WATER AND SANITATION PROGRAM: **WORKING PAPER**

Scaling Up Rural Sanitation

Identifying the Potential for Results-Based Financing for Sanitation

Sophie Trémolet

November 2011

wsp water and sanitation program

The Water and Sanitation Program is a multi-donor partnership administered by the World Bank to support poor people in obtaining affordable, safe, and sustainable access to water and sanitation services.

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By Sophie Trémolet

Today, 2.6 billion people live without access to improved sanitation. Of these, 75 percent live in rural communities. To address this challenge, WSP is working with governments and local private sectors to build capacity and strengthen performance monitoring, policy, financing, and other components needed to develop and institutionalize large scale, sustainable rural sanitation programs. With a focus on building a rigorous evidence base to support replication, WSP combines Community-Led Total Sanitation, behavior change communication, and sanitation marketing to generate sanitation demand and strengthen the supply of sanitation products and services, leading to improved health for people in rural areas. For more information, please visit www.wsp.org/scalingupsanitation.

This Working Paper is one in a series of knowledge products designed to showcase project findings, assessments, and lessons learned through WSP's Scaling Up Rural Sanitation initiative. This paper is conceived as a work in progress to encourage the exchange of ideas about development issues. For more information please email Sophie Trémolet at wsp@worldbank.org or visit www.wsp.org.

This work benefited from the support of the Bill & Melinda Gates Foundation. The present report was initially written as a background note for a workshop on applying Results-Based Financing (RBF) to Sanitation, which took place at the Department for International Development's headquarters in April 2011, with support from the UK Department for International Development funded SHARE research program consortium. The workshop brought together funding agencies and sector practitioners to discuss the applicability of these mechanisms to the sanitation sector. Workshop participants found that RBF instruments held great potential for improving the effectiveness and targeting of public spending in the sector but also raised a number of practical issues with respect to its application.

Sophie Trémolet is a finance specialist in the water and sanitation sector. She is currently working on developing innovative financing mechanisms for sanitation. This paper builds on earlier thinking undertaken for WSP (see *Output-Based Aid for Sustainable Sanitation* and *Financing On-Site Sanitation for the Poor: A Six-Country Comparative Review and Analysis,* both available at www.wsp.org/scalingupsanitation).

The SHARE consortium aims to accelerate progress on sanitation and hygiene in developing countries by generating rigorous and relevant research, and ensuring new and existing solutions are adopted at scale. Funded by the UK Department for International Development, it is led by the London School of Hygiene and Tropical Medicine. Its other partners are the International Centre for Diarrhoeal Disease Research, Bangladesh (ICDDR,B), International Institute for Environment and Development (IIED), Shack/Slum Dwellers International, and WaterAid. For more information visit www.shareresearch.org.

SANITATION FOR ALL
THE DRIVE TO 2015

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Contents

Abbreviations and Acronyms

AMC	Advanced market commitments
CBO	Community-based organization
CCT	Conditional cash transfer
CGD	Center for Global Development
CLTS	Community-Led Total Sanitation
COD	Cash on delivery
DFID	Department for International Development
GPOBA	Global Partnership for Output Based Aid
GSF	Global Sanitation Fund
HH	Household
HRITF	Health Results Innovation Trust Fund
IEC	Information Education Communication
IHP+	International Health Partnership
IWG	Interagency Working Group
JMP	Joint Monitoring Programme
MDG	Millennium Development Goals
NGO	Non-governmental organization
NGP	Nirmal Gram Puraskar
OBA	Output-based aid
PAQPUD	Programme d'Assainissement Autonome des Quartiers Périurbains de Dakar
RBA	Results-based aid
RBF	Results-based financing
TSC	Total Sanitation Campaign
WSP	Water and Sanitation Program
WSSCC	Water Supply and Sanitation Collaborative Council

Introduction

Results-Based Financing (RBF) refers to a broad family of financial instruments. With RBF, public funding is provided only if pre-specified results have been achieved. Its use in the sanitation sector has so far been limited, as opposed to in other sectors such as health or education.

This working paper aims to identify practical ideas for advancing the use of innovative financing mechanisms focused on results and performance, with a view to supporting the delivery of sustainable sanitation services. To this end, we review:

- The rationale for examining RBF instruments for sanitation;
- Current issues with sanitation, where "misaligned incentives" mean that inadequate services are being provided or demanded;
- How public funding, if allocated based on results, could help with realigning incentives; and
- Common issues and challenges with the design of RBF instruments.

Results-based financing can mean different things to different people. There are no commonly agreed-upon definitions and international agencies use various terms to refer to similar concepts or instruments. For example, the Department for International Development (DFID)[1] distinguishes between results-based aid (RBA) and results-based financing (RBF) according to their funding source and the contracting arrangements.

For the purpose of this working paper, all of these instruments are referred to as RBF. This paper distinguishes between those instruments that are used at macro level—that is, the contract is between a donor and a government or subnational entity—and instruments used at a micro level—that is, either channeling financing on the supply side or on the demand side (through, for example, a private operator, an NGO, or a household).

Table 1 gives an overview of the range of instruments that are potentially applicable to the sanitation sector.

TABLE 1: POTENTIAL RESULTS-BASED FINANCING INSTRUMENTS APPLICABLE TO SANITATION

Level	Potential Results-Based Financing (RBF) Instruments
Macro level	National level: Cash on delivery (COD) aid
	Local level: Rewards to communities or local governments, performance-based interfiscal transfers
Supply-side	Output-based aid: Support for incumbent operator or small-scale providers
	Advanced market commitments (AMC) for research and innovation
Demand-side	Conditional cash transfers to households
	Targeted subsidies, voucher schemes
	Individual rewards
Research and support	Results-based research grants
	Awards and international competitions

Source: Author's elaboration based on Pearson 2011 and interview with Paolo Craviolatti, DFID.

[1] DFID is a donor that has been leading the way with respect to the development and promotion and results-based financing instruments.

I. Results-Based Financing for Sanitation: Making the Case

KEY POINTS

- Traditional financing has not been sufficient in advancing sanitation goals.
- A key assumption in using RBF for sanitation is that public financing can help realign incentives in sanitation markets and foster more efficient and equitable service delivery.
- A second assumption is that payments for performance can foster improved and more cost-efficient service delivery and better pro-poor targeting.

The case for allocating public funding to support the development and sustainable provision of sanitation services is strong. Sanitation is a basic service with substantial positive impacts on both health and the environment, which in turn generates benefits for the economy as a whole.

Yet traditional financing for sanitation is not very effective and is typically insufficient.

There is typically a lack of clarity about which sanitation sector actors should be financed and how. This is often due to the following issues:

- Fragmented responsibilities for sector supervision;
- Fragmented responsibilities for service delivery;
- Weak operators (both financially and operationally); and
- Lack of financing channels for traditional funders (such as international donors or governments) to transfer funding *en masse* to those who need it most, such as households or small-scale entrepreneurs.

This is coupled with a lack of clarity on what available funds should be used for, due to the following commonly encountered issues:

- In many countries, funds have traditionally been spent on hardware subsidies that can result in "wasted" investments. This is changing, with an increased emphasis on software spending, but the efficiency of these software "investments" has yet to be adequately tracked.
- Funds are often misallocated throughout the sanitation value chain, with "too much" funding allocated to sewers and wastewater treatment rather than to improving basic access, for example.
- Funds are usually provided on an "input basis," meaning that that there are limited incentives to reduce the costs of providing services.
- Although households are supposed to be the main investors in on-site sanitation, they get limited public support for their investment.

As a result, financing allocated to the sector has so far been limited. This is in part because the sanitation sector needs to demonstrate the effectiveness of how it uses the funds. If used effectively, public funds could help leverage additional

If used effectively, public funds could help leverage additional financing from other sources, such as households (with or without microfinance), small-scale private sector, or other sources of public and donor funding.

financing from other sources, such as households themselves (with or without microfinance), small-scale private sector, or other sources of public and donor funding.

A key assumption underlying the consideration of RBF for sanitation is that public financing (subsidies) can be used to realign incentives in sanitation markets and foster more efficient and equitable service delivery. A related assumption is that payments for performance can foster improved and more cost-efficient service delivery as well as better pro-poor targeting. These two assumptions underlie the arguments made in this document. They would need to be tested as RBF initiatives for sanitation develop and it becomes possible to evaluate the performance of RBF instruments versus more traditional approaches to financing.

