

Financing Water and Sanitation for the Poor

The role of microfinance institutions in addressing the water and sanitation gap

October 2015

PROBLEM STATEMENT

Addressing the world's water and sanitation needs is one of the great human development challenges of our time. Globally, 663 million people do not have access to improved drinking water sources, and 2.4 billion people lack access to improved sanitation¹. Lack of access to clean water and basic sanitation facilities creates significant costs in terms of illness, lost time and productivity. Current levels of funding have not provided enough resources to solve the problem. Recent OECD estimates project that universal, sustainable access to water and sanitation could cost trillions of dollars². Improved water and sanitation in developing countries can generate benefits for every dollar spent³. Despite these high economic returns, governments face competing priorities and cannot address the water and sanitation gap alone.

The upfront cost of a toilet or a piped water connection can easily equal a household's entire monthly income. However, many are willing to purchase one if they can spread the cost over time by saving or borrowing. Microfinance institutions (MFIs) are beginning to help fill this gap by providing small water and sanitation loans to households and businesses. These pioneering MFIs have a strong track record of disbursing a large volume of water and toilet loans and working closely with local government and nongovernmental organization (NGO) programs for social marketing and demand-generation.

¹ World Health Organization. (2015). Progress on Sanitation and Drinking Water: 2015 Update and MDG Assessment.

² OECD. (2011). Meeting the Challenge of Financing Water and Sanitation.

³ World Health Organization. (2012). Global costs and benefits of drinking water supply and sanitation interventions to reach the MDG target and universal coverage.

Key Findings

- **USD 120 million in microfinance lending** has resulted in more than 573,000 household water and sanitation loans reaching more than 2.4 million people.
- **Water and sanitation loans have risk profiles comparable to other loans.** Approximately 80 percent of WaterCredit borrowers earn less than USD 2 per day, but have repayment rates of more than 99 percent.
- **Household water and sanitation lending stretches** the impact of each philanthropic dollar invested by 10 times.
- **The Reserve Bank of India recently added water and sanitation infrastructure to the priority sector lending,** which could release USD 40-50 billion into the sector.
- **Loan recipients enjoy socio-economic benefits.** In India, 39 percent of borrowers reported increased safety and nearly 25 percent of women were able to increase incomes due to greater productivity.



These examples provide positive evidence that microfinance increases investment for water and sanitation and provides social and economic benefits to MFIs, governments, and low-income borrowers and their families. Water and sanitation financing also shows strong promise of supporting the UN Open Working Group's ambitious Sustainable Development Goal (SDG) 6 to end open defecation and ensure basic access to water and safe sanitation to everyone, everywhere, by 2030.

ADDRESSING THE WATER AND SANITATION FINANCING GAP

Water.org and the Water and Sanitation Program (WSP) of the World Bank's Water Global Practice are helping to expand access to water and sanitation around the world, and have cooperated on this Learning Note to spotlight how sanitation financing helps the poor to meet their needs.

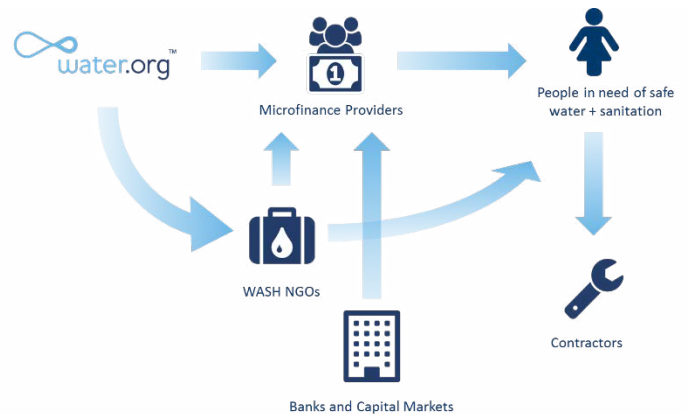
Water.org, through its WaterCredit program (see Figure 1), provides a variety of capacity-building grants and technical assistance to create, pilot, and scale water and sanitation financing. Currently, WaterCredit provides funding to NGOs and microfinance providers for capacity building and technical assistance. These partners then leverage funding from banks and capital markets to disburse loans to people in need. Borrowers pay water and sanitation service providers for products and services. Going forward, this approach has the potential to scale through various financial institutions, including small banks, regional rural banks, and co-operative banks, among others.

