

## WATER AND SANITATION MARKET ASSESSMENT: POTENTIAL VIABILITY OF WATERCREDIT & MICROFINANCE SOLUTIONS IN INDONESIA

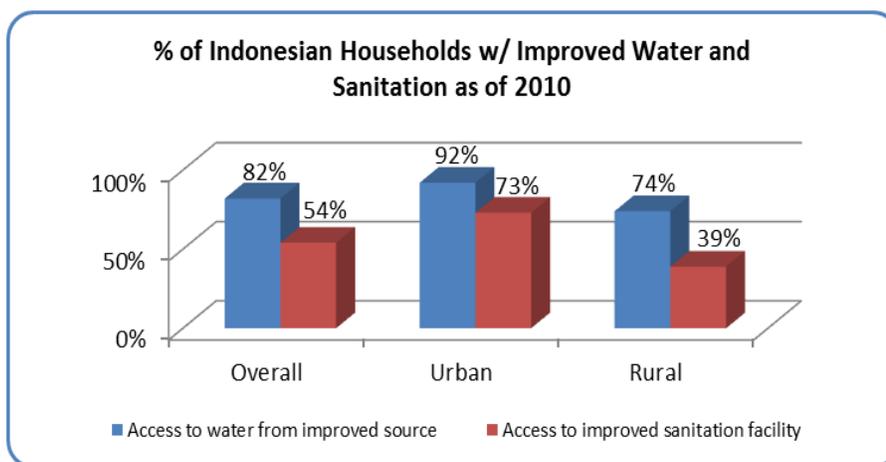
### Executive Summary

This report was developed by Water.org in collaboration with the Caterpillar Foundation to assess the market for water, sanitation and hygiene (WASH) services in Indonesia and gauge potential opportunities to expand access to new or improved WASH solutions through financial services. The report was based on analysis of the WASH and microfinance markets across a representative geographic sample of seven provinces of Indonesia from September – November 2012. Researchers conducted a comprehensive series of interviews with a broad range of actors representing government entities, WASH providers, WASH materials manufacturers, non-governmental organizations (NGOs), international development agencies, and financial services providers, with particular focus on previous and existing efforts to improve access to WASH. Researchers also conducted 15 focus groups with residents in rural, urban, and peri-urban areas around seven cities to better understand the nature of demand for improved WASH services across Indonesia<sup>1</sup>.

### Access to Improved Water and Sanitation

**Despite strong economic growth since the Asian financial crisis and significant improvements in WASH access over the last 20 years, Indonesia faces significant shortfalls in household and community WASH facilities.** The sanitation situation is particularly dire. Only 54 percent of households have access to an improved sanitation

facility, which implies that over 111 million Indonesians rely on unsanitary facilities or open defecation. While access to improved water sources is higher, the situation is still alarming. Overall, 82 percent of households have access to an improved water source, leaving approximately 43



Source: WHO / UNICEF Joint Monitoring Programme (JMP) for Water Supply and Sanitation

<sup>1</sup> Water.org conducted focus groups in and around the metropolitan areas of Jakarta, Bandung, Malang, Yogyakarta, Samarinda, Pekanbaru, and Padang. Respondents were 48 percent female and 52 percent male, 40 percent rural and 60 percent urban or peri-urban, and well distributed amongst a variety of occupations including farmer, home maker, government, trader, skilled labor, other agriculture, and other salaried positions.

million people relying on unsafe water sources.

**In urban areas, unsafe sanitation practices make the public's heavy reliance on shallow wells increasingly dangerous.** Piped water access in Indonesia is particularly low. Just 20 percent of households are connected to water networks.<sup>2</sup> Shallow wells are a very important source of water in both urban and rural areas. Concurrently, sewerage networks are virtually non-existent, with only 8 functioning waste-water companies (PDALs) serving just two percent of the total population. Most urban households rely on hanging latrines, toilets with leach pits systems, and less frequently, septic tanks. Unfortunately, due to waste leaking from leach pits and improper septic waste disposal, much of the domestic waste ends up in the surface water and shallow ground water. The National Development Planning Agency (BAPPENAS) estimates that in urban cities like Jakarta, improper domestic waste disposal has rendered up to 70 percent of the groundwater unfit for drinking purposes.<sup>3</sup>

**The price paid for WASH services varies dramatically between Indonesian households with and without water connections.** According to focus groups, communities without networked services pay up to 30 to 40 times more for the same quantity of "refill" water (filtered water supplied in refillable jerry cans) as communities with networked services. The price is even higher for packaged bottled water.