II. Identifying Misaligned Incentives in the Sanitation Sector

KEY POINTS

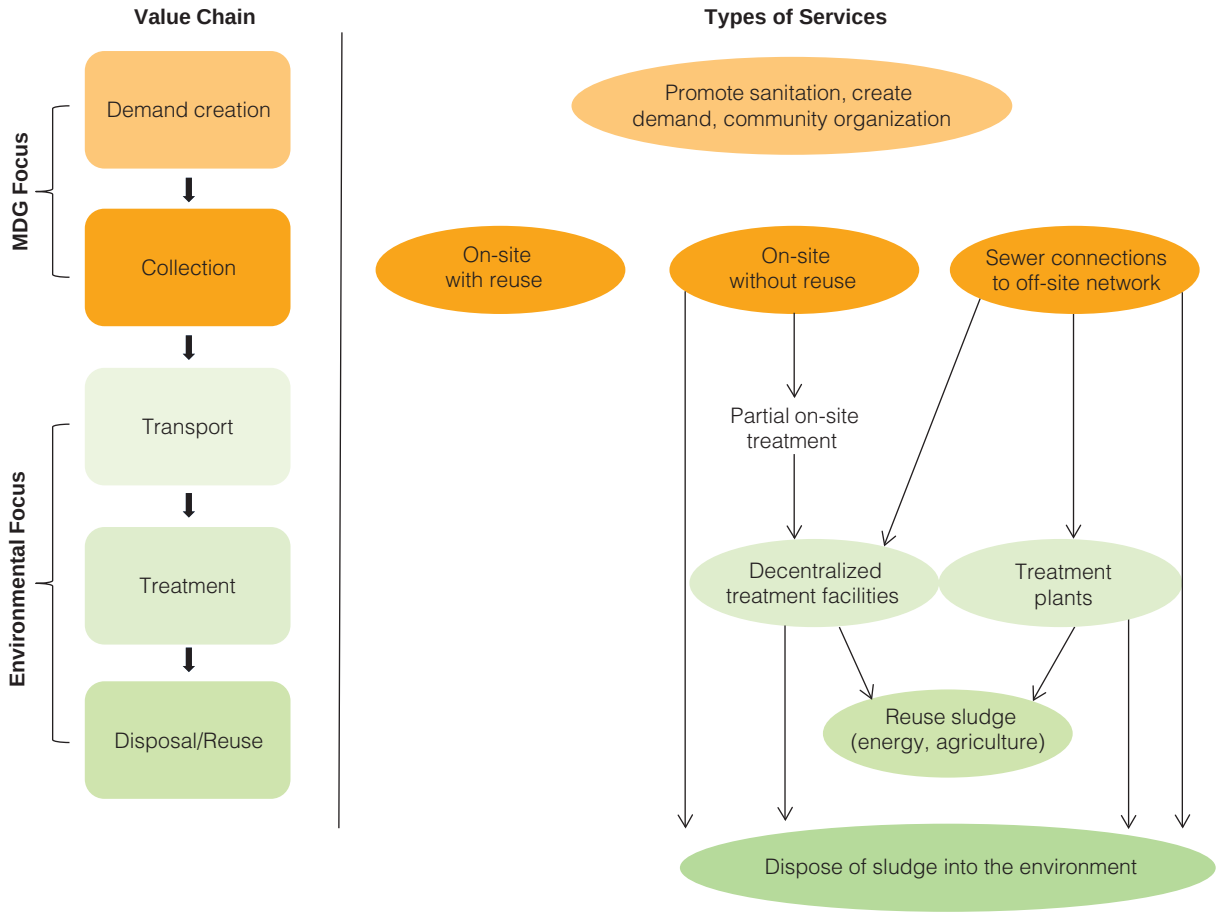
- **Market failures can occur at all levels of the sanitation value chain (demand creation, collection, transport, treatment, disposal, and reuse) on both the supply and the demand side.**
- **Realignment of incentives can take place along all steps of the sanitation value chain.**
- **RBF instruments can help remedy insufficient resource allocation for sanitation due to lack of prioritization.**

At present, the sanitation sector is riddled with "misaligned" incentives (or market failures) that have limited investment flows to the sector. This section briefly reviews where incentives are misaligned across the sanitation value chain (see Figure 1).

First, incentives are misaligned at the level of the overall sanitation sector. This is the root cause for insufficient resource allocation at that level. The main issue affecting the sanitation sector as a whole is the **lack of prioritization**, especially when compared with other basic services, such as health, education, and even water. This may be due to a number of factors, including:

- Fragmented responsibilities due to the "ownership" of sanitation having been transferred to the

FIGURE 1: TYPES OF SANITATION SERVICES ALONGSIDE THE VALUE CHAIN



municipal government, which seldom has the drive, the competence, and the financial resources to tackle such issues;
- Competition with other sectors, such as the health sector, which have become more sophisticated at "making the case" for attracting investments;
- Lack of awareness of the impacts that poor sanitation can have on public health, the environment, and the rest of the economy via related sectors (such as tourism, agriculture, or fisheries); and
- The taboo element, which can result in difficulties in generating political gains from tackling sanitation.

Such a lack of prioritization may be felt at either the national or local government level, depending on how responsibilities for sanitation have been allocated to various levels of government. The two may be linked, as local governments often get a substantial share of their funding through transfers from the national government.

A potential way to address such lack of prioritization at the level of policy-makers using RBF instruments would involve using COD (Cash on Delivery) Aid contracts at the national level or community or local government rewards at the local level (see the subsection "Macro Level: Modifying Policymakers' Incentives" in Chapter III).

Incentives can also be misaligned at each step of the sanitation value chain, as discussed below.

Collection. This step of the value chain, also referred to as *capture and storage*, is generally considered to be the main entry point for sanitation provision.[2] It consists of building and operating infrastructure to collect sanitation products, including human excreta, black water (septage), or grey water (sullage). Collecting the waste can be done via onsite sanitation solutions (for example, dry pit latrines or septic tanks) or off-site systems, where excreta are removed from the plot, most commonly via waterborne sewerage.

A number of market failures may appear both on the demand and on the supply side of that segment, which means that provision of collection services (infrastructure building as well as operation and maintenance) may be insufficient compared to what would be socially optimal. Table 2 lists examples of such market failures.

Transport. Transport can be carried out in two ways. For on-site sanitation systems, when such systems fill up, the sludge needs to be emptied and transported to a sanitary landfill. For off-site sanitation, transport is done via the sewers. However, most latrines belonging to the world's poor are not connected to a sewer system. When latrines fill up, they need to be moved or emptied. In most rapidly growing cities, emptying is poorly organized and regulated. Householders either empty pits and tanks themselves or pay private operators to do so. Waste is often dumped in the nearby environment, especially (as is often the case) if there is no official disposal and treatment point, or if it is far away. Pit and tank waste is heavy and costly to transport, and operators often incur additional costs because they have to pay to dump the waste at an official site. The result is that little on-site waste reaches the treatment plant and most ends up in nearby watercourses, waste ground, or unofficial landfill sites.

TABLE 2: EXAMPLES OF MARKET FAILURES LEADING TO INSUFFICIENT COLLECTION SERVICES

Demand-Side Failures	Supply-Side Failures
No or insufficient demand for sanitation	No or insufficient providers (such as masons)
Lack of awareness about the benefits of sanitation	Existing providers do not have adequate / sufficient equipment
Entrenched behavior or resistance to change	Existing providers have insufficient training
Not affordable	Existing providers have no legal status and operate illegally
No financing available for up-front investment	Utilities have monopoly rights and do not allow additional providers

[2] In Figure 1, an intermediary step, "demand creation," was inserted because several activities may need to be carried out by other actors to generate demand independently of investments into collection.

Treatment. Treatment can take place either on-site (some on-site systems allow on-site treatment, such as septic tanks, but only if they are adequately maintained) or off-site (when the waste has been collected via sewer networks or pit latrine emptiers and transported to a sewage treatment plant). Treatment of these waste flows is often critical to protect downstream water resources, public health, and the environment.

Table 3 lists some examples of potential failures on the demand and supply sides of waste transport and treatment.

Safe disposal. Safe disposal requires isolating the residual waste from human beings and from the environment (for example, to protect water resources). This can be achieved by building safe disposal sites, which are lined (thereby protecting groundwater resources) and set aside from human settlements. Such safe disposal sites might not exist in sufficient numbers, however, or might be inappropriately built or out of reach for enterprises transporting the waste. For example, if the sites are on the outskirts of town and charge a fee for disposal, it may not be economic for pit latrine emptiers to dispose of the waste at those sites.

Reuse. Suitable treatment can result in waste streams being converted into a valuable resource for reuse. Reuse of treated excreta offers significant benefits both in terms of reducing the need to find safe disposal sites for waste and because the waste itself contains nutrients that are an important resource for agriculture or energy generation, either at a large scale (wastewater treatment plants with cogeneration) or at the domestic/community level through biogas plants.

Table 4 lists some failures that can occur at the reuse step of the sanitation value chain.

"Addressing" these market failures can be done through a range of policy instruments, including developing and enforcing regulations, applying penalties and standards, or making incentive payments.

