WSP Sanitation Global Practice Team

Financing Household On-Site Sanitation for the Poor

April 2011

INTRODUCTION

Forty percent of the world's people do not have access to a basic level of sanitation; one in five of us practices open defecation.¹ This crisis in sanitation has clear consequences. Diarrhea kills more than 1.5 million children each year, and 88 percent of these deaths are attributed to fecal contamination from inadequate sanitation, hygiene, and water supply.² The cost of these problems is high in economic as well as human terms. In a series of studies, the Water and Sanitation Program (WSP) estimated that inadequate sanitation costs the economies of four Southeast Asian countries the equivalent of approximately 2 percent of their GDP³; these results echo similar findings elsewhere about both the costs and benefits of sanitation.⁴

Sanitation solutions are not cheap for the poor, who make up the vast majority of those without sanitation. Like housing, on-site sanitation is often viewed as a private good and the basic responsibility of the beneficiaries themselves. Yet sector professionals have long argued that some public finance of sanitation can be justified by its inherent externalities: construction and use of a family latrine protects others at least as much as it reduces disease transmission within the family. However, the large number of poor households without sanitation makes it difficult for strained government budgets to contribute a large fraction of the cost. In addition, economists and sector professionals are generally skeptical of subsidy schemes, having seen how inefficient and counterproductive some poorly designed programs can be.

KEY MESSAGES

- Public financing for "software" has a significant role to play in creating demand for improved sanitation and changing community and household behaviors. However, the amount and way such public support is financed can significantly affect the performance of sanitation projects and their impact.
- Project designers should look beyond the semantics of simplistic "subsidy vs. no subsidy" debates to define an appropriate level and form of public investment in sanitation. The design of the financing approach at the outset of on-site sanitation programs is too often not given sufficient critical thinking. Answers to basic financial questions—"Who pays for what, when, and how?"—can determine the extent to which projects can replicate, expand sanitation, be sustainable, and meet household needs.
- Well-targeted hardware subsidies can provide a critical safety net for the poor. Such subsidies should not be used as a substitute for hardware investments by households. Hardware subsidies that were most effective were provided after demand was created—and especially after outputs and/or outcomes were achieved.



¹ UNICEF/WHO JMP (Joint Monitoring Programme for Water Supply and Sanitation). 2008. *Progress on Drinking Water and Sanitation: Special Focus on Sanitation.* Geneva: WHO.

² A. Lopez et al. 2006. Global Burden of Disease and Risk Factors. Washington, DC: The World Bank, Disease Control Priorities Project.

³ See the reports available through the WSP Economic Impacts of Sanitation Initiative website at www.wsp.org/wsp/content/economic-impacts-sanitation.

⁴ G. Hutton and L. Haller. 2004. Evaluation of the Costs and Benefits of Water and Sanitation Improvements at the Global Level. WHO/SDE/WSH Report 04.04. Geneva: WHO. Additional background information is derived from roughly 30 country reports, both published and unpublished, completed between 2004 and 2007 and made available to the authors by Bjorn Larsen.

Table 1. Approaches Used in the Six Case Studies						
Country	Program Name	Approach				
Bangladesh	DISHARI	Community-Led Total Sanitation (CLTS), reward for outcome and upfront subsidy for poorest				
Ecuador	PRAGUAS	Hardware subsidy to users in rural areas				
Maharashtra (India)	Total Sanitation Campaign (TSC)	Community-Led Total Sanitation (CLTS), sanitation-linked reward for outcome and hardware subsidy for poorest after success				
Mozambique	Improved Latrines Program (PLM)	Hardware subsidy to providers in urban areas				
Senegal	PAQPUD	Hardware subsidy to users in urban areas				
Vietnam	Sanitation Revolving Fund (SRF)	Subsidized revolving loan fund for hardware in urban areas				

The challenges of finance—the practical decisions about who pays how much for what, when, and how—thus lie at the heart of the world's efforts to promote health, dignity, and a cleaner environment through sanitation. In 2010, WSP and the World Bank conducted a study to improve understanding of the financing of on-site sanitation at the household level through careful analysis of practical field experiences in a wide range of programs. This Research Brief summarizes findings from the full report, available online.⁵

PURPOSE AND METHODOLOGY

Many people without sanitation live in rural areas or on the fringe of cities beyond the reach of sewerage networks. The first step up the "sanitation ladder" for those without access will be on-site sanitation. The institutional and financial structures of sewerage and on-site sanitation are so different that it was decided to focus first on the issue of basic on-site sanitation.