## Status of WASH Suppliers

**The Indonesian market for household water provision is characterized by a significant divergence between urban and rural services, and a history of inadequate state investment, resulting in a vast number of people providing for themselves.** More than 50 percent of the population is still dependent on self-provision of water, predominantly through dug wells and bore wells. Perusahaan Daerah Air Minum, or PDAMs, are the local government-owned water supply companies responsible for water provision in urban and peri-urban areas. Only 36 percent of urban households have piped water connections.<sup>4</sup>

**PDAMs suffer from a multitude of challenges ranging from poor financial health to inadequate infrastructure and poor governance.** Water tariffs are highly politicized; local governments often set tariffs below cost recovery levels. The period from 2009 – 2015 was intended to be a transition period from a model where the majority of water infrastructure is funded by the central government, to one where local governments take the lead. Unfortunately, many local governments are still inclined to withdraw PDAM operating profits, rather than reinvesting in network maintenance and expansion. As a result, PDAMs struggle to cover their service areas and non-revenue water (leakage) averages 37 percent of total water provided. Also, due to the decentralization of water provision, many PDAMs struggle to achieve economies of scale, which creates additional difficulties with operational efficiency.

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<sup>2</sup> JMP 2012

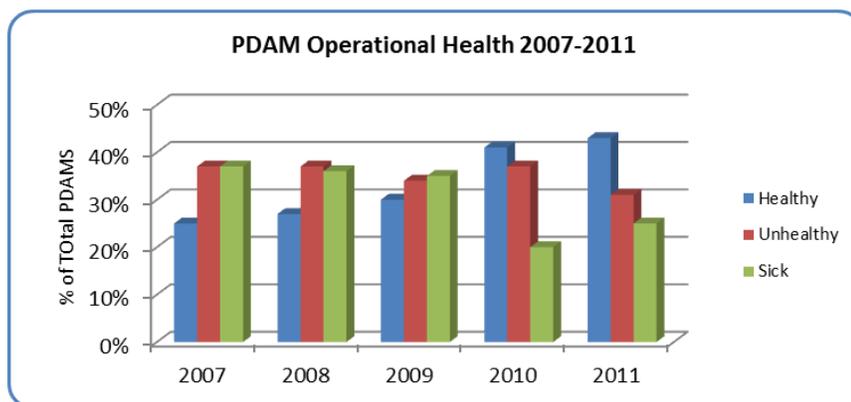
<sup>3</sup> [http://esa.un.org/iys/docs/san\\_lib\\_docs/Not%20a%20Private%20Matter%20Anymore.pdf](http://esa.un.org/iys/docs/san_lib_docs/Not%20a%20Private%20Matter%20Anymore.pdf)

<sup>4</sup> JMP 2012

According to the Association of Water Utilities (PERPAMSI), around 25 percent of all the PDAMs in the country have less than 5,000 connections, and more than half have less than 10,000 connections.<sup>5</sup>

**While PDAMs suffer from a multitude of challenges and performance varies dramatically between districts, there has been an overall improvement in the health of these utilities.** The Support Agency

for the Development of Drinking Water Supply Systems (BPPSPAM) regularly monitors the health of 350 PDAMs (90 percent of the total PDAMs) by evaluating key indicators for financial performance, quality of service, operations, and



human resource efficiency. Despite an increase in the number of new

Source: BPPSPAM, Audit Report 2011

PDAMS, most of which are unhealthy, the percentage of PDAMS characterized as sick or unhealthy declined from 73 percent to 57 percent between 2007 and 2011. Java has by far the highest percentage of healthy PDAMs at over 70 percent.

**In rural areas, the primary sources of water are dug wells and spring water, with piped service provided by community-based organizations (CBO).** The Government of Indonesia (GOI) has supported CBO-led water provision in rural areas, and with additional support from local governments, the World Bank Water and Sanitation Program (WSP) and other NGOs, up to 15,000 CBOs exist in rural Indonesian communities.<sup>6</sup> CBO water networks range in size from 20 to 7,000 households, with an average size of 260 households.

**Thanks in large part to the expansion of CBO water provision, rural access to improved water sources has improved more rapidly than urban access over the last 20 years. CBOs benefit from lower government interference, but still struggle with limited capacity and lack of financing to meet rural water demand.** Capacity building programs have greatly improved the technical capacity of many CBOs, and despite latent household demand for network access, difficulty accessing capital continues to constrain growth for even the most profitable CBOs.

**Historically, sanitation has been largely neglected in terms of central government policy, and local governments have struggled to provide waste water disposal networks and services.** Households and

<sup>5</sup> Indonesia Water Investment Roadmap 2011-2014, World Bank.

<sup>6</sup> <http://www.usaid.gov.au/countries/eastasia/indonesia/Documents/infrastructure-imp-doc-annexes-ipm.pdf>

communities have largely been left to obtain their own off-grid solutions. While the government supports community-based total sanitation, and private sanitation suppliers are prevalent, off-grid solutions are cumbersome in urban areas and households often lack access to finance for investments in sanitation.