TABLE 3: EXAMPLES OF POTENTIAL FAILURES IN WASTE TRANSPORT AND TREATMENT

Demand-Side Failures	Supply-Side Failures
Unwillingness to pay for the service (especially when "no-cost" alternatives, such as dumping the waste on the street, are available)	Limited entry into the segment
	Under-investment by both small-scale entrepreneurs and utilities
Existing services are not affordable	Appropriate technical solutions are not available (lack of innovation, partly due to lack of market entry)
	Limited returns create difficulties for firms to grow

TABLE 4: EXAMPLES OF POTENTIAL FAILURES IN WASTE REUSE

Demand-Side Failures	Supply-Side Failures
Local culture may be "opposed" or resistant to reuse of grey waters	Sludge has limited financial value when its economic value could be large (if markets for reuse were better organized)
By-products from reuse cannot compete with alternative products (for example, subsidized energy or chemical fertilizers)	Higher costs of reuse facilities

Results-based financing consists of using public funds to make incentive payments to address market failures.

RBF consists of using public funds to make incentive payments to address such market failures. RBF can be used at various levels: at the macro level to influence policymakers to prioritize sanitation sector investments, or at the micro level, either on the supply side or the demand side of the various steps of the sanitation value chain.

III. Using RBF to Realign Incentives in the Sanitation Sector

KEY POINTS

- At the macro level, RBF instruments such as cash on delivery (COD) aid or community rewards can generate incentives for policy-makers to act differently.
- RBF instruments targeted to suppliers to incentivize them to provide services to the poor include output-based aid (OBA) and advanced market commitments (AMC).
- On the demand side, RBF can generate incentives for households to change their behavior through conditional cash transfers (CCTs) and vouchers.

Public funds can be used at several levels to realign incentives to provide sustainable sanitation, at the macro level or at the micro level (on the supply or on the demand side). This chapter examines the main RBF instruments that have been promoted over the years in several sectors (including, for example, health, education, and energy) and assesses whether they are applicable to sanitation. Each instrument is introduced and then discussed in terms of its application to the sanitation sector.

Macro Level: Modifying Policymakers' Incentives

As mentioned in Chapter I, policy-makers at the national and local levels might be under-prioritizing the sanitation sector. RBF can be used to generate incentives for policy-makers to act differently, either at the national level (for example, through COD Aid) or at the local level (for example, through rewards for local governments or communities).

RBF can be used to generate incentives for national- and local-level policy-makers to act differently.

Using Cash on Delivery (COD) Aid: A Contract Between an External Donor and National Governments

What is COD Aid? COD transfers funds, typically to the Ministry of Finance (MoF), in proportion to progress toward a mutually agreed outcome such as universal primary education completion or reductions in illness. It is presented as a way to create incentives for "the government to address a problem of its own making."

COD Aid is results-based in the sense that transfers only take place if the goals have been met and progress has been independently verified. The approach lets the recipient choose how such mutually agreed objectives will be achieved. For example, if universal primary education completion is best achieved by building roads (so children can get to schools) rather than building schools or training teachers, the MoF can allocate funds for that purpose. The recipient can make a specific request for additional technical assistance but this is by no means an integral (and mandatory) part of the aid package. COD Aid, as a concept, was first introduced by US-based Center for Global Development (CGD).

Cash on delivery (COD) transfers only take place if specified goals have been met and independent verification of progress has taken place.

Several donor agencies have expressed interest in incorporating this type of aid into the design of their programs. For example, DFID is in the process of negotiating a COD Aid arrangement with the Government of Ethiopia to support

secondary education for girls. In this example, pre-agreed unit payments would be made for each girl who passes secondary school tests.

A note by Robert Kaplan[3] for CGD explored three alternative arrangements to apply COD Aid to the water sector, although it did not address the sanitation sector (see Table 5).

This note indicated that to achieve sustainable improvements, a COD Aid contract for water should last at least five years, preferably with automatic extensions after five to 10 years. It was envisaged that depending on the baseline coverage, the COD Aid payment be made on the whole extent to which the indicator has been achieved (especially when the baseline is very low, with a view to pay for past achievements) or only for a given increment above a specified baseline.

How could it be applied to the sanitation sector? COD Aid could be appropriate for the sanitation sector in order to modify governments' current attitudes toward the sector. A critical issue would be to define an indicator that provides incentives for governments to invest in a sustainable and measurable manner, without creating particularly burdensome performance monitoring requirements or generating perverse incentives.

At an international level, COD Aid for sanitation could take the form of a contract between a donor and the Ministry of Finance in a given country, with a fixed remuneration (to be agreed) per unit of achievement. In line with the Millennium Development Goals (MDGs),[4] achievement could be defined based on coverage, with a unit payment per person with access to improved sanitation according to the Joint Monitoring Programme (JMP) definition.[5,6]

To encourage sustained coverage, it would be preferable to pay a lower unitary amount for the entire achievement rather than focus exclusively on new coverage. This would also be more in line with current performance verification systems (that is, JMP) that track overall coverage rather than new coverage. Indeed, particularly with respect to on-site sanitation, some households that had access to improved sanitation may lose it in the following year (for example, if a latrine collapses due to flooding or because it becomes full); focusing on new coverage may therefore be inadequate.

Although an emphasis on coverage is in line with existing performance verification mechanisms, the debate on post-MDG indicators has shown that focusing on coverage alone is often not sufficient and may in fact generate perverse incentives. For example, on-site latrines may exist but they have filled up and are therefore unusable. The latrines may

TABLE 5: POSSIBLE APPLICATIONS OF COD AID TO THE WATER SECTOR

Alternatives for Annual Payments	Output Definition	Verification	Issues Identified
Per satisfied household (HH) served	HH with access meeting WHO standards	Household surveys	How to determine household satisfaction Water quality standards
Per volume of water billed and paid	Water billed and paid	Operators' audits	Bias toward formal operators Possible perverse incentive to use more water
Per satisfied household served, adjusted by percent billed and paid of total volume of water produced	As above, combined	Household surveys + operators' audits	Higher verification burden

Source: Kaplan 2010

[3] Kaplan 2010
[4] See http://mdgs.un.org/unsd/mdg
[5] See www.wssinfo.org/definitions-methods/introduction
[6] This may be open to discussion, however, as many countries track sanitation coverage differently from what the JMP does: it would therefore be necessary to specify the monitoring strategy in advance in the contract.

be emptied periodically, but in an unhygienic way that generates environmental and public health hazards.

Complementing a coverage indicator with a volumetric indicator (as Kaplan suggests in his note for the water sector) may be possible. This could be done in several ways, such as by measuring the volume of sludge either disposed of at safe disposal points or treated to adequate standards. Measuring performance in this way would be more difficult in terms of performance verification for sanitation than for the water sector, however, for the following reasons:

- In less-developed countries, the bulk of the volume that needs to be safely disposed of (and treated, where applicable) tends to originate from on-site latrines. These volumes are not currently tracked in most performance verification systems.
- Residual volumes are highly dependent on the method used for collecting excreta. For example, if water-borne sewerage is used, the volumes of sewage are much higher than if using dry-pit latrines. Tracking such volumes in a consistent and comparable manner could therefore prove methodologically challenging.

Rewards for Local Governments and Communities

Because the sanitation sector is often highly decentralized, providing incentives to local governments to focus on sanitation may also be necessary, in complement or as an alternative to COD Aid. Such local-government or community-level rewards were introduced in India in the context of the Total Sanitation Campaign (TSC) through the *Nirmal Gram Puraskar* (NGP) (see Box 1).[7]

If combined with external funding, a system of "cascading" incentives and rewards could be instituted, whereby the national government reallocates rewards from a COD Aid contract to well-performing villages and communities.

This kind of village- or community-level incentive program could be established by national governments, with intergovernmental transfers based on clearly defined targets to promote sanitation. The type of indicators discussed for COD Aid contracts could be used in the context of such programs.

Supply Side: Incentivizing Service Providers

On the supply side of sanitation markets, RBF can be used to generate incentives for service providers to provide

BOX 1: THE NIRMAL GRAM PURASKAR IN INDIA

The *Nirmal Gram Puraskar* (NGP) is a national program in which the central government that provides one-off monetary rewards to qualifying *Gram Panchayats* (local governments). Payments are based on a set of criteria (which include, among others, 100 percent sanitation coverage of individual households and being totally free from open defecation) and are made following a verification process. These rewards range between US$1,250-12,500 per *Gram Panchayat*, depending on the population. *Gram Panchayats* can use the cash incentive to improve and maintain sanitation facilities in their respective areas with a focus on solid and liquid waste disposal and maintenance of sanitation standards. In addition, the State of Maharashtra has introduced several state-based campaigns, such as the Clean Village campaign (*Sant Gadge Baba*), which takes place annually and allows for maintaining overall cleanliness in the villages and strengthening the performance verification mechanisms. A key limitation of the program in India is related to the weakness of the performance verification systems, however, which appeared to be prone to some manipulation, particularly in certain states.