Water.org has provided USD 11.3 million in subsidies to MFIs and NGO partners worldwide, which in turn have disbursed over USD 120 million in loans reaching 2.4 million people⁴ (see Table 1). Factors leading to successful water and sanitation financing have included MFI's ability to leverage capital and offer viable products, strong client demand and ability to repay their loans, as well as functioning supply chains.

WSP helps catalyze markets for water and sanitation services for the poor by providing technical assistance to governments, businesses, utilities and MFIs⁵.

Figure 1. WaterCredit Model

WaterCredit uses philanthropic funding to spur lending for water and sanitation – raising access to safe drinking water and sanitation through a scalable model.



In countries such as India, Kenya, and Cambodia, WSP provides support to the government and local financial institutions to pilot small scale water and sanitation financing programs for households and small businesses, as well as larger scale water infrastructure financing for water service providers. WSP also strengthens the broader operating environment for service delivery by building the capacity of entrepreneurs, supporting research and development of new low-cost technology, and generating demand through education and marketing.

Table 1. WaterCredit Global Portfolio (March 2015)

Number of Countries ⁶	6
Number of financial institution partners	53
Total subsidies to financial institutions provided by Water.org	USD 11.3 million
Total WASH loans disbursed by financial institutions partners	USD 120 million
Number of loans disbursed	573,000
Number of people reached	2.4 million
Average loan size	USD 210
Average effective interest rate	14.5%
Repayment rate	~99%
Portfolio at Risk over 30 days ⁷	1.3%

⁴ People reached are defined as the borrowers and members of their household.

⁵ Sanitation businesses can include masons and small sanitation entrepreneurs, latrine manufacturers, and others.

⁶ Countries include Bangladesh, India, Indonesia, Kenya, Philippines, Uganda, with most of the loans being concentrated in India.

⁷ Defined as % of total outstanding loan portfolio more than 30 days past due.

Emerging evidence from the joint work of Water.org and WSP demonstrates the viability of water and sanitation microfinance and is supported by a robust database of water and sanitation loan performance.

This learning note includes a portfolio analysis conducted in 2014 of one of the largest water and sanitation loan portfolio datasets available offering insights into the viability of water and sanitation lending. The analysis includes a sample of more than 245,000 loans in India, split roughly evenly between water and sanitation. The portfolio analysis, along with programmatic, independent evaluations and WSP analyses show that water and sanitation loans have strong social and economic benefits to low-income households and that partnerships with MFIs can help NGOs and governments better leverage investments.

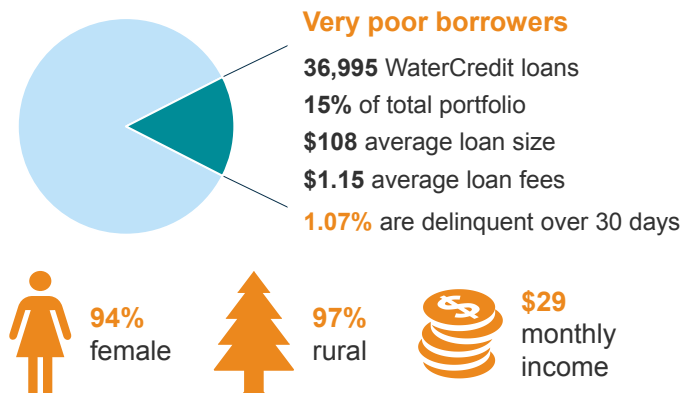
KEY FINDINGS

Microfinance breaks down barriers separating the poor from improved water and sanitation

WaterCredit has facilitated over 573,000 water and sanitation loans while maintaining a repayment rate of 99%. This demonstrates a large demand for water and sanitation loans, which MFIs are well-positioned to meet. A recent study by Monitor Deloitte⁸ estimates the sanitation market in India alone represent a USD 10-14 billion need, assuming that value chains can deliver toilets and that partial subsidies are available. Consumer finance makes up USD 1.6-4.2 billion of that estimate, with post-construction bridge funding accounting for USD 4.6 billion⁹. The market is likely to grow as the rural incomes rise.

The portfolio analysis found that water and sanitation financing is viable for poor households. Of the loans disbursed by Water.org's MFI partners, 15 percent went to borrowers earning less than \$1.25 per day (see Figure 2), and more recent data finds that approximately 80% of clients are living in household earning less than \$2 per day. Not only did these borrowers decide to take loans,

Figure 2. WaterCredit India Loan Analysis Portfolio



they also demonstrated the ability to repay. Only one percent of very poor water and sanitation loan recipients were delinquent over 30 days, compared to 0.45 percent of all other loan recipients¹⁰.