## Efforts to Strengthen the WASH Sector

**The Government of Indonesia (GOI) is committed to the achievement of the Millennium Development Goals (MDG) for water and sanitation by 2015, and it is working to increase investment in the WASH sector.** As part of its 2010 – 2014 Medium-term Development Plan, the GOI has set ambitious water access targets. Approximately 56 million Indonesians must gain access to safe water between 2011 and 2014; 41 million through piped water and 15 million through non-piped sources. This goal will require an estimated total investment of US\$6.9 billion over the five-year period (an average of US\$ 1.38 billion per year), which represents a dramatic increase over the US\$ 0.27 billion per year spent during the previous plan.<sup>7</sup> According to the Ministry of Public Works' (Directorate Citpa Karya's) October 2011 strategy, to reach US\$ 6.9 billion in total investment, the central government will invest US\$ 4 billion and local governments, banks, and the private sector will invest US\$2.9 billion. Unfortunately, actual investments to date have lagged behind these ambitious goals, particularly among local governments.

**The GOI has undertaken a wide variety of initiatives through numerous agencies to improve access to WASH.** Government policy focuses on PDAM water provision in urban areas and CBO-led provision in rural areas. The Ministry of Public Works set up BPSPPAM to improve technology and management practices amongst PDAMs. The GOI has also offered local government-owned PDAMs debt write-offs and loan guarantees to facilitate commercial bank financing, although these initiatives are progressing slowly as a majority of the PDAMs struggle to meet all the conditions. GOI program PAMSIMAS targeted 5,000 villages from 2011 – 2014 for building CBO capacity, building water and sanitation infrastructure, and conducting sanitation marketing. The Sanitasi Total Berbasis Masyarakat (STBM) initiative promotes community-based total sanitation to achieve large-scale behavior change in 26 provinces and 6,500 villages.<sup>8</sup> From the 1970s to 2000s, the average annual government spending on sanitation was US\$ 0.02 per capita; however, by 2010 this had increased 25 times to US\$0.5 per capita. The Sanitation and Water for All global partnership estimates that sanitation spending needs to increase much further, to US\$6.30 per capita to achieve the MDG goal for sanitation.

**Working alongside the GOI and local WASH utilities, international development agencies have played a key role in strengthening the WASH sector through investment and innovation. Examples include:**

- [AusAID / SMEC Indonesia Infrastructure Initiative \(INDII\)](#) – INDII delivers multiple WASH-related programs in coordination with the GOI. The Water Hibah program has encouraged water

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<sup>7</sup> Indonesia Water Investment Roadmap 2011-2014, World Bank.

<http://water.worldbank.org/sites/water.worldbank.org/files/publication/WATER-Indonesia-Water-Investment-Roadmap-2011-2014.pdf>

<sup>8</sup> [http://stbm-indonesia.org/monev/index.php/pilar\\_1](http://stbm-indonesia.org/monev/index.php/pilar_1)

network expansion and local government investment, facilitating tens of thousands of new network connections by offering subsidies to PDAMs that connect poor households;

- [USAID / DAI Indonesia Urban Water, Sanitation and Hygiene \(IUWASH\)](#) – A core component of the IUWASH program is building the technical capacity of PDAMs and linking them with banks to enable household connection financing;
- WSP Second Generation Project – Delivers technical assistance and capacity building to CBOs and facilitates debt financing from banks;
- WSP Total Sanitation and Sanitation Marketing (TSSM) – Trains sanitation entrepreneurs and spurs the demand for sanitation in rural areas through sanitation marketing campaigns;
- Various Community-Led Total Sanitation Programs and Hygiene Awareness Programs – Cipta Cara Padu, Totalitas, Plan International, WatSan Action, and many other NGOs have conducted sanitation marketing campaigns.

## Microfinance for Improved Water and Sanitation Services

**The microfinance sector consists of a wide variety of institutions with diverse strengths and weaknesses.** State and commercial banks, state owned NBFIs, cooperatives, credit unions, venture capital companies, foundations, government anti-poverty programs, and informal rotating savings and credit associations (ROSCAS)<sup>9</sup> provide some form of microfinance services. Leaving aside the massive Bank Rakyat Indonesia (BRI); however, there are few large-scale providers of microfinance. There are more than 1,650 well-regulated Bank Perkreditan Rakyat (BPR, or People’s Credit Banks) with good local outreach, but limited geographical reach and smaller portfolio size.<sup>10</sup> Researchers identified only six BPRs with more than US\$53 million in assets, and the average BPR has between 2,000-3,000 loan clients. The less well-regulated cooperatives and credit unions are even smaller and more numerous.