Source: Trémolet et al. 2010

[7] Trémolet et al. 2010

services to the poor, either because the latter cannot afford the full cost of the services or because service providers are not currently serving this market segment. This section reviews two main types of RBF instruments that can be used on the supply side, including *output-based aid* (OBA) and *advanced market commitments* (AMC).

Output-Based Aid (OBA): Incentivizing Service Providers to Serve the Poor [8]

Output-based aid ties the disbursement of public funding to the achievement of clearly specified results that directly support improved access to basic services.

What is output-based aid? OBA ties the disbursement of public funding (in the form of subsidies) to the achievement of clearly specified results that directly support improved access to basic services. OBA has gradually emerged as an important way to finance access to basic services as well as infrastructure provision in a range of sectors, including roads, energy, telecommunications, health, and education.[9]

The full amount of subsidy is paid to the service provider (private, public, or community operators) only when results have been met and verified by a third party. Subsidies are provided ex-post, once the outputs have been delivered over a certain period of time, which means that the service provider bears some financing and performance risk. This encourages the use of private sector funds (leverage), which are usually needed to pre-finance a large portion of the costs.

The need for subsidy is assessed on the basis of the level of demand for the service, costs, and social benefits generated. Subsidies are provided to encourage the provision of basic services to poor households in a targeted manner: a fundamental purpose is to encourage service providers to deliver services in areas that are not necessarily commercially attractive or where they would not naturally get involved without the subsidy.

How could OBA be applied to the sanitation sector? The use of OBA has so far been relatively limited in the sanitation sector, especially when compared to other sectors such as water or energy. The Global Partnership for Output Based Aid[10] has initiated a number of sanitation projects. Only two of them have been implemented so far (see Boxes 2 and 3 for existing sanitation projects that have received GPOBA's support), while others have been considered but are yet to be implemented or approved.

In addition, a few national governments have also adopted output-based approaches to delivering subsidies for sanitation, such as the Government of Mozambique in the late 1980s, Brazil, and India.

[8] This section draws heavily from Trémolet and Evans 2010. Please refer to the full publication for details.
[9] For more information on output-based aid and how it has been applied in several sectors, please refer to Mumssen et al. 2010.
[10] See www.gpoba.org

BOX 2: OUTPUT-BASED AID FOR CONNECTIONS TO WATER AND SEWERAGE IN UNPLANNED URBAN SETTLEMENTS IN MOROCCO

In Morocco, GPOBA provided a US$7 million grant to three service providers (two private operators and one public) to extend water and sewerage services into unplanned urban settlements that were formerly excluded from regular service provision. Launched in 2007, the project aimed to connect 11,300 households to piped water and sewerage. The output was a simultaneous connection to piped water and sewerage for poor households. The subsidy was paid in two installments: 60 percent on completion of the connection and 40 percent upon verification of at least 6 months of sustained service. An independent third party carried out verification. Details of the schemes and the costs of the subsidy varied by operator. Unit subsidies for sewerage connections varied from US$421 in Casablanca to US$913 in Meknès, due to differing unit costs and differing ability to pay on the part of households in different cities. Initial progress under the scheme was slow, largely due to a lack of familiarity with this type of scheme, investment delays upstream, and lack of clarity over land tenure. The pace of investment substantially picked up in subsequent years, with Amendis in Tangiers having delivered the expected number of connections ahead of schedule. The Government of Morocco is now exploring options for scaling up the scheme at the national level.

Source: Based on Chauvot de Beauchêne 2009 and personal communication with X. Chauvot de Beauchêne

Most OBA projects so far have focused on providing subsidies per new access point (either for connection to the sewerage system in Morocco or for on-site sanitation as in Senegal). In a paper commissioned by GPOBA and WSP, Trémolet and Evans (2010) argued that OBA mechanisms could be used to finance a much broader range of activities, going from demand promotion (or more generally "software" activities) all the way to sludge reuse and safe disposal. The types of OBA mechanisms recommended in this paper are summarized in Table 6 and Figure 2.

The design of individual OBA schemes will depend on the most appropriate way to package the provision of sustainable sanitation services, which means that each OBA scheme will likely include a combination of several types of results-based subsidies. In addition, the management of human excreta may need to be packaged with that of other waste streams, such as solid waste, for example, if latrines or drainage pipes keep filling up with rubbish. OBA subsidies could be provided in an integrated manner to encourage the formation of integrated solid waste and liquid waste entrepreneurs.

The main focus of any intervention will be determined by identifying which funding gaps need to be filled—that is, where market failures or affordability constraints mean that a sanitation service is being under-provided. For example, if networked sewerage exists but people are not connected, the principle focus for OBA subsidies should be on collection/access (building sewerage connections). If households have onsite facilities (such as basic latrines), but the pit waste is being indiscriminately dumped in the environment, the focus may be on fostering transport and safe disposal of this waste.

BOX 3: SENEGAL: OUTPUT-BASED AID FOR ON-SITE SANITATION AT THE HOUSEHOLD LEVEL

In Senegal, GPOBA is providing subsidies for on-site sanitation facilities in poor urban and peri-urban areas of Dakar, the capital city. The OBA component was developed in the context of a broader water and sanitation project funded by a group of donors and led by the World Bank, the Senegal Long Term Water Project. The OBA component built on an earlier IDA-funded project, PAQPUD (*Programme d'Assainissement Autonome des Quartiers Périurbains de Dakar),* which already involved an OBA approach, and led to the construction of 63,500 new on-site sanitation facilities in a demand-driven manner, benefiting more than 400,000 people between 2002 and 2008. The GPOBA project was initially expected to build on PAQPUD and provide access to an additional 15,100 facilities to households living in the Dakar region (approximately 135,900 expected beneficiaries with about nine people per household). Although the project was expected to end in February 2010, it has been extended to the end of 2011, due to slow implementation.

After 1.5 years of implementation, the level of completion was relatively low (around 7 percent of the initial objective) due to a range of reasons, including:

- The economic crisis had significantly affected Senegalese households who faced difficulties paying for improved sanitation among other priorities such as food, schooling, and other essential household expenses.
- The fact that beneficiary households had to pay the full amount of their upfront contribution (about 25 percent of the total cost) before the construction starts appeared to be a major obstacle for most beneficiaries.

Some of the adjustments that were proposed to address these issues include:

- A stronger involvement of the main micro-finance institution in Senegal to address the difficulties faced by beneficiaries to finance their upfront contributions (although this was tried, it did not help to increase the effectiveness of the program); and
- A revised Information Education Communication (IEC), methodology with an upfront effort in terms of mass communication, an increased IEC budget, and increased involvement of local governments.

Source: Communication with Pierre Boulenger, WSP 2010

The further down the chain the subsidy is provided, the more likely it will be possible to implicitly subsidize previous steps of the chain. However, the further down the subsidy is provided on the value chain, the more necessary it might become to add performance indicators that strengthen the poverty targeting.

The further down the chain the subsidy is provided, the more likely it will be possible to implicitly subsidize previous steps of the chain. However, the further down the subsidy is provided on the value chain, the more necessary it may become to add performance indicators that strengthen the poverty targeting. Otherwise, companies may have a stronger incentive to connect rich or large customers rather than those who are poor and more difficult to reach, and likely to consume and therefore discharge less. For example, in Sri Lanka, GPOBA proposed to create incentives for better operation of onsite sanitation by combining a payment for operation of onsite systems with a subsidy for rehabilitation and construction of new facilities. The objective was to create incentives for contractors to enter the market as "sanitation operators" in charge not only of building latrines but also of ensuring that they are adequately maintained and remain operational over time.