Evidence from WSP in Cambodia suggests that access to a water and sanitation loan strengthens demand for latrines across all customer segments. As households were offered sanitation financing, the number of households surveyed that were willing to purchase a latrine at market prices increased from 12 to 50 percent, indicating that access to credit spurs sanitation improvements¹¹.

In Kenya, WSP pioneered an output-based aid project to increase access to sewer and water connections in low-income areas of Nairobi. Household connections are financed with a combination of subsidies from WSP, up-front customer deposits, and loans through the local utility. Customers are able to make monthly water bill payments via mobile phone. WSP found that the poor are more willing to take loans if they have the option to pay more frequently and in small amounts that reflect the micro-economy in which they operate. The loans offset high connection costs, and the flexible payment scheme allows for payment of connection loans with the water bill – a system well suited for the fluctuating incomes of self-employed or informal sector workers.

MFIs are uniquely positioned to efficiently meet the latent demand for household level water and sanitation finance. They provide financial services across their

⁸ A Market Led, Evidence Based, Approach to Rural Sanitation. Prepared by Monitor Deloitte on behalf of the Bill and Melinda Gates Foundation. November 2013.

⁹ A Market Led, Evidence Based, Approach to Rural Sanitation. Prepared by Monitor Deloitte on behalf of the Bill and Melinda Gates Foundation. November 2013.

¹⁰ WaterCredit loan portfolio analysis.

¹¹ Understanding Willingness to Pay for Sanitary Latrines in Rural Cambodia. IDInsight. October 2013.

client networks, and tailor the loans to meet local needs. For example, over the last ten years, ASA Philippines Foundation has grown to serve over 1 million clients through 700 branches in the Philippines. In early 2015, Water.org and ASA Philippines started a ten month pilot program to design and pilot loans for financing water and sanitation improvements and provide health education. Over the course of the pilot program, ASA Philippines aims to provide a minimum of 3,000 water and sanitation loans across 19 branches and position the new loan products to expand into all ASA Philippines branches.

ASA Philippines' pilot period has helped to identify and detect challenges that may inhibit product scale. Early refinements included the introduction of a loan officer incentive scheme to incentivize or motivate the loan officers to be more enthusiastic in offering water and sanitation loans to existing clients. Refinements such as these will help ensure greater success as the loans roll out to the new branches and become a product offering to a 1 million and growing client market.

Water and sanitation loans have demonstrated economic and social value to MFIs and show risk profiles comparable to other microloans

Water and sanitation loans have not posed more risk than other microloans, including income-generating loans. Across Water.org's 53 WaterCredit partners, the average water and sanitation loan portfolio at risk over 30 days is 1.3 percent, well below the industry benchmark of 3-5 percent. MFIs have further reduced the risk of water and sanitation loans through carefully structured lending to meet local needs. Loans are typically provided to clients that are in joint-liability or self-help groups. MFIs have also conducted health education campaigns to complement the financing with community education which increases product demand and engages community involvement.

Water and sanitation loans offer MFIs strategic business value such as attracting and retaining customers. In Cambodia, nearly three fourths of water and sanitation loan recipients were new customers, of which about 15 percent went on to take another loan during the program pilot – the majority for non-water and sanitation purposes such as agriculture and small business. Retaining

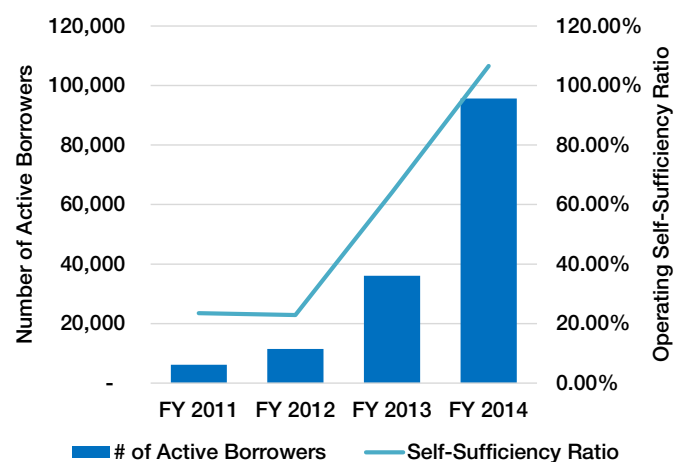
customers and cross-selling them on other loan products is one way in which water and sanitation loans support the MFIs' core business.

