special services upgrading linked product & citywide scaling up
Facilitation by a credible promoter	√ For linking MFIs with utilities; community mobilization; dissemination	√ To establish links between MF and WSS	√ To establish links with local authority, utility and NGOs
Project development support/business development services	√ Not needed	√ Needed for each project initially, over time merged with BDS	√ Needed for each project initially, over the long term time merged with BDS and local authority functions
Capital funding	√ Needed for MFIs without easy access to funds for WSS lending	√ Partial subsidies to address affordability concerns; partial risk capital	√ Partial subsidies to address affordability concerns; partial risk capital

Developing WSS products and business lines: The experience reviewed in Chapter 3 suggests that for individual retail loans, typical MF products may often need only slight adjustments. However, for the SME-type loans, special products will be needed particularly to include risk management and cash flow-based lending. The product development should ensure that over time MF systems are able to internalize the appraisal and the costs for such products.

Facilitation by a "credible promoter": Given the lack of familiarity of the two sectors with each other, the role of a credible promoter is essential to facilitate and catalyze such transactions. The role of such a promoter would mainly focus on establishing links between key stakeholders in the water and sanitation sector and the financial sector, as well as on more detailed transaction design issues and related capacity-building support.

Project development/community mobilization support: Conventional project development in the water and sanitation sector, particularly for small water projects that are mainly funded through grants, does not pay adequate attention to financial viability issues and risk management plans. In addition, for small water projects, the community plays an important role: mobilization and participation of communities are often critical to project success. Thus, new approaches to project development are needed, and must be initially supported with adequate funding for technical assistance. Appropriate financing mechanisms are also needed to ensure that viable communities and service providers have access to such funding. As far as possible, project development should be independent of potential lenders, to avoid any conflict of interest and adverse effect on the quality of project appraisal. Over time, for SME lending these services should come through BDS, and for urban services upgrading through BDS and local authorities.

Small water service providers, whether they are community-managed, private sector-run, or small public utilities are essentially small- and medium-sized enterprises (SMEs) with a basic revenue model built around water tariffs. As is the case for any SME, business development services can help in promoting the growth and sustainability of these enterprises. Initially, such services for project development and

community mobilization--as well as technical, financial, and audit services during operation--may require grant-based support, but over time they can be procured through the market as with other business development services.[82]

Capital funding: While major support in scaling up may be needed for developing actual transactions, some capital funding will also be needed due to three factors: a) the lack of knowledge by FIs/MFIs of the risk involved, so that initial pilots may need risk capital (this needs to be well designed, so that the MFIs are not lax in their project appraisal); b) local regulatory requirements may necessitate guarantees or adequate Tier 1/2 capital that will enable MFIs to lend for cash-flow backed project funding; c) FIs/MFIs must gain access to long term funds, which may be otherwise difficult in local markets; d) long-term capital can be an incentive for the MFIs to develop this new market; and e) capital subsidies can help address affordability concerns.

Appropriate mechanisms for funding these core activities will need to be developed, depending on strategic choices for product segments, and on the strategic partners and entry points (discussed in the next section). Key principles in designing these mechanisms would be to ensure scaling up (at country or city level as appropriate) and to enable more MFIs to start lending operations for water and sanitation.

5.3 Strategic Partners and Entry Points

Options for strategic partners: A number of strategic entry points are identified for promoting the use of microfinance across the different product segments. These are based on an understanding of the development of the microfinance industry, the potential role of other financial institutions, and the need to reach a large number of microfinance institutions across many countries.

This approach also draws on three key findings from an analysis of the available experience. First, activities led by microfinance institutions (or financial institutions) are more likely to be scaled up because, when successful, these projects suggest workable business models that can be internalized in MF systems.[83] Second, there is a critical need for a credible institution to play a facilitator or promoter role, because of the unfamiliarity of the water and sanitation sector with microfinance and market-based financing approaches, and a lack of knowledge about the water and sanitation sector among microfinance and other finance institutions. The third related finding is the presence and rapid growth of a large number of MFIs in several countries.[84] Thus, appropriate means to disseminate any lessons or knowledge about these WSS products and business models is needed. To respond to these, strategic options for appropriate entry points through three different partners are identified:

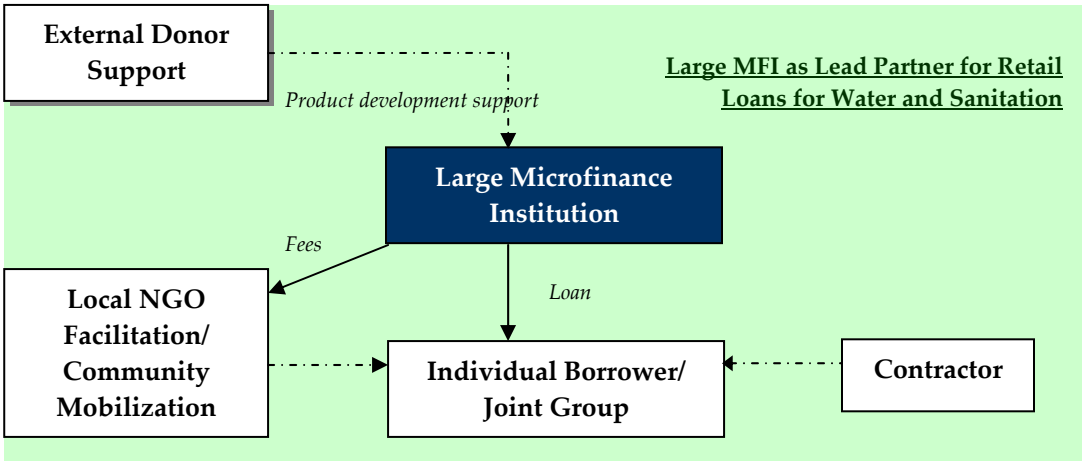
- ***Large microfinance institutions as lead partners:*** Over the past few years, with the development of the microfinance sector, a number of MFIs have achieved significant scale in terms of outreach and portfolio size. A few, such as the BRI in Indonesia and VBSP in Vietnam, comprise a single dominant MFI in the country. In other countries, there are other several large MFIs that can achieve a scaling up by themselves, as well as provide scaleable models for other MFIs in the

[82] See Mehta et al, 2007 for a discussion of BDS for small water enterprises.

[83] This is analogous to the development of the housing finance industry in India over the past two decades. Robust and successful models developed by the Housing Development Finance Corporation (HDFC) have been picked up by the commercial banks and new housing finance companies. This has helped to significantly scale-up housing finance in India.

[84] This is evident from the information available for the last five years from the Mixmarket website.

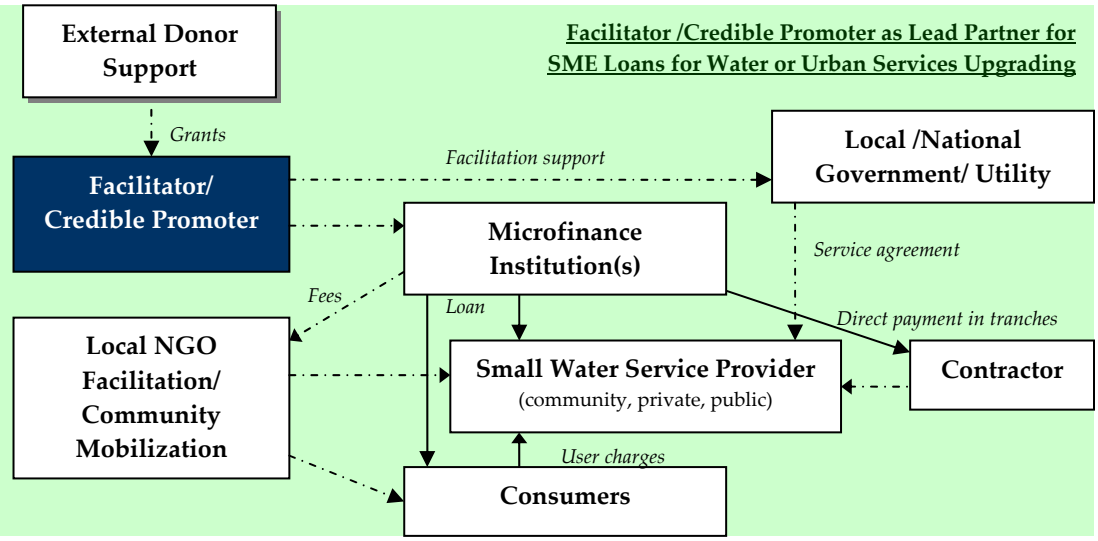
country or the region. For example, these include Grameen Bank and BRAC in Bangladesh; Basix and SEWA Bank in India; and CMAS in Senegal.[85] In this case, the basic approach would be to support the development of a business plan for the MFI to engage in this sector including an assessment of potential market, pilot testing, capacity building for scaling up and assessing impacts on the MFI's financial and social performance as well as WSS impacts such as increased coverage and sustainability.



Working directly through such large MFIs is most appropriate when an individual retail-type product is the preferred route. While technical support will still be necessary, this can be gained through local partners chosen by the MFIs themselves. Another trade off worth focusing on would be between water and sanitation loans: while water loans tend to be more complex, sanitation loans (especially in rural areas) may be easier to manage, and can be more easily linked to ongoing sanitation promotion programs, as is evident from the apparently widespread use of credit under the Total Sanitation Campaign approach in India. In some countries which have autonomous water utilities (with a focus on financial viability), a simple, workable model could be to promote new utility connections through MF credit. Technical assistance will be needed for industry assessment and for establishing links with local authorities and utilities.

- ***Facilitators/credible promoters as lead partners:*** A second strategic partner in these endeavors is a credible promoter agency based locally in the country/region that can provide the necessary facilitation support and act as a catalyst in developing transactions. Such a promoter can work within one country or in a group of countries. Its main role would be to help establish links between the water and sanitation sector actors (utilities, public water board, local authorities, etc.), the microfinance sector (MFIs, commercial banks, etc.), and the household or community clients. Key steps would include: i) an industry assessment, ii) establishing links between stakeholders from each side, iii) facilitating project development support, iv) supporting needed policy changes, v) testing models and scaling up successful lessons, and vi) contributing to capacity building.