As a result, the packaging of sanitation services eligible for a payment could help foster the development of new sanitation service providers. For example, the

TABLE 6: RANGE OF OBA FINANCING MECHANISMS POTENTIALLY APPLICABLE TO SANITATION

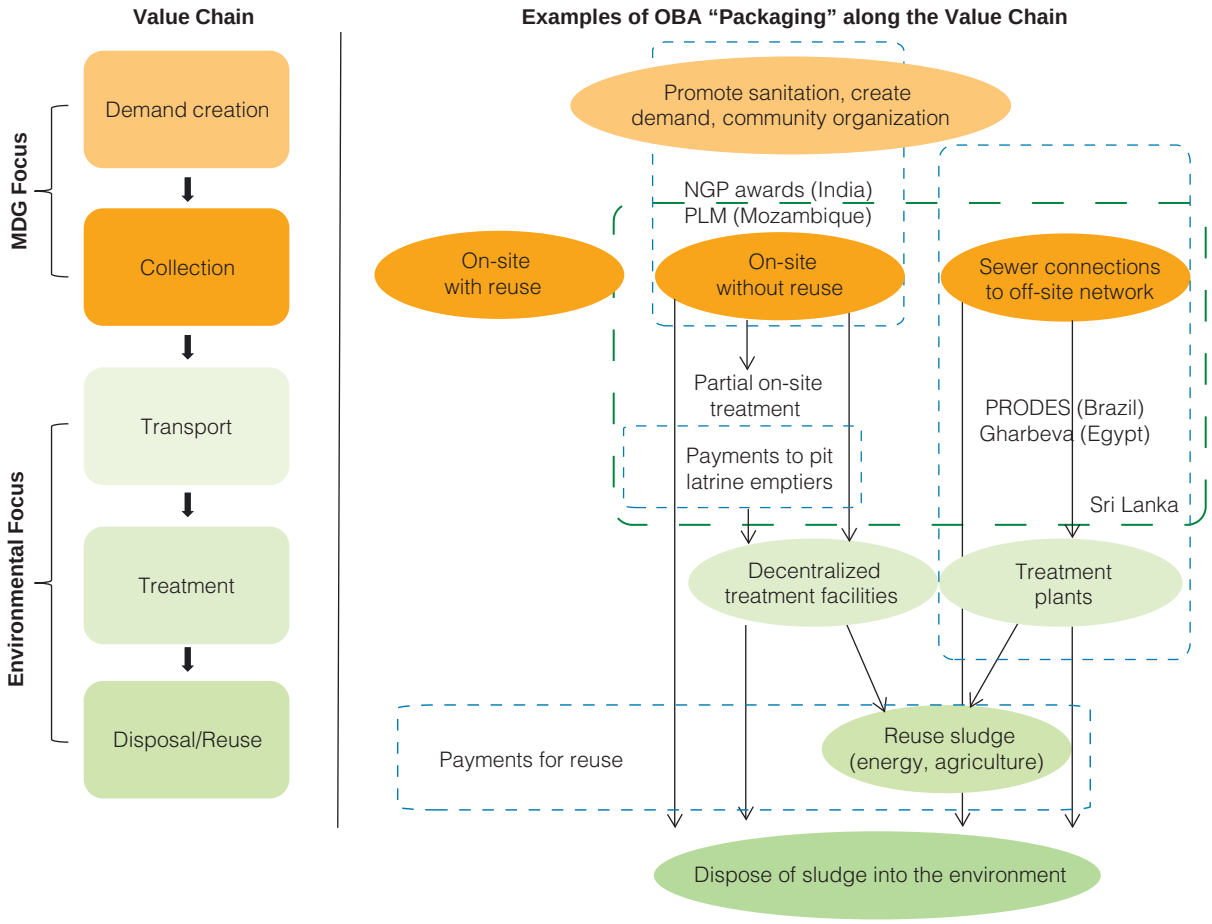
Value Chain	Service Types	Indicative Outputs (for Monitoring and Payments)	Cost Elements That Could Be Partially Covered Ex-post		Type of Service Provider
			Capital Costs	Operating Costs	
Demand creation "software activities"	Sanitation marketing	Number of people who build/use a latrine following demand promotion activities		Staff salaries, transport costs, materials development	NGOs, CBOs, local governments, ministries, sanitation entrepreneurs
	Social mobilization, triggering	Village/community becoming ODF			
	Hygiene promotion	Number of people adopting hygienic practices			
	Product development	Volume of sales of new products	Development costs	Staff salaries	Sanitation entrepreneurs, universities, engineering firms
Collection/ access	Build on-site sanitation (pit latrines or septic tanks)	Village/community becoming ODF Number of latrines built for eligible households Number of slabs sold to eligible households	Construction costs		Households (self-provision), masons, utilities, local government
	Empty latrines or septic tanks	Number of latrines emptied for eligible households Volume of waste removed	Start-up costs (equipment) and initial rehab of latrines	Running costs of equipment, fuel, salaries, costs of disposal	Households (self-provision), private operators (manual or mechanized), utilities, local government
	Build sewer connections	Number of new connections to eligible households	Construction costs		Utilities Private contractors
	Build and operate community toilets	Number of eligible users	Construction costs, land	Running costs	Local government, utilities, NGOs, CBOs
	Build and operate public toilet facilities	Number of toilet blocks installed in disadvantaged areas and meeting accessibility criteria	Construction costs, land	Running costs	Utilities, NGOs, private contractors, local governments

(*continued*)

TABLE 6: CONTINUED

Value Chain	Service Types	Indicative Outputs (for Monitoring and Payments)	Cost Elements That Could Be Partially Covered Ex-post		Type of Service Provider
			Capital Costs	Operating Costs	
Transport	Transport pit waste and septage to designated discharge point	Number of latrines emptied for eligible households Volume of waste transported to approved location	Start-up investment costs	Salaries, fuel, costs of discharge	Utilities, local government, private contractors
	Build and operate transfer stations	Number of transfer stations built and still operating after a given period Volume of septage collected at transfer stations	Construction costs, land	Salaries, fuel, costs of discharge	Utilities, local governments, private operators
	Build and operate sewerage systems	Number of eligible households connected to new sewers with satisfactory service (can be measured by surveys, payment of tariffs, etc.)	Construction costs	Salaries, fuel, costs of discharge	Utilities, local government, community contractors, private contractors
Treatment	Build, maintain, and operate decentralized wastewater treatment facilities	Volume of waste collected at plant and treated to required standard	Construction costs, land	Salaries, fuel, costs of discharge	Utilities, local government, community contractors, private contractors
	Build, maintain, and operate principal wastewater treatment plants	Volume of waste collected at the plant and treated to required standard	Construction costs, land	Salaries, fuel, costs of discharge	Utilities, local government, community contractors, private contractors
Safe disposal/ reuse	Build and maintain ecological toilets or biogas facilities	Number of ecological/ biogas toilets installed/ used Volume of productive agricultural inputs generated Energy generated	Construction costs, land		Local government, private contractors, communities
	Treat waste to standards required for reuse and deliver it to locations as required	Volume (or percent) of waste reused	Construction costs, land	Salaries, fuel, transport costs (if required)	Utilities, local government, private contractors (large schemes) Local government, households, communities (for individual ecological toilet installations)

FIGURE 2: POTENTIAL WAYS OF PACKAGING OBA SUPPORT ALONG THE VALUE CHAIN



Programa de Letrinas Melhoradas that ran in Mozambique from the late 1980s until recently led to the establishment of local workshops to manufacture and sell latrine slabs. Their development was first supported through capacity-building activities. Following a sharp increase in production prices that had threatened the workshops' commercial viability, ex-post subsidies based on the sales of latrines were introduced in the early 1990s and contributed to the strengthening of their activities (such subsidies were later partly eliminated, however, leaving the local workshops having to make ends meet from selling bricks or renting out space).[11]

If used strategically, output-based subsidies can help trigger broader financing reforms in a demonstrative way. A small OBA scheme might not have sufficient leverage on the design of broader sector arrangements, and OBA should not preclude the need for greater prioritization of sanitation access through financial and regulatory measures at a higher sector reform level. However, the rigor of the OBA approach may help in thinking through the sector issues in a more

If used strategically, output-based subsidies can help trigger broader financing reforms in a demonstrative way.

[11] Trémolet et al. 2010

systematic and strategic manner and if successfully implemented, may prove a powerful lever for triggering much needed reforms in the sector.

Advanced Market Commitments (AMC): Incentivizing Service Providers to Develop New Products

What are advance market commitments? AMCs have been utilized in the health sector to give incentives for the development of vaccines that meet the needs of developing countries by guaranteeing a market for those products once they have been developed (it could be a price, a quantity, or a revenue guarantee). For example, GAVI, the Global Alliance for Vaccination and Immunisation[12] has entered into an AMC with pharmaceutical companies for the development of a pneumococcal vaccine that is suitable to developing countries. The model could potentially be applied to other sectors: there has been some recent discussion about how it could be applied to the low-carbon energy sector, for example.

AMCs are to some extent similar to OBA mechanisms, as they focus on incentivizing providers. A key difference from OBA is that AMCs tend to be used where there is a need for new product development and where there is uncertainty as to whether a) the product can be effectively developed up to the required standard and b) there will be adequate demand for the product. Another key difference relates to the fact that in AMCs for vaccines the purchaser is the public sector, which means that it is easier to "guarantee" a certain price (or quantity or revenue) for the product when it comes to market.

"Pure" AMCs have been of particular interest in the health sector because

- Product development is very expensive and takes place over a long period of time;
- The development of products specific to developing countries is only worth investing in if there is a guaranteed market; and
- Governments tend to purchase those goods, as the vaccine market is basically funded through 100 percent subsidies in the developing world (with funds coming largely from donors).