Offering water and sanitation loans at scale can also help make these programs viable and sustainable. Grameen Koota in India expanded its financing program from a small pilot to comprising 9.1 percent of the total loan portfolio. As the number of active water and sanitation borrowers grew, the operating self-sufficiency ratio¹² specifically for water and sanitation loans grew as well (see figure 3). Today, the operational self-sufficiency ratio is 106.6 percent, indicating that at least the costs of offering water and sanitation loans can be covered by the fee and interest income on these loans.

Strong operational self-sufficiency ratios were also seen in Cambodia where WSP launched a pilot program with two MFIs serving primarily rural and low-income communities. The MFIs offered individual or group loans ranging from \$40 to \$250, with an interest rate of 2.6-2.85 percent per month. By the end of the pilot, both MFIs achieved loan operating self-sufficiency ratios greater than 100 percent for the water and sanitation loan portfolio.

¹² Operational Self-Sufficiency (OSS) indicates whether operating income covers operating expenses, i.e. whether the loan portfolio is financially sustainable. It is calculated as $\text{Operational Revenue} / (\text{Financial Expense} + \text{Loan-Loss Provision Expense} + \text{Operating Expense})$.

Figure 3. Grameen Koota WASH Lending Growth



Organization	GRAMEEN KOOTA	GUARDIAN	ASA Philippines
Country	India	India	Philippines
WaterCredit Start Year	2009	2008	2015
Loan Type	Joint Liability Group	Joint Liability Group	Individual
Location	187 branches across 43 districts and 3 states	9 branches in 4 districts of Tamil Nadu state	19 pilot branches in 11 provinces
Number of Loans	282,673	32,544	1,996
Total Amount Disbursed (USD)	54.5 million	6.5 million	352,540
Water and Sanitation Loans as % of Portfolio	9.1%	100%	0.04%
Loan Size (USD)	193	200	177
Repayment Period	24 months	18 months	12 months
Repayment Frequency	Weekly, bi-weekly or monthly	Monthly	Weekly
Processing Fee	1%	1%	0%
Interest Rate (Annualized, Declining Basis)	22%	21%	15%
Portfolio Growth (Compound Annual Growth Rate)	475% (March 2010-2014)	53.6% (March 2009-2013)	Not available – WaterCredit loan program is in first year
PAR > 30 (%)	0.09%	1.38%	0.35%

Association for Social Advancement (ASA) Case Study

While water and sanitation loans are unlikely to be major profit drivers for most financial institutions, they have other business value and can help meet the social objectives of the organization. Water and sanitation lending helps MFIs fulfill a commitment to address their clients' pressing needs for improved health and wellbeing. One of WSP's partners in Bangladesh, the Association for Social Advancement (ASA), officially adopted sanitation loans as a new product in 2014 after testing and validating the economic and social benefits of sanitation financing.

This loan program links the household loan recipient to trained sanitation entrepreneurs. As part of the program, WSP offered training and capacity building for sanitation entrepreneurs, and ASA offered loans with flexible terms and low interest to these entrepreneurs. In 2014 alone, over 700 sanitation entrepreneurs were trained and over \$590,000 disbursed. In 2016, WSP will scale this initiative with two large MFIs in Bangladesh.

It is also notable that the structure of the loan affects portfolio performance. MFIs offer a variety of loan structures (see Table 2). India water and sanitation loan portfolio analysis revealed that higher rates of delinquency are most closely correlated with higher total loan amounts, higher fees, and longer loan repayment terms (over 18 months). MFIs can design water and sanitation loans for low-income customers as a viable and profitable product by offering smaller loans with shorter repayment terms. Governments and development partners can provide initial support to MFIs to design, refine, and scale these loan products.

WSP has also seen that flexible lending products that are designed to meet the needs of the poor encourage greater uptake. Flexible design features include paying for upfront connection costs, variations in repayment frequency, and grace periods. It is important to manage the tradeoffs of flexible product design. While it can increase an MFI's transaction costs it can also reduce the risk of borrower default.

