



Review of Results-Based Financing Schemes in WASH

**Report to Bill & Melinda Gates
Foundation**

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Glossary

A list of terms that are important for discussing results-based financing (RBF) in water, sanitation, and hygiene (WASH), and their definitions, follows.

Advance payment	Advance payments are payments given before delivery of outputs. Thus, advance payments are a non-results-based component of a RBF payment.
Average cost	Average cost is the total cost of a project divided by the number of outputs provided, people served, or households served. This refers to the combined cost paid by the donor and other contributors to fund the project—it is not the price paid by consumers to consume services.
Bridge financing	Bridge financing is a loan intended to support a borrower until the borrower receives more funding. In the case of RBF, bridge financing provides money that enables the borrower to make necessary investments to deliver the outputs that trigger RBF payments. The RBF payments can then help repay the loan.
Conditional Cash Transfers (CCT)	CCT is a type of RBF where donors provide cash payments to poor households or communities that meet certain behavioral requirements, such as using improved latrines rather than defecating in the open.
Direct Cost	Direct cost is the short-term cost of delivering an output under an RBF scheme. This reflects the amount of money a service provider must spend in order provide an output which triggers an RBF payment. For networked services, this may include more than a connection (for example, some water distribution pipes).
On-Site Sanitation	On-site sanitation uses facilities that are not connected to a network, such as septic tanks or pit latrines.
Open defecation	Open defecation means defecating without any sanitation facility, improved or unimproved. This could include defecating into bushes or by the side of a road, among other activities. Use of poorly designed facilities, like latrines that leak into a river, are not included.

Output-Based Aid (OBA):	OBA is a type of RBF, where service delivery is contracted out to a third party that receives a subsidy to complement or replace the required user contribution. The subsidy is paid after the delivery of outputs has been verified.
RBF payment	RBF payments are made to service providers for specified outputs. These payments are contingent on certain outcomes. Some schemes have an advance payment, which is paid to a participating service provider before outputs are delivered.
Service provider	Service providers are the entities that provide the outputs, and receive RBF payments for those outputs. Service providers may be large or small, and may be public or private.
Theory of Change (ToC)	A Theory of Change is used to describe the assumptions on how a development intervention plans to achieve its intended outcomes
Total Cost	This includes all costs of a RBF scheme: the RBF payments, and all administrative and overhead costs. For example, this would include technical assistance for running a RBF scheme (when provided), not just the cost of delivering outputs.
Results-Based Financing (RBF)	RBF is an aid mechanism where payments are made upon verification of the delivery of desired outputs, or the performance of desired behaviors.
Viability Gap	A viability gap is the difference between the revenues needed to make a project commercially viable, and the actual fees likely to be paid by poor consumers. Viability gaps can be filled by RBF subsidies, or other methods.
Viability Gap Funding	Viability Gap Funding (VGF) provides money to a service provider upfront to cover a viability gap (see previous). VGF is not RBF, as it is provided before any results are delivered. VGF is not the only way to fill a viability gap.

Vouchers

Voucher projects are a type of RBF where consumers receive a redeemable voucher from a Government or donor agency that can be exchanged for a specified good or service. The provider of the good or service then exchanges the voucher for a subsidy payment.

Executive Summary

Results-Based Financing (RBF) is an alternative to conventional funding mechanisms for Water, Sanitation, and Hygiene (WASH) projects. As the name suggests, Results Based Financing (RBF) provides funding for an initiative *after* results have been delivered. This is in contrast to the conventional approach of providing the finance upfront. RBF was developed in an attempt to improve aid effectiveness by increasing accountability, efficiency, and private participation. (For more information on what RBF is, see Box 0.1).

Given the massive need to improve WASH services globally, donors have been trying RBF in WASH since at least the mid-1990s. However, until now, there have been no comprehensive evaluations of RBF in WASH. This report summarizes findings from an investigation into whether RBF works in WASH, in what circumstances, how, and why.

First the overall performance against Development Assistance Committee (DAC)¹ and other evaluation criteria is summarized. This is followed by what the investigation has revealed about where RBF works well, where it may not be appropriate, and what we still need to learn. The methodology for the investigation is briefly described in Box 0.2