**Collateral alternatives such as solidarity group guarantees are not yet used extensively by Indonesian microfinance providers, although MFIs are increasingly seeking to expand their services and lending methodologies to reach additional market segments.** Historically, banks and BPRs have focused on serving the top tier of the microfinance market, with cooperatives and ROSCAs providing limited services to the poorest. However, commercial banks, BPRs, and venture capital companies are increasingly taking up the group lending model to reach out to poorer segments within the economy.

**While some microfinance providers offer consumption and education products, Indonesian MFIs do not lend extensively for home improvement, and with a few exceptions do not offer customized WASH finance products.** The majority of Indonesian MFIs prioritize business lending for income-generating purposes. The concept of microfinance for water and sanitation is completely new in many areas.

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<sup>9</sup> Known as “Arisan” in Indonesia.

<sup>10</sup> The majority of BPR have less than US\$5.3 million in total assets.

**While examples of microfinance for WASH improvements are relatively rare in Indonesia, recent WASH finance programs offer important lessons.** Since 2007, DAI has collaborated with commercial banks and PDAMs under the ESP and IUWASH projects (referenced above) to offer microfinance loans to fund new household connections. Under the WSP TSSM project, sanitation entrepreneurs in East Java have partnered with local cooperatives to offer credit to new customers who are unable to pay upfront for toilet installation. The WSP Second Generation Project seeks to facilitate bank loans to finance CBO expansion. Researchers identified several key lessons from these programs:

- Pervasive contamination of shallow wells and limited access to piped water networks forces many Indonesians to rely on refill or bottled water, but people generally want to acquire deeper bore wells and network connections if financing is available;
- Among many PDAMs, the availability of new household connections is often constrained by a lack of primary network infrastructure and inadequate water sources;
- There is latent demand for sanitation improvements in urban and peri-urban areas, but community education and marketing is necessary for rural communities to take up sanitation products, even if favorable customer financing is available;
- Commercial financial institutions require additional technical assistance and/or incentives to initiate lending to CBOs; however, it appears that there is a substantial market for small medium enterprise (SME)-sized loans for CBO expansion.

## Conclusions and Recommendations

**There is a significant need to increase private sector investment in WASH services. Existing WASH initiatives provide a valuable base upon which to expand access to finance for WASH services:**

- Researchers estimated that 15 million urban households lack PDAM access. Thanks to efforts by the GOI, AusAID and others, PDAMs are expanding and improving their capacity to deliver water, and new customer financing is in demand;
- An estimated 8,400 CBOs serve two million households in Java alone, and rural CBOs are gaining capacity and need capital to finance service expansion;
- Researchers estimated that 13 million households in Java lack a sanitary toilet facility, and sanitation education is spurring demand for sanitation improvements.

**Market fragmentation and limited product diversity may slightly restrain microfinance uptake; however, Indonesian MFIs are moving downmarket and several have expressed interest in developing or expanding WASH finance portfolios.** The variety in financial institutions may align with the variety in household and community WASH needs. Different types of MFIs can specialize in different types of WASH finance according to their experience, interests, location, and strengths. Also, networks of financial institutions and apex actors, such as wholesale banks, can potentially disseminate WASH financial products and information across the fragmented market.

**Providing successful finance for WASH services will require building the capacity of MFIs to provide relevant products, as well as community education and awareness building.** Indonesia has a strong network of NGOs with necessary experience, particularly in Java and Sumatra.

**Microfinance cannot address all of the WASH challenges in Indonesia; however, price estimates suggest that a variety of household WASH solutions are affordable for poor Indonesians if up-front financing is available.** Networked and off-grid solutions that meet obvious market needs include:

*Sample Products and Benchmark Prices*

PRODUCT OPTION	APPROXIMATE COST (US\$)
Pour flush toilet with septic tank	215-268
Septic tank	107-161
Deepening bore well	80-107
Jet pump	194-269
Water network connection	80-215

Note: The poverty line in Indonesia is US\$22 of expenditures per month.

**Financing the expansion of well-run CBOs can increase WASH services in underserved rural areas.** The existence of a large number of CBOs and the absence of any other institutional set-up for provision of water in rural areas offers a unique market for financing. CBOs need financing ranging from US\$10,000-30,000 for improving infrastructure and expanding water provision. While many CBOs suffer from poor technical capacity, pilot CBO support programs show positive results, and INDII plans to provide technical support to an additional 625 CBOs over the next three to four years. As a result of the technical support from INDII and others, these CBOs could become excellent candidates for commercial financing.

**WASH needs are significant across Indonesia; however, areas with high population density and strong presence of WASH NGOs, MFIs, and WASH service providers are best suited for expansion of finance for WASH services.** Provinces such as East Java, West Java and Banten, amongst others, meet these criteria and are primed for the expansion of WASH finance due to earlier WASH development programs.