MFIs like Ecumenical Church Loan Fund (ECLOF Kenya) are socially driven to help poor communities gain access to water and sanitation. ECLOF Kenya entered into a partnership with Water.org in 2011 to offer water and sanitation loans to their clients. These efforts are driven by ECLOF Kenya's social mission to provide products

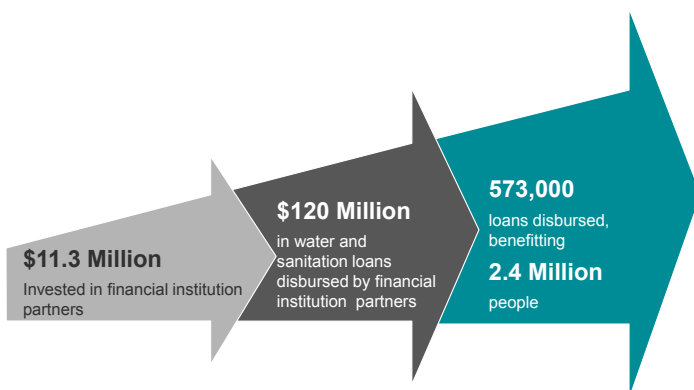
and services that reduce their clients' vulnerability and help ensure a life of dignity and prosperity. To date, ECLOF Kenya has disbursed over 4,000 loans, which represents 18 percent of their overall lending portfolio. ECLOF Kenya reports that water loan products contribute to client economic gain as time previously spent on fetching water is used for economically viable activities. Access of adequate water has led to increased farming activities resulting in clients' ability to repay their loans. ECLOF Kenya has included water and sanitation lending into their five year strategic planning to further emphasize their commitment to water and sanitation lending as a way to fulfill their mission.

MFIs effectively leverage funding for social outcomes by facilitating more efficient investments

Water and sanitation loans can leverage development funding for greater impact and help meet ambitious national and global targets, including the SDG 6 to end open defecation and ensure basic access to water and safe sanitation by 2030. Water and sanitation lending multiplies the impact of a traditional subsidy by leveraging capital for loans from the private sector and social investors (see figure 4).

WaterCredit borrowers have taken out more than \$120 million in loans for household water and sanitation improvements, demonstrating the power of micro loans to mobilize domestic resources. Repayment rates of 99% are a clear signal, of not only market demand, but the availability of household income to payback small loans.

Figure 4. WaterCredit Leverages Funding



Grameen Koota Case Study

Grameen Koota is a microfinance institution in India that offers both income generating and consumption loans, including a specialized loan product for water supply and sanitation. The sanitation loan has an interest rate of 22 percent, lower than the 26 percent interest rate charged for income generating loans. Meanwhile, sanitation loans have comparable performance and repayment rates. After piloting in a few branches, the water and sanitation loan product now reaches the entire network, making up 9.1% of Grameen Koota's total portfolio as of May 2015.

Over time, Grameen Koota realized that improving the socioeconomic wellbeing of its clients required more than credit. With the vision of a more holistic solution, Grameen Koota's NGO wing Navya Disha was launched in 2005 to educate clients about health and hygiene. Grameen Koota contributes 5% of its annual profits to Navya Disha for water, sanitation, and hygiene activities.

Water.org supported Navya Disha to provide awareness campaigns, train masons, and promote the WaterCredit loans offered by Grameen Koota. Water.org also provided guidance on product design and funded market surveys, awareness building, product development and marketing, and monitoring and evaluation. Since 2010, Grameen Koota's WASH lending portfolio has grown at almost 380 percent per year, a reflection of high client demand.

Participation of financial institutions in the water and sanitation sector can be facilitated by government policy. The Reserve Bank of India recently added water and sanitation infrastructure to the priority sector lending, a positive sign likely to spur additional capital for credit-enabled household sanitation lending. Priority sector lending by banks provides credit in sectors of the economy that are important for development but would otherwise lack adequate funds. Analysis suggests that continued robust advocacy for this policy change in India

alone could release an additional USD 40-50 billion¹³ into the sector, significantly reducing the reliance on philanthropic aid and unlocking critical funding for water and sanitation financing for the poor.

Water and sanitation loans have strong social and economic impact for borrowers and their families

Investment in improved access to water and sanitation produces substantial returns for households, including socioeconomic and health impacts. In a recent evaluation in India, nearly one in four WaterCredit borrowers reported reduced illness and one in five reported reduced medical expenses. Extensive academic studies have shown that reducing illness improves children's school attendance and lifetime earning potential. Access to improved water and sanitation also reduces the incidence of chronic diarrhea—improving cognitive functioning and reducing the risk of impaired growth. Research suggests that impaired growth decreases the likelihood that children will lead healthy, economically productive lives.