The study formulated a set of basic questions to help identify the best-performing approaches and the relevant factors and issues to consider in designing a sanitation financing strategy. These included:

- How much does provision of access to on-site sanitation cost once all costs (hardware and software) are accounted for?
- Do the type and scale of sanitation subsidy affect provision and uptake? How?
- How can the public sector most effectively support household investment in on-site sanitation?
- Should support be via investment in demand stimulation, subsidies to households or suppliers, credit schemes, or by other means?
- Should hardware subsidies be provided or should public spending focus on promoting demand or supporting the supply side of the market? Where hardware subsidies are adopted, what is

the best way to ensure that they reach their intended recipients and are sustainable and scalable?

• What innovative mechanisms (such as credit or revolving funds) can be used to promote household sanitation financing?

The study reviewed alternative financing approaches from programs representing a range of approaches, from those that combined support for software activities with limited targeted hardware subsidies for poor households to approaches with a relatively high hardware subsidy (Table 1). The diversity in financing approaches was also reflected in different approaches to program design, with programs ranging from community-led programs for investment in basic sanitation to programs providing a well-defined set of improved sanitation solutions.

In addition to summarizing the mechanics of each approach, all projects were evaluated against a common set of criteria:

- *Impact on sustainable access to services:* Did the financial approach leverage increased sanitation access?
- **Costs:** Are the costs of the resulting sanitation facilities reasonable and affordable to the beneficiaries?
- *Effectiveness of the use of public funds:* Were public funds used in a way that maximized impact?
- Poverty targeting: Did the program seek to target the poor and was the program effective at doing so?
- *Financial sustainability:* Could the financial approach be sustained over time without external support?
- Scalability: Could the financial approach be scaled up to cover those who are not yet covered in the country at a reasonable cost?

Two principles guided the data-collection phase. First, all costs for both hardware (including the initial capital expenditure and the estimated ongoing maintenance costs) and software (such as demand promotion and media campaigns) were counted. Second, all sources of funds (governments, the households themselves, and international transfers from, for example, NGOs and donors) were included.

⁵ The full report is available at www.wsp.org/wsp/sites/wsp.org/files/publications/ financing_analysis.pdf.

ANALYSIS

Key characteristics of the financing approaches used in the projects studied are represented in Figure 1. The horizontal axis shows the level of public sector finance as a proportion of the initial hardware and software costs of sanitation, whereas the vertical axis reflects the percentage of such public support that was spent on hardware subsidies. Although there are important differences, the financing approaches broadly fit into three groups:

At one end of the spectrum, **Vietnam, Bangladesh,** and **Maharashtra** primarily relied on households to invest in their own facilities. Public support was provided to promote and create demand for sanitation. Hardware subsidies were fairly limited overall, although targeted subsidies were given to poor households to address affordability issues in Bangladesh and Maharashtra.

At the other end of the spectrum, **Senegal** and **Ecuador** provided substantial public support, primarily in the form of hardware subsidies.

Mozambique was somewhere in the middle, relying on partial hardware subsidies provided to local suppliers to build improved latrines.⁶

The average costs of providing household sanitation were computed by taking into account all costs (including software) and all sources of finance. Figure 2 shows the average initial costs of the sanitation "package" that households accessed in each project and breaks down the initial hardware costs between the hardware

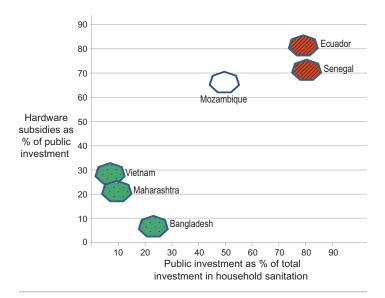


Figure 1: Characterizing Financing Approaches to On-Site Sanitation

⁶ Data for Mozambique were estimated for the situation in the late 1990s (the "heyday" of the program), given that actual data were not available and could no longer be collected for that period.