How could AMCs be applied to the sanitation sector? AMCs could be applicable in the sanitation sector where there is a strong need for product development (or the development of business models) with relatively high development costs. In the first instance, this could be done in circumstances where the purchaser of sanitation services is the public sector, as in the following examples:

- *Software support to sanitation*. In countries where hardware subsidies have been eliminated or are limited, the government needs to procure "soft" services for demand promotion, hygiene promotion, community mobilization, and so forth. The government could put forward a "competition" for a viable business to deliver these services at scale (for example, a "franchise" of the Community-Led Total Sanitation model) and reward it by giving a guaranteed market to these providers (for example, the winner would be responsible for triggering all villages in a given region and would get paid per village successfully triggered).
- *"Municipal" sanitation.* An AMC could be used to support the development of public toilet blocks/ablution blocks, particularly in dense urban areas where they may be the only technical solution. In practice, this could work as a "design competition," where a large municipality would ask enterprises to come up with a viable design and business model for "paying public toilets." The winner would get a guaranteed market (in the form of an exclusive service area or a license to operate *x* number of public toilets within a city). The municipality would be the buyer of such services (with or without external donor support).
- *School sanitation.* An AMC could be used to get sanitation entrepreneurs to develop a suitable technical solution for school sanitation that could then be rolled out to *x* number of state schools within the country with domestic or donor financing.
- *Emergency sanitation.* An AMC could encourage the formation of private groupings (of engineers, consultants, universities, and so on) that could respond quickly with adequate sanitation solutions in the event of an emergency (such as an earthquake,

[12] See www.gavialliance.org

tsunami, or flooding). As donors need to regularly intervene in emergency situations, the AMC would provide a guaranteed market to the consortium for services (and goods) in forthcoming emergencies.

If AMCs for sanitation were successful in such circumstances, they could then be tested in circumstances where the risk is considerably greater for the private operator—that is, when householders are purchasers of sanitation services rather than the government. However, pre-financing by sanitation entrepreneurs may be difficult, especially for product development with a relatively long lead time.

An appropriate funding vehicle for transferring funding on the supply side would also need to be defined. For OBA, GPOBA has so far been providing such a vehicle, funding pilot projects with grants in the range of US$2–7 million. However, scaling up these instruments will likely require establishing other types of funding channels, such as the Honduras OBA facility[13] or other similar vehicles being evaluated in the Philippines or Kenya. At international level, existing funds could also be relied upon, such as GPOBA, the Global Sanitation Fund (GSF)[14] or others to be created.

Demand-Side: Giving Incentives to Households to Change Their Behavior

Conditional Cash Transfers (CCTs)

What are conditional cash transfers? CCTs make welfare payments conditional upon the receivers' actions, usually pre-specified investments in the human capital of children. This means that the government only transfers cash to persons who meet certain criteria and have adopted certain behaviors. Most CCT programs make regular payments to poor mothers if they can prove that their children are enrolled in school, get regular check-ups at the doctor's office, receive vaccinations, or the like. CCT programs have been developed in a growing number of countries: virtually every country in Latin America has a program and large-scale programs now operate in Bangladesh, Indonesia, and Turkey, with pilot programs in Cambodia, Malawi, Morocco, Pakistan, and South Africa.

How could CCTs be applied to the sanitation sector? Although CCTs have been applied to finance several social programs (such as health and education), they have yet to be used for water and sanitation. A study funded by the Asian Development Bank and the Water and Sanitation Program examined the potential to use CCTs for sanitation financing in rural Cambodia.[15]

The study found that most CCT nutrition programs target mothers with young children, with regular payments made based on records of health and nutrition service use. Despite increased awareness of the links between malnutrition and diarrhea, few CCT programs include any components that promote improved

Despite increased awareness of the link between malnutrition and diarrhea, few conditional cash transfer programs include components that promote improved sanitation and hygiene.

[13] Mandri-Perrott et al. 2009
[14] See www.wsscc.org/gsf
[15] Robinson 2010

sanitation and hygiene. Initial discussions suggest that the current failure to link sanitation improvement and nutrition provides a significant opportunity for improving CCT nutrition programs, through the potential for additional conditions that encourage the use of improved sanitation facilities and the achievement of collective sanitation outcomes.

The study formulated specific proposals about how to use CCTs for sanitation in the Cambodian context, as summarized in Box 4. Although these proposals have yet to be implemented, a follow-on study is about to be initiated to move toward implementation.

Using Vouchers to Support Both the Demand and Supply Sides of the Market

As mentioned in the Cambodia example, vouchers can be an effective mechanism for transferring subsidies via the demand side to ultimately support the supply-side of the

BOX 4: PROPOSALS FOR A "GROW-UP-WITH-A-TOILET PLAN" IN CAMBODIA

Robinson (2010) proposed a plan to ensure that every child in Cambodia "grows up with a toilet" through the provision of sanitation financing to poor households during the first five years after the first child is born. The intention is that the development of improved sanitation facilities and the establishment of good sanitation practices among both parents and the first-born will ensure that the rest of the family grows up using a hygienic latrine and observing good sanitation and hygiene practices.

The five-year plan would be targeted at poor mothers on the birth of their first child, on the basis that poor children under five are the highest risk group for diarrhea, malnutrition, and worms. Assistance would be provided to the mother of the household to improve household sanitation throughout the five-year period, with both connection subsidies (incentives for the construction of facilities) and outcome-based sustainability incentives (to encourage long-term improved sanitation practices).

- Year 0 (birth of first child): US$15 toilet voucher (redeemable by local producers) plus a US$5 voucher for a rebate on construction of second latrine pit;
- Years 1–5 (annual reward): up to US$10 each year based on following criteria:
  - Toilet usage (verified)
  - Village toilet coverage (verified)
  - Completion of hygiene course
  - Presence of handwashing facility

The plan would be supported by demand-creation programs (CLTS, mass media), sanitation marketing programs to increase and improve the supply of low-cost sanitation goods and services, and micro-finance programs to enable poor households lying just above the "extreme poverty" line to develop improved sanitation facilities.

The intention of the plan is three-fold:

- To focus attention on the need to target sanitation finance toward improved sanitation among under-five children;
- To recognize that sanitation finance should promote a process of sanitation development over a period of several years (providing incentives for the upgrading of facilities and the adoption of improved behaviors); and
- To encourage more efficient demand-side financing through vouchers and cash transfers in place of existing mechanisms for the supply of in-kind materials and services.

Source: Robinson 2010

market. Vouchers can allow beneficiaries to select service providers based on reputation, price, and preference, rather than being dependent on program-driven decisions. This approach can help develop sustainable local supply chains that strive to achieve efficiency in the market place.

Voucher systems let beneficiaries select service providers based on reputation, price, and preference, potentially leading to sustainable local supply chains that strive to achieve efficiency in the marketplace.

A fixed value voucher could be linked to a minimum level of sanitation service, with provision for some contribution by the household. Eligibility for a latrine voucher could be linked to existing means testing systems, with additional criteria—such as households containing children under five—to reduce the number of beneficiaries where resources are limited.

An interesting use of vouchers that has been little explored in the sanitation sector is to provide a voucher for pit-emptying at the same time that a latrine is constructed (irrespective of how the latrine is financed, although OBA subsidies would be preferable). Such an approach has been proposed in Sri Lanka in the context of the design of a scheme to be supported by GPOBA, which aims to support the development of integrated service providers of on-site sanitation services, including latrine construction and downstream operations.

Combining Various RBF Instruments

All such RBF instruments have been used in a number of infrastructure or social services (such as health and education) but have either been applied at a limited scale in the sanitation sector or not at all.

Each type of instrument has different properties. For example, RBF instruments on the supply-side, particularly if they are combined with the introduction of competition (via least-cost subsidy bidding systems, for example), can drive down the costs of providing the services. RBF instruments on the demand-side, such as CCTs, enable households to have better control over how they procure services. Interventions on both sides of the market would typically be required, however. For example, introducing CCT schemes with sanitation indicators would be of limited use if the supply side of the market were not strengthened so as to ensure that goods and services get to market.

Before introducing RBF instruments, it will be essential to evaluate in detail where such financing instruments may be applicable and how they may be combined. For example, COD Aid could be used to give incentives to the government to experiment with public policies that place emphasis on performance and introduce a series of "cascading incentives" and performance targets in the sector. Although RBF instruments have shown to increase focus on performance where they have been introduced, COD Aid or other "macro RBF instruments" are yet to be tested at this stage, which means that it is difficult to assess whether such "performance culture" can be introduced in such a way throughout a given sector.