Access to improved on-site water and sanitation brings dignity, safety, and privacy to the family, especially for women, children, and the elderly. Research shows that nearly all WaterCredit borrowers are women, and women with a toilet in the home are safer and have more privacy than those who must find isolated locations far from the home to defecate. WaterCredit's impact analysis indicates that 39 percent of sanitation loan recipients reported increased safety¹⁴.

A large proportion of households with access to water and sanitation have experienced increased household income. Before taking a loan, only 53% of WaterCredit borrowers in India made at least 3,000 Rupees (USD 47.30¹⁵) per month; after the loan, this proportion nearly doubled to 97%, suggesting that the investment in water and/or sanitation may have contributed to households' abilities to generate income. According to the WaterCredit impact analysis, nearly one quarter of borrowers attributed increased income to extra time for women, and one in five attributed increased income due to an increase in overall productivity¹⁶.

WHAT WE STILL NEED TO KNOW

Water and sanitation microfinance is an emerging field. In addition to the findings of the WaterCredit loan portfolio analysis, MFIs and development partners may wish to further explore the following questions:

- **Other Products:** While experience to date has focused primarily on microcredit for water and sanitation, microfinance now includes a much broader range of financial products that address the varied needs of consumers. More research is needed on the roles that savings, remittances, and other financial products play in financing water supply and sanitation services.
- **Market Distortions:** Although many in the microfinance industry advise against subsidies, some level of initial support from donors or governments may be necessary to encourage financial institutions to offer water and sanitation loans. We need to know more about how development partners can support financial institutions without distorting the market.
- **Reaching Scale:** MFIs are testing several different types of approaches, and are still learning about the types of loan products that scale effectively and the conditions that support their success.
- **Estimating Impact:** Many MFIs are interested in the specific economic value of their social missions. However, quantifying the economic benefits of customers' improved water and sanitation status on financial institutions is complex, and merits further investigation.

¹³ Considering the Inclusion of Water and Sanitation as a Priority Sector. Albright Stonebridge Group, India.

¹⁴ Evaluation completed in 2014 by NR Management Consultants India (NRMCI).

¹⁵ Using May 15, 2015 exchange rate (1 USD = 63.42 Indian Rupees).

¹⁶ Evaluation completed in 2014 by NR Management Consultants India (NRMCI).

CONCLUSIONS

Evidence from Water.org's and WSP'S existing programs in Bangladesh, India, Kenya and the Philippines demonstrate that a viable market can be made for financing water and sanitation improvements. MFIs have developed and launched water and sanitation lending programs that have disbursed over \$120 million in loans. A conclusion from the programs have shown that as access to water and sanitation credit became available, low-income clients chose to take out loans and were able to repay those loans.

Water and sanitation lending programs have demonstrated benefits for financial institutions, development partners and most importantly clients and their households. These findings indicate that microfinance principles can be successfully applied to the water and sanitation sector and leverage funding to achieve greater reach than traditional subsidy based models. Governments and NGOs can work with MFIs, as both demand generators and financiers, to help accelerate access to safe water and sanitation.

By John Ikeda and Heather Arney

The Water and Sanitation Program (WSP) is a multi-donor partnership created in 1978 and administered by the World Bank to support poor people in obtaining affordable, safe, and sustainable access to water and sanitation services. WSP's donors include Australia, Austria, Canada, Denmark, Finland, France, the Bill & Melinda Gates Foundation, Ireland, Luxembourg, Netherlands, Norway, Sweden, Switzerland, United Kingdom, United States, and the World Bank.

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ABOUT THE PROJECT

In 2014 WSP and Water.org jointly conducted a loan portfolio analysis based on data from over 100,000 loans administered by Water.org partners. The analysis was done with two goals: 1) to better understand the demographic characteristics of households borrowing finance for water and sanitation and 2) to identify differences in delinquency rates and characteristics for low income clients. Building off of these findings and other existing case studies led by WSP (such as efforts in India to scale market-based approaches to rural sanitation), the partnership prepared this learning note to highlight the key findings of the loan analysis and other case studies to present the available evidence for water, sanitation and hygiene (WASH) microfinance as a viable financial and social opportunity for developing countries.

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