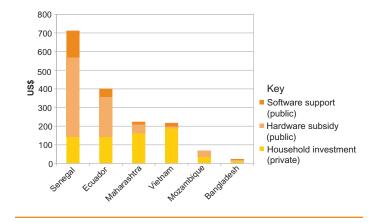


Figure 2: Total Initial Costs per Household Sanitation

Facility (Actual US\$ Exchange Rate)

subsidy component and the household investment component. The figure shows substantial differences in the initial costs per household for accessing sanitation, from more than US\$700 in Senegal⁷ to US\$24 dollars in Bangladesh. These substantial cost variations largely reflect the difference in levels of service provided by different projects. The choice of financing approach also appears to have a substantial impact on costs. On the whole, the higher the level of service, the higher public subsidies are as a percentage of the total cost of sanitation adoption. The software support costs per household varied considerably. Software costs as a percentage of total initial costs varied from 29 percent in Bangladesh to 7 percent in Maharashtra. Finally, when compared to household incomes, hardware costs ranged from 2.7 percent of average income in Bangladesh to just over 30 percent of income for below-poverty-level (BPL) household in Vietnam. These projects and their financing approaches are presented in Table 2 in the increasing percentage of the total costs of sanitation adoption coming from public funds.

Table 2 provides a summary evaluation of how the different case studies performed with respect to the six criteria: impact on sustainable access to services, costs, effectiveness in the use of public funds, poverty targeting, financial sustainability, and scalability.

Some approaches, such as those in **Maharashtra** and **Bangladesh**, did very well on all parameters and appeared highly replicable. They are applicable in certain settings, such as rural settings in South Asia and probably on other continents as well, but might be less successful in areas with less community cohesion and higher expectations in terms of service levels. The approach used in Maharashtra, where households receive a subsidy to cover a basic level of service and are encouraged to invest in higher service levels

⁷ For Senegal, the average costs were calculated by dividing the total costs of providing on-site sanitation facilities by the number of households reached, to reflect the fact that households served received 1.56 facilities on average.

Project context level of service, population that adopted sanitation during the project, study period	Financing approach
Vietnam: Sanitation Revolving Fund (SRF) • Urban areas • Mostly bathrooms and septic tanks • 194,000 people • 2001 to 2008	 Public funds = 7% of total costs of sanitation adoption Software support for sanitation promotion and hygiene education Facilitated access to credit via sanitation revolving funds Subsidized interest rates on loans for hardware construction (accounting for about 3% of hardware costs)
Maharashtra (India): Total Sanitation Campaign (TSC) • Rural areas • Community-Led Total Sanitation (CLTS) approaches • Improved latrines • 21,200,000 people • July 2000 to November 2008	 Public funds = 9% of total costs of sanitation adoption Software support for community mobilization, including outcome-based financial rewards to villages reaching Open Defecation Free (ODF) status to be spent on sanitation investments Outcome-based hardware subsidies for below-poverty-line households (covering about 22% of hardware costs for beneficiaries) Access to credit in some districts only
Bangladesh: DISHARI • Rural areas • Based on Community-Led Total Sanitation • Basic latrines • 1,631,000 people • 2004 to 2008	 Public funds = 31% of total costs of sanitation adoption Software support for community mobilization, sanitation promotion, and local government strengthening, including outcome-based financial rewards to villages that are 100% sanitized. Rewards come with no strings attached and do not necessarily need to be spent on sanitation. Up-front in-kind hardware subsidies targeted to the poorest (covering about 42% of hardware costs for beneficiaries)
Mozambique: Improved Latrines Program (PLM) Urban areas Improved latrines 1,888,000 people 1980 to 2007	 Public funds = 58% of total costs of sanitation adoption (estimated) Software support for sanitation promotion and establishment of local workshops building slabs and latrines Output-based subsidies to local sanitation providers for each slab or latrine sold (intended to cover 40% to 60% of hardware costs)
Ecuador: PRAGUAS • Rural areas • Sanitation units (toilet, septic tank, sink, shower) • 143,000 people • 2001 to 2006	 Public funds = 85% of total costs of sanitation adoption Software support to strengthen municipalities to work in sanitation, for technical designs and monitoring Up-front fixed hardware subsidies (covering about 60% of hardware costs) provided to communities
 Senegal: PAQPUD Urban areas Range of options: improved latrines to septic tanks 411,000 people 2002 to 2005 (not including extensions via GPOBA) 	 Public funds = 89% of total costs of sanitation adoption Software support for sanitation promotion, including hygiene promotion and education, community organization, technical support Output-based hardware subsidies to local sanitation providers for each sanitation solution built (covering about 75% of hardware costs) Limited schemes to facilitate access to credit