IV. Designing Results-Based Financing Instruments

KEY POINTS

- **Before beginning the design of an RBF program, it is necessary to define the program's objectives and determine the applicability of RBF.**
- **An important aspect of RBF design is determining the payment mechanisms (trigger, amount, schedule, and so forth).**
- **Optimal risk allocation involves allocating risks to the right degree to those best able to manage and/or absorb them.**

A number of challenges have been identified with all RBF instruments, and most analysts conclude that great care must be taken in their design to achieve higher performance than through traditional financing and avoid introducing perverse incentives. As Professor Michael Kremer, who first conceived AMCs for vaccines, indicated in an interview, "complexity should not be shunned because designing appropriate incentives is absolutely essential to the success of the scheme and adequate incentives may be complex."

Key issues for the design of RBF instruments include the following:

Define the objectives and evaluate the applicability of RBF[16]:

- Identify market failures that need to be corrected;
- Evaluate whether other instruments can be used to correct such failures (for example, regulatory reforms, cost reductions via innovation, and land tenure reforms);
- Evaluate whether sources of subsidy are available and whether they could be channeled on an RBF basis.

If RBF is appropriate, move to the design phase.

Identify which entity needs to be incentivized to deliver the objectives (governments, service providers, households, and so on)

Evaluate how much risk can be transferred to the entity being incentivized. Decisions on optimal risk transfer will need to be based on an evaluation of each party's ability to bear (and control) risks and will impact all subsequent design decisions (see Box 5).

Define the payment trigger:

- **Input, output, or outcome?** There is a continuum of ways in which RBF mechanisms can be designed. If the payment trigger is defined in outcome terms (for example, a reduction in childhood diarrhea), this is transferring a higher degree of risk onto the recipient of the subsidy because such outcomes tend to be less controllable as they can be influenced by a variety of factors. On the other hand, using an outcome indicator rather than input or output may foster service providers' capacity to innovate to deliver a given outcome.
- **Performance verification: the payment trigger must be verifiable.** Performance verification is somewhat more difficult in the sanitation sector than in the health or education sectors as latrine usage usually takes place in the intimacy of one's house rather than in a public building. In addition, using certain indicators (such as latrine cleanliness) may introduce perverse incentives, if latrines end up not being used in order to keep them clean.

Define the payment amount. This needs to be sufficiently high to trigger the expected change in behavior or a decision to invest, but not so high that it becomes unaffordable for the public budget, nor does the recipient make windfall gains out of the subsidy. The benefit level also needs to be set high enough to justify the administrative expenditures. A common way to elicit the optimum payment amount for supply-side RBF mechanisms while giving incentives to reduce costs would be to introduce competition (least-subsidy bidding). However, this is most appropriate for RBF on the supply side and only where several providers can be mobilized (that is, not when there is a dominant incumbent operator).

[16] These are only some of the points that would need to be considered in order to evaluate the applicability of RBF mechanisms to a given situation. For a full write-up of the steps to be considered prior to considering OBA, for example, see the OBA Diagnostic tool on the GPOBA website (www.gpoba.org/gpoba/diagnostictool).

BOX 5: OPTIMAL RISK TRANSFER IN RESULTS-BASED FINANCING

The different forms of RBF largely involve creating the right incentives and aligning them with rewards, whether this involves recipient governments, the private sector (including NGOs), or both. Part of this may involve optimal risk allocation in which certain risks are transferred to these entities.

The principles of optimal risk allocation involve allocating risks to the right degree to those best able to manage and/or absorb them. Optimal risk allocation does not necessarily mean maximum risk transfer. A starting point for such risk transfer consists of transferring those risks that are most controllable by the entity to which the risk is being transferred.

In the case of transferring risk to the private sector, for example, the starting point is so-called "performance risk." This is the risk involved in delivering the service for which a third party has been engaged—in the sense that if the service is not delivered to the agreed level or specification (or in the worst case, not at all), there is a penalty to be paid. Such a penalty will typically be financial in nature—at one extreme this may involve no payment at all.

Other risks can be more difficult to transfer to the implementing agents—depending on the context—particularly those that are much less controllable. These include other commercial risks, such as market risk, which is composed of demand risk (price and volume) and payment risks (the ability to collect bills from customers) as well as other categories of risk, such as financial (exchange rate and interest rate risks) and political risks.

In developing countries, often a good number of these risks need to be left with governments, as they are better placed to manage them, particularly political risks (war, expropriation, currency transfer) where insurance is often available to international investors and lenders, if governments stand behind their obligations. Attempting to transfer some risks to the private sector will either lead to extremely high-risk premiums being charged, or the project being unbankable (that is, finance will not be made available for it).

In some instances, it may be optimal to share certain risks, for instance market risks. In such situations, the private sector may be responsible for an initial degree of risk; thereafter the governments take the remaining risk (or upside where events turn out to be better than envisaged).

Source: Mark Cockburn (CEPA)

Define the payment schedule. For providers that cannot pre-finance, it may be preferable to split the payment between an ex-ante payment and an ex-post payment (see further discussion of the pre-financing issue below).

Define the performance verification mechanisms. These can be either based on existing performance verification mechanisms or new ones to be established, such as independent consultants.

Define the fund transfer mechanisms. This can be done via existing funding facilities at the country level (for example, a rural water and sanitation authority or a local government support fund), new entities to be established, or a specific account (typically an escrow account).

Common challenges include the following:

Pre-financing. RBF instruments are based on the premise that the entity receiving the subsidy has the ability to pre-finance (in the case of OBA, for example, the service provider would be required to pre-finance the cost of investment). For some recipients (such as NGOs providing community triggering services), this can prove particularly

challenging. In the State of Bihar, for example, some NGOs that have been providing sanitation-related services in the context of the Total Sanitation Campaign have started withdrawing from the sector as the lag between service provision and payment by the TSC is extremely long and does not allow them to be financially sustainable. Finally, the need to obtain pre-financing can potentially raise the cost of providing the services because the funds that are borrowed to pre-finance the service need to be repaid and in some cases can carry a very high interest rate.

An alternative to this is to place only a proportion of the OBA grant at risk for poor performance, such that there would be a lower need for pre-funding. However, it may be that the previous approach would allow lenders to see that the service provider could manage the performance risk and would therefore be more willing to provide loans for pre-funding in future.

Potential ways around this problem include:

- **Facilitating access to finance as an integral part of the RBF intervention.** In the context of an OBA scheme for small-scale water supply provision in Kenya designed by WSP, the design of the program incorporated an agreement with K-Rep Bank, which agreed to pre-finance investments by the service providers. The subsidies transferred by GPOBA reduced the overall size of the loans to the communities and helped keep debt service payments affordable. It also provided better risk management from the lenders' perspective. In that spirit, the providers of RBF funding can seek to facilitate access to pre-financing as part of the overall scheme, so as to keep the cost of such financing at an acceptable level.
- **Allocating all public funding (subsidies) upfront to an escrow account, which can then be used as guarantee in order to organize pre-financing.** One common difficulty with RBF mechanisms is the lack of predictability of funding for potential recipients. This can be addressed by getting donors to allocate all funding in advance and keep such funding in an escrow account. If performance has not been achieved, funds are not disbursed and then returned to the original funders.
- **Protecting the lender from performance risk on the service provider's part, so as to reduce the cost of pre-financing.** If the provider does not perform and does not receive the performance payment, it may be unable to repay the initial pre-financing, thereby penalizing the lender. To protect itself against such performance risk, the lender may have to increase the cost of finance substantially. If the performance risk transfer is too high, it may be impossible for poorly capitalized entities to raise finance. There are, however, options around setting any penalty such that it has a meaningful impact on the service provider, but much less so on the lender. For instance, such a penalty might result in a major loss to the provider, but a loss of interest, at most, for the lender.

Performance verification. The success of most RBF schemes hinges on reliable performance verification mechanisms. Some government programs that have been designed with an RBF framework in mind (such as village-level awards in the context of the NGP program in India) have either partly failed or lost their credibility because of the weakness of the performance verification mechanisms. In existing OBA sanitation programs (such as in Morocco), performance verification has been carried out by international reputable experts, who have visited the program on a regular basis. This type of performance verification mechanism can be used in the context of an internationally funded pilot project but may be difficult to scale-up, particularly when domestic funds are being used.

The success of most RBF schemes hinges on reliable performance verification mechanisms.

In other programs where RBF principles have been used but insufficient attention has been paid to independent verification, several problems have emerged, such as:

- Performance verification is done only once, usually too soon after scheme completion, which means that sustainability cannot be ensured;
- Verification is not truly independent: instead, self-reporting is used or an agent who has a stake in the process or can be influenced performs the verification. This can result in the over-inflation of results.

A combination of various system of performance verification may therefore need to be defined.