[85] These examples are based on the experiences reviewed in Chapter 3. It is most likely that there are more microfinance institutions that would also be good partners for this purpose. For example, ACLEDA in Cambodia, or PADME and PADPE in Benin are also large MFIs that may be interested in water and sanitation products.



Choice of a promoter agency as the main strategic partner would be more appropriate for the other two product segments: namely, the SME-type loans and loans for urban services upgrading. In this case, the choice of finance institution partners would depend on the country contexts and on an assessment of microfinance or other financial institutions in the given country or region.

Partners could include agencies such as the Water and Sanitation Program (WSP) which has been engaged in such activities and has country presences in East and Southeast Asia, South Asia, and Sub-Saharan Africa (as well as in Latin America); or CREPA, which also has worked on similar activities in a number of countries in West Africa. Other options may also be possible, including working with other agencies involved with project development support such as Infraco and Devco under the private infrastructure development group (PIDG), which focuses on project development support or the iDEC[86] in India. However, these agencies will need incentives to work with the small projects that this study envisages under microfinance. For urban services upgrading, agencies such as the SPARC, NSDF, and the Nirman consortium (which operates in over 70 cities in India and focuses on slum mobilization and upgrading) could be a potential partner.[87]

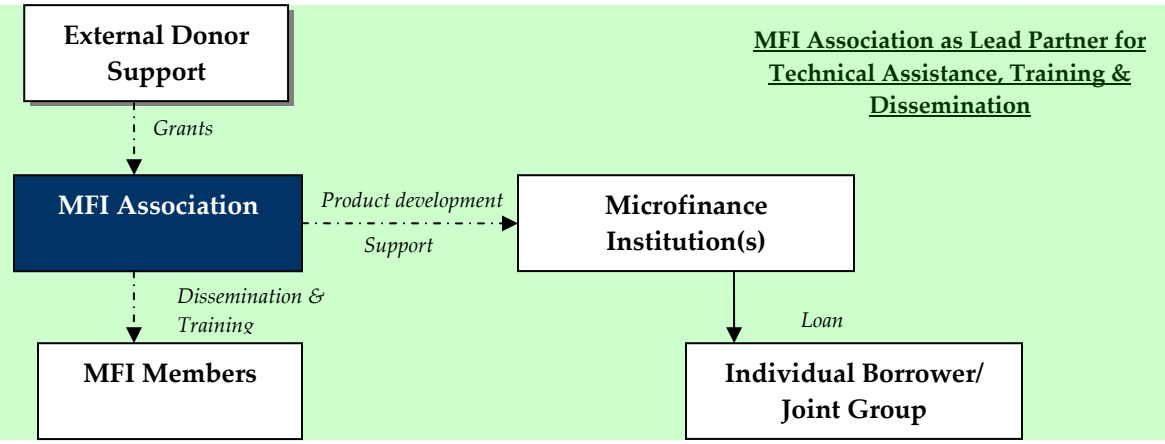
- ***MFI associations:*** As noted above, despite the potential demand and the benefits for the microfinance sector, in practice, only a few MFIs have shown an interest in engaging in this sector. To create greater interest among the MFIs, another strategic partner could be the microfinance associations at the country or regional levels. Many countries in these regions have their own associations, and in Africa there is an association of associations.[88] MFI associations can source appropriate external technical expertise to carry out a WSS industry assessment (to determine the potential for using microfinance in the water and sanitation sector), and can work

[86] iDeck is a company in India with equity participation by the State Government of Karnataka (49%), Infrastructure Development Finance Company (IDFC - 49.5%), and Housing Development Finance Corporation (HDFC - 1.5%). Details of iDeck are at http://www.ideck.net/index.htm

[87] SPARC (in association with the CEPT in Ahmedabad) plans to explore citywide slum upgrading strategies in about five Indian cities help develop sustainable timebound options for services and shelter upgrading under the Government of India's JNNURM program.

[88] See details of the MFI associations in Annex 2.

with interested MFIs to develop and test water and sanitation products, share results with other MFIs, and provide necessary capacity building support. It is likely that the MFI associations will be more amenable to individual retail loans.



Need for market research and experience sharing: Given the relatively uncharted territories in working with these strategic partners, pilot applications are likely to be needed. However, such pilot operations should be designed within a wider scaling up strategy. This necessitates an assessment of the water and sanitation industry to ensure appropriate choices in institutional design and financing mechanisms that are sustainable with countrywide scaling up. Design has to be in relation to the level of demand, the country policy/regulatory environment, and stakeholder readiness. Initial strategic choices for support will need to be made carefully, to ensure that different business models are created out of this experience. It is also necessary to create mechanisms for experience-sharing within and across countries. This will necessitate simultaneous identification of lessons and of effective means for sharing these lessons.

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