if they so wish, could potentially be adapted to scenarios where service expectations are high. The mechanisms for targeting subsidies in Maharashtra could probably be improved, however, as they suffer from a relatively high exclusion error due to disputed criteria for poverty targeting.

The sanitation revolving fund approach in **Vietnam** was very effective at leveraging household investments and proved highly sustainable and scalable. A potential drawback is that the most indigent are excluded, so they might need to receive direct support, as was done through several benefit schemes in Vietnam. This approach, based on microcredit, could be replicated in densely populated urban areas on the condition that a strong microfinance institution can be identified and that the credit scheme does not compete with high subsidies available to all. By contrast, the financing approach in **Senegal** does not fare well when measured against these criteria, even though the project as a whole has been successful at putting on-site sanitation on the map in Senegal and in neighboring countries. The adopted approach has led to high costs that are not affordable to the local population without substantial external support. As a result, the financial sustainability of the scheme is very fragile. Scaling up such an approach to reach the country's MDGs would simply be beyond Senegal's means. Elements of this approach could nevertheless be adopted in other settings, such as the provision of output-based subsidies to local producers, which was practiced in **Mozambique** as well.

Finally, the approach in **Ecuador** worked well, but given the relative wealth of the country it might prove too expensive to replicate in countries with more limited public funds.

Table 3. Case Stu	dies: Summary Eval					
Criteria	Bangladesh	Ecuador	Maharashtra	Mozambique	Senegal	Vietnam
Impact on sustainable access	Substantial and rapid increase in coverage, mostly sustained	Substantial increases in coverage with good evidence of use	Very rapid increases in coverage (with some cases of relapse)	Rapid increases in coverage only when software support was also provided	Speed of coverage increased when required household contribution was reduced	Rapid extension of coverage
Costs	Basic sanitation costs reasonable when compared to household income (3% to 4%)	Comprehensive sanitation solutions: costly but meet existing demand	Improved sanitation, households invest based on what they can afford	Affordable basic sanitation solutions, reduced demand when incomes grow	Comprehensive sanitation solutions but expensive by both national and international standards	Costs moderate compared to other programs but high when compared to household incomes
Effectiveness in use of public funds	High leverage	Low leverage	High leverage	Medium leverage	Low leverage	Very high leverage
Poverty targeting	Effective targeting through community involvement	Geographical targeting reached intended recipients	Means-tested targeting effective although some are excluded	Self-selection via level of service, with limited inclusion error	Geographical targeting reached intended recipients	Effective targeting, although lowest income excluded
Financial sustainability	Sustainable as long as public sector continues to contribute	Highly dependent on external financing	Low demands on external public funds	Dependent on external financing (with a marked decline when subsidies drop)	Highly dependent on external financing	Financially sustainable: initial public funds have revolved many times
Scalability	Scale-up achievable at a reasonable cost	Scale-up could be achieved given relatively high national income	Has been scaled up at federal level (coverage still needs to improve)	Was scaled up in major urban centers but further scale-up unlikely	Too expensive to scale up nationwide	Scale-up has been achieved in country
Summary evaluation	Efficient use of public funds for rural settings with strong demand for low-cost solutions	Only useful for countries willing and able to fund high levels of service	Efficient use of public funds, which are provided on an outcome basis	Efficient use of public funds with simple and effective targeting	Limited use: high demand on public funds and limited leverage	Very efficient use of limited public funds but may be hard to replicate

Table 3 presents a summary of the evaluation based on the six criteria described above.