Organizational challenges at the donor level. Some donor organizations may have difficulties switching from a traditional "input-based" method of financing to an RBF approach largely because of constraints linked to their own internal procedures. RBF methods are less prescriptive about the means to achieve a specified goal, which may run against traditional procurement procedures. At the other end of the spectrum, other organizations may have adopted an "outcome" focus (such as UNICEF). They may perceive a focus on outputs as a move back to focusing on inputs (that is, number of toilets built as opposed to behavior change).

A potential solution is to adopt an RBF approach on a pilot-basis initially, which may allow going around existing internal rules and procedures. If a pilot can demonstrate the approach's validity, consideration can be given to scaling it up and amending existing procedures.

V. Conclusions: Moving Toward Implementation

KEY POINTS

- The success of RBF instruments depends on behavior change also at the sector level.
- A multi-donor trust fund, such as that established for other health-related MDGs, could be established for expanding the use of RBF for sanitation.
- Strong performance verification methods and empirical evidence is needed to support the use of RBF instruments for improving sanitation.

RBF instruments appear to have the potential to improve the sanitation sector's focus on results and performance verification. RBF instruments are relatively new and remain largely untested, however, particularly in the sanitation sector. Going forward, it will therefore be necessary to invest great care in their design and to evaluate the costs and benefits of such schemes, particularly when compared to more traditional forms of financing.

For RBF instruments to be increasingly used in the sanitation sector, behavior change at the sector level would also be necessary. This could potentially be achieved through a number of initiatives, as detailed below.

Support a multi-donor trust fund on RBF for sanitation with a broader set of activities

A multi-donor trust fund has been set up for the health sector for achievement of the health-related MDGs, particularly MDGs 1c, 4, and 5, as detailed in Box 6. The Heath Results Innovation Trust Fund[17] is the main source of funding for research and analysis on results-based financing in the health sector, which gets published on the "Results-Based Financing for Health" website.[18]

The creation of a similar trust fund, specifically designed to finance sanitation on an RBF basis, could be envisaged. Alternatively, if that was not deemed a priority, financing could be channeled to existing trust funds and funding organizations so that they could support the development of sanitation activities on an RBF basis. Existing organizations that could potentially benefit from additional funding for sanitation RBF include:

- **The Health Results Innovation Trust Fund.**[19] Provided they are interested, the remit of the Health Results Innovation Trust Fund could be expanded so that they would consider sanitation interventions as part of a package of health measures.
- **The Global Partnership for Output-Based Aid.**[20] GPOBA was initially created to pilot OBA mechanisms in a range of sectors, with the potential to allocate OBA subsidies as well as technical assistance grants. Their focus is now changing and GPOBA is set to become a technical assistance body rather than providing subsidies, except in some specific sectors where ongoing subsidy funding might be required, such as water and sanitation. In recent months, GPOBA has developed a pipeline of sanitation projects that could be funded on an OBA basis and where subsidy funding is required.
- **The Global Sanitation Fund (GSF).**[21] The GSF has been set up as part of the Water Supply and Sanitation Collaborative Council (WSSCC)[22] to increase financing in the sanitation sector. It is open to contributions from all sources, and accessible to all countries meeting eligibility criteria. The GSF was set up as a vertical fund to pool funds from various sources to concentrate on a specific set of issues, on a model comparable to that of the Global Fund

[17] See www.rbfhealth.org/rbfhealth/content/health-results-innovation-trust-fund
[18] See www.rbfhealth.org
[19] See www.rbfhealth.org/rbfhealth/content/health-results-innovation-trust-fund
[20] Trémolet and Evans 2010
[21] See www.wsscc.org/gsf
[22] See www.wsscc.org

BOX 6: THE HEALTH RESULTS INNOVATION TRUST FUND

The Health Results Innovation Trust Fund (HRITF) is funded by the Government of Norway and the United Kingdom, with commitments totaling more than US$500 million through 2022. The HRITF finances activities to enhance access to and improve the quality of basic health services using a variety of RBF mechanisms. The HRITF has four specific aims:

- Support design, implementation, monitoring, and evaluation of RBF mechanisms;
- Develop and disseminate the evidence base for implementing successful RBF mechanisms;
- Build country institutional capacity to scale up and sustain RBF mechanisms, within the national health strategy and system; and
- Attract additional financing to the health sector.

The HRITF works with development partners and client countries to build and use country systems, wherever possible.

The HRITF supports:

- Country Pilot Grants to design, implement, monitor, and evaluate RBF mechanisms, with the following countries currently supported: Afghanistan, Benin, Democratic Republic of the Congo, Ghana, India, Kyrgyz Republic, Rwanda, Zambia, and Zimbabwe;
- Seed grants to assess the value and feasibility of RBF mechanisms in countries;
- Dissemination and knowledge sharing;
- A global website for knowledge and learning (see www.rbfhealth.org); and
- An Interagency Working Group (IWG) on RBF, co-chaired by the World Bank, to share knowledge, best practices, and lessons learned

The HRITF was initiated in December 2007 and is expected to operate through 2022.

Source: www.rbfhealth.org

for Tuberculosis, Aids, and Malaria.[23] It was initially set up with contributions of approximately US$60 million, from the Dutch government and several other donors. At present, it does not operate on an RBF basis although a focus on performance-based management and monitoring and evaluation lies at the core of its design. In each country of operation, the GSF selects an executing agency, which acts as the main channel to disburse funds to sub-grantees. The GSF could potentially be used as a vehicle for RBF to the sector, under a "specific window" with dedicated RBF procedures. It would be necessary to verify the feasibility of such *modus operandi* with the GSF's management, however, because the GSF is hosted within UNOPS, a United Nations agency that may have disbursement procedures that do not allow RBF.

Strengthen performance verification mechanisms and consider supporting a "partnership" for independent performance verification

Independent performance verification is critical to the success of RBF schemes and can suffer from weaknesses. Technical innovation may be needed to facilitate sanitation performance verification (in the same way as the invention

[23] See www.theglobalfund.org

of a lumen measurer made it possible to monitor the performance of street lighting, for example). Given the development of RBF mechanisms for a number of sectors (including health and education but also water and sanitation), it may be possible to establish an international partnership (or several at the national level) to strengthen performance verification activities, which would provide training for performance verification, publish manuals on developing performance verification procedures, and include an accreditation system for performance verification organizations at the country level.

Promote the use of sanitation RBF as part of a broader package of interventions (for example, health and education CCTs to include a sanitation component)

Sanitation is often considered in isolation when there are strong linkages with other activities, such as providing shelter or carrying out health prevention measures. Given that most CCT programs routinely include health and education indicators, the inclusion of sanitation indicators as part of these broader programs could be encouraged. This would require fostering linkages with other sectors and communities of practitioners.

Fund solid empirical research through randomized controlled trials to verify the impact of RBF instruments vs. more traditional financing methods

The advocates of RBF methods have so far hypothesized that a stronger focus on results when using public funds can generate better results for the program as a whole, however. There have been a limited number of independent evaluations of RBF schemes compared to more traditional financing methods, and all of these evaluations have been done for health and education related interventions.[24] As a result, the relative efficiency of RBF schemes has yet to be demonstrated in the sanitation sector and would need to be ascertained through rigorous evaluation. This would need to include a comprehensive evaluation of the costs of alternative approaches, particularly given that the costs of software interventions tend to be under-estimated in the sanitation sector.

Verification of the impact of RBF methods for sanitation would need to include a comprehensive evaluation of the costs of alternative approaches, particularly given that the costs of software interventions tend to be underestimated in the sanitation sector.

Disseminate information and findings about RBF instruments

RBF is now a well-established financing method in the health sector. Information on RBF for health is conveniently located in a website managed by the World Bank entitled Results-Based Financing for Health.[25] Creating an equivalent website on RBF for sanitation (or dedicated webpages on an existing site) could be

[24] See, for example Basinga et al. (2010) evaluating P4P schemes for health in Rwanda, or Olken, Onishi, and Wong (forthcoming) evaluating the Indonesia's PNPM Generasi program, a CCT program based on health and education indicators in rural Indonesia. In Indonesia, the program's effectiveness appeared to be considerably higher in health than in education, partly because the health interventions take place at regular intervals one month apart rather than every day school attendance for example, which requires a more sustained change in behaviour.

[25] See www.rbfhealth.org/rbfhealth

a good way to raise the profile of RBF for sanitation and share experiences once these become more numerous. For example, as GPOBA evolves to become a "center of excellence" on output-based aid (rather than a direct provider of OBA subsidies), a section of its website could support resources dedicated to using RBF for sanitation more specifically. In the first instance, and short of creating a dedicated website, this could take the form of a "virtual group" or community of practice that could disseminate results, share lessons, and learn from each other as well as from people who have applied RBF in other sectors or could be incorporated as a key topic for the recently launched international Community of Practice on sanitation.

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