KEY LESSONS

The study revealed important lessons about on-site sanitation financing.

Public funding can trigger significantly increased access to household sanitation. Public investments of varying forms enabled an absolute increase in the fraction of the target population gaining access to sanitation, which varied between 20 and 70 percent. Each of the programs enabled significant numbers of people to improve their sanitation—from the largest (more than 21 million gained access in Maharashtra) to the smallest (more than 140,000 in Ecuador). Although sanitation projects have earned a reputation as difficult and often ineffective, there is compelling evidence that government investment can yield results.

The most relevant question to ask is not "Are subsidies good or bad?" but rather "How best can we invest public funds?" Although much has been written on the dangers of sanitation subsidies, it is hard to imagine a sanitation program that does not involve some public or external investment, if only to share information or stimulate demand. Given the wide spectrum of options, from a minimal investment in start-up of a revolving fund, to significant community mobilization and demand stimulation, all the way to hardware subsidies of up to 75 percent of capital costs in addition to community mobilization, the choice is not "Subsidy or no subsidy?" but, "What form and level of public funding makes sense in a specific context?"

The different financing strategies adopted had a profound influence on equity, scale, sustainability, levels of service, and costs. No project represented a "silver bullet" approach that can be replicated globally: different models will be more appropriate based on specific project objectives. One indicator of the effectiveness of public finance use is the number of households gaining basic access per US\$1,000 of public funding. Like most indicators, this ration cannot tell the whole story by itself because both the levels of service offered and the costs varied between projects. Nevertheless, it is revealing that in rural Bangladesh, US\$1,000 of public investments resulted in improved sanitation for 135 households, while in Senegal the same public funding only served 1.6 households with improved sanitation. Households are key investors in on-site sanitation and careful project design and implementation can maximize their involvement, satisfaction, and financial investment. All of the reviewed projects assumed that the poor can contribute to their own sanitation facilities, and in several cases they paid the bulk of the hardware costs. Poor households can make substantial sanitation investments (up to 25 or 30 percent of their annual income, as in Vietnam) if they see the need and potential benefits. Leverage of household investment also varied. In Vietnam, the household contribution to sanitation was 20 times greater than the public investment, whereas in three other projects public investment exceeded the household investment. The Vietnam example also shows that access to household credit (and thus the opportunity to spread the investment over time) can be an effective mechanism to make basic sanitation affordable.

Hardware subsidies of some form played a critical role in all six case studies. Subsidies varied from a subsidized interest rate yielding US\$6 per septic tank in Vietnam to subsidies between US\$200 and US\$1,000 in Senegal, depending on the technical options selected. On the one hand, subsidies targeted within communities to the very poorest have enabled the achievement of Open Defecation Free (ODF) status by communities in the DISHARI project in Bangladesh; on the other hand, when a high proportion of substantial hardware costs are subsidized, as in Senegal and Ecuador, a higher level of service is achieved, but this might limit the potential scale of interventions to a relatively limited set of people given a restricted budget.

Subsidy targeting methods must be tailored to country circumstances. There was a range of targeting methods for hardware subsidies, including geographic targeting, means-tested targeting, community-based targeting, and self-selection. Communitybased targeting (in which the community itself manages the identification and support of its poorest members) and self-selection (in which only in-kind support for the most basic sanitation is offered, leading to self-selection among potential subsidy applicants) appear to be more effective than means-tested systems, which can be costly and generate perverse incentives. Community-based selection appears to be a more flexible, better targeted, and probably less costly way to identify poor households, but it requires the right type of community mobilization and solidarity. Although no precise data were available to confirm whether self-selection is an effective targeting approach, this method appeared to be the cheapest and easiest to implement. This would seem most appropriate for those countries that have limited means to introduce either means-tested or community-based targeting approaches but seek to reach a large population through a basic sanitation program (such as in Mozambique, where improved latrines are subsidized).

The provision of hardware subsidies on an output basis rather than an input basis can be effective at stimulating demand and leveraging private investment. Several projects used an outputbased method to deliver subsidies (e.g., Mozambique and Maharashtra). Providing a subsidy on an output basis can ensure that the subsidized activity is actually delivered. It can also give incentives to producers to reduce costs and to serve areas that they might otherwise not consider. From a donor perspective, output-based subsidies can mitigate some of the risk of low uptake of a subsidy program: If there is no demand (if the product is not appropriate, if it is incorrectly priced, etc.), there is no output and therefore no payment. The provision of financial rewards based on outcomes acted as a strong motivator for villages in Bangladesh and Maharashtra and helped mobilize energies around the achievement of clear goals.

All of the projects included a significant publicly funded software component (sanitation and hygiene promotion and community mobilization). The Maharashtra and Bangladesh projects invested heavily in software (with targeted hardware subsidies for the poorest) and had some of the highest leverage and basicaccess-to-investment ratios of all projects studied. The Mozambique project was most effective when the government also financed community animators for demand promotion. The decline of the program was closely linked to the withdrawal of such software support following decentralization.

IMPLICATIONS FOR PRACTITIONERS

The findings from this study present strong evidence to support appropriate public investment in sanitation. Given the range of possible approaches to financing sanitation (Table 4), the challenge is to choose an approach that matches the local context. Going forward, some points to consider include:

Early planning and careful design of financial arrangements for sanitation at the start can go a long way toward promoting project realism and sustainability. Financial arrangements probably shape the success or failure of sanitation projects more than any other factor. Answers to the basic questions of finance-"Who pays for what, when, and how?"-determine the extent to which projects can replicate, expand sanitation, and meet household needs. Projects with financial designs that match local needs and capacities can take off, while projects with poor or unrealistic financial designs will stall at the end of the project cycle. Sanitation finance is thus a key element of project design, yet one that often lags because of the paucity of information, options, and sound analysis rooted in local conditions. In most urban water supply and sanitation (WSS) projects, for example, there has inevitably been some experience with water tariffs, and often some experience with sewer connection charges. With some important exceptions, utility

Table 4. Potential Financing Approaches for On-Site Sanitation						
Financing approach	Potential advantages	Potential risks				
Financing sources: Purely private (hous	seholds)					
Self-financing: Households invest in their own facilities and pay for sludge- emptying services—no subsidy	 Majority of latrines are currently financed privately this way Reflects existing demand No use of public funds 	 Risk of poor quality infrastructure Does not fully consider environmental impact Suppliers may not exist Unaffordable for the very poor 				
Sanitation surcharge: Cross-subsidy to finance on-site sanitation	• Use of cross-subsidies	 Available funds may be limited due to affordability constraints 				
Financing sources: Combination of priv	vate (household) and public funds (taxpayer monie	es and external sources)				
Loans to households, including microcredit for sanitation or home improvement (e.g., revolving funds)	 Particularly useful in cohesive communities aiming at 100% sanitation Limits initial outlay of public funds Subsidy linked to outcome 	 Demand for sanitation needs to be stimulated Requires a solid institution to manage funds May be unaffordable for the very poor 				
Software support, with low/no subsidy for hardware	 Focuses subsidies on creating demand Relies on community cohesion/ solidarity 	 Sustainability at risk once the initial attention / champion or other motivating factor disappears 				
Loans to private-sector providers	 Lift constraints for small scale independent providers (SSIPs) to expand their services 	 Services may not reach the very poor Not sufficient demand to keep the business running if not combined with hygiene & sanitation promotion 				
Non-financial support to providers (training, demand creation)	 Boosts private-sector development so that supply can meet demand for sanitation facilities 	Services may not reach the very poor				
Output-based aid: Grants to households or SSIPs based on outputs or outcomes	 Subsidy linked to actual outputs delivered 	 Requires private sector prefinancing, which may not be forthcoming 				
Partial hardware subsidy: Users• Enhances ownership of facilitycontribute in kind or in cash• Improves affordability		 May be unaffordable for the very poor May be an unsustainable drain on resources 				
Financing source: Purely public (taxpay	ver monies and external sources)					
Full subsidy: Households receive facilities as a gift	• Removes affordability constraint for the very poor (if they capture the subsidy)	Can crowd out household resourcesNo demand test, so facilities often not used				

or government policies promoting or financing on-site sanitation are often nonexistent or, at best, ad hoc. In rural areas, the lack of documented examples and options has until now often limited the scope to "what we've always done."

It is important to monitor financial approaches during implementation. Good real-time data is needed to help governments improve their sanitation programs and financing approaches and learn from experience. This means collecting basic data on the costs of promotion, the costs of hardware subsidies, the contributions made by households, and so on. Building in such data collection and analysis from the outset will improve project monitoring and the supervision of these crucial elements of implementation during the project's lifetime.

Operational staff must look beyond the semantics of simplistic "subsidy vs. no subsidy" debates to define an appropriate **level and form of public investment in sanitation.** Many sector specialists are frustrated after decades of unrealistic, poorly designed and administered subsidy programs. They have noted that such programs are unsustainable, and have the perverse effect of stifling the development of real sanitation markets for the poor, as both suppliers and consumers waited for the next round of subsidies before investing. This frustration has recently been expressed by some who have taken a simplistic "no subsidy" position, arguing from the correct observation that hardware subsidies can sometimes limit sustainability to the invalid conclusion that hardware subsidies are always unjustified and counterproductive.

This study showed that a wide spectrum of finance arrangements has been used with varying degrees of success. Experience teaches that sanitation, like other goods with significant externalities, does not "take care of itself," especially among the poor. The study makes a strong argument for the benefits of appropriate public investment in sanitation. The challenge is to define appropriate approaches, shares, and mechanisms to finance sanitation for the poor that match the specific local context.

-By Sophie Trémolet with Pete Kolsky and Eddy Perez

Acknowledgements

The following people peer-reviewed the methodological approach underlying the report and/or peer reviewed the original study: Oscar Alvarado (World Bank), Isabel Blackett (WSP), Ousseynou Diop (WSP), Barbara Evans (independent consultant), Vivien Foster (World Bank), Jonathan Halpern (World Bank), Peter

Hawkins (WSP), Guy Hutton (WSP), Bill Kingdom (World Bank), Andreas Knapp (UNICEF), Yogita Mumssem (World Bank), Jan-Willem Rosenboom (Bill and Melinda Gates Foundation), David Schaub-Jones (Building Partnerships for Development), Maria-Angelica Sotomayor (World Bank), Caroline Van den Berg (World Bank), and Almud Weitz (WSP). The following authors contributed the research and writing for the country case studies: Shafiul Azam Ahmed (Bangladesh), Patricio Arrata, ICA Consultores (Ecuador), Chimère Diop and Ousseynou Guène (Senegal), Alan Malina (Mozambique), Rajiv Raman (Maharashtra), and Cu Thuy and Mai Van Huyen (Vietnam).

Full Report

See Financing On-Site Sanitation for the Poor: A Six Country Comparative Review and Analysis (WSP 2010), by Sophie Trémolet with Pete Kolsky and Eddy Perez

www.wsp.org/wsp/sites/wsp.org/files/ publications/financing_analysis.pdf

Additional Reading

Sanitation Finance in Rural Cambodia: Review and Recommendations (WSP 2010), by Andy Robinson

www.wsscc.org/sites/default/files/ publications/wsp_adb_sanitation_finance_ rural_cambodia_2010.pdf

Output-Based Aid and Sustainable Sanitation (WSP 2010), by Sophie Trémolet and Barbara Evans www.wsp.org/wsp/sites/wsp.org/files/ publications/WSP_OBA_sanitation.pdf

Output-Based Aid and Sustainable Sanitation (WSP 2010), by Sophie Trémolet and Barbara Evans www.wsp.org/wsp/sites/wsp.org/files/ publications/WSP_OBA_sanitation.pdf

Contact Us

For more information please visit www.wsp.org or email Eddy Perez at wsp@worldbank.org.

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.

The findings, interpretations, and conclusions expressed herein are entirely those of the author and should not be attributed to the World Bank or its affiliated organizations, or to members of the Board of Executive Directors of the World Bank or the governments they represent.