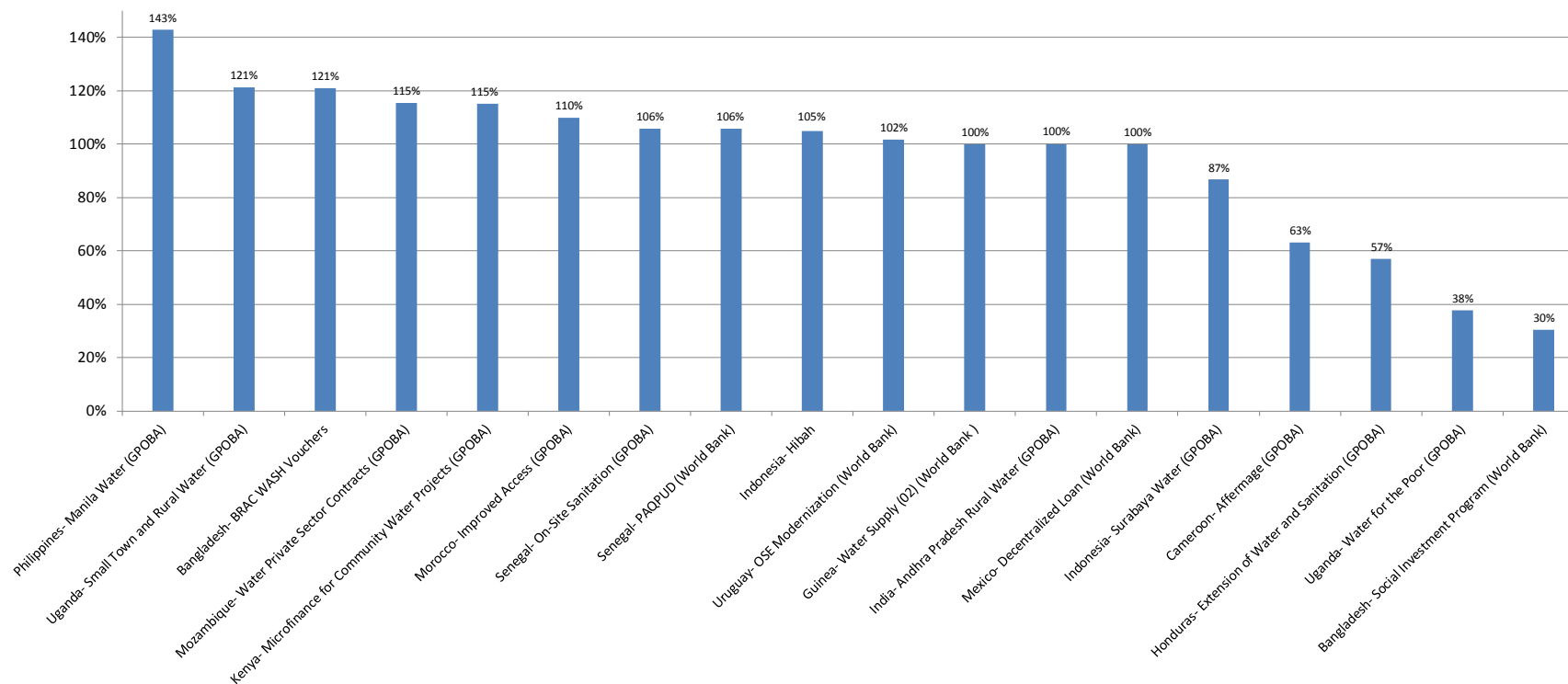
How Well Does RBF Work in WASH?

RBF projects in WASH are effective. Effectiveness² is defined as achieving what an intervention sets out to do. RBF projects on average deliver 94 percent of targeted outputs. Seventy-one percent of projects delivered outputs at or above target level. Projects' effectiveness in reaching targets is shown in Figure 0.1.

¹ The Organization for Economic Cooperation and Development's (OECD) Development Assistance Committee (DAC) created a set of criteria for evaluating the performance of development activities. See <http://www.oecd.org/development/evaluation/daccriteriaforevaluatingdevelopmentassistance.htm>

² According to DAC, effectiveness is "a measure of the extent to which an aid activity attains its objectives." See <http://www.oecd.org/development/evaluation/daccriteriaforevaluatingdevelopmentassistance.htm>

Figure 0.1: Effectiveness of RBF in WASH



Note: This figure only shows projects for which numerical effectiveness data were available. These percentages reflect the number of outputs verified by each project for delivery of a results-based payment. They are not the service providers' self-reported numbers, except for Bangladesh: BRAC Wash Vouchers.

There is not enough evidence to be sure RBF WASH projects are efficient. RBF was designed to promote efficiency³ by: allowing innovation in delivery methods, involving private firms in providing subsidized WASH services, providing financial incentives to deliver results, and reducing waste by ensuring money is only spent when results are achieved.

The evidence shows that RBF projects hit the cost targets they set for themselves. Moreover, projects' costs are in line with typical engineering estimates of costs. However, there is a dearth of comparisons of RBF costs with conventional approaches. As a result, it is not possible to empirically verify whether RBF is more efficient than conventional financing.

There is not enough evidence to be sure RBF WASH projects are sustainable. RBF is intended to promote sustainability,⁴ in particular by engaging private providers who— it is hoped— will be motivated to provide on-going service because they make money by doing so.

No RBF project collected data on whether service continues to be provided after the money has been paid out. Thus, there is no empirical evidence on whether RBF really is more sustainable than conventional aid, or in what circumstances.

³ According to DAC, “Efficiency measures the outputs -- qualitative and quantitative -- in relation to the inputs.” See <http://www.oecd.org/development/evaluation/dacriteriaforevaluatingdevelopmentassistance.htm>

⁴ According to DAC, “Sustainability is concerned with measuring whether the benefits of an activity are likely to continue after donor funding has been withdrawn.” See <http://www.oecd.org/development/evaluation/dacriteriaforevaluatingdevelopmentassistance.htm>

Box 0.1: RBF Delineated and Defined

Results-Based Financing (RBF) is an aid mechanism where payments are made to service providers upon verification of the delivery of desired outputs, or the performance of desired behaviors. RBF needed to be distinguished from three closely related mechanisms:

- *Payment for Results (PfR)*: PfR provides loan disbursements to governments upon verification of desired outputs. These disbursements are loans to governments, rather than grants to service providers.
- *Public-Private Partnership (PPP)*: Governments contract with private firms to provide services, such as through concession or performance-based contracts for operations and maintenance, and may pay for services provided under the contract.
- *Viability Gap Funding (VGF)*: Donors provide upfront grant contributions to cover gaps between what customers will pay and what providers need to be paid, instead of providing output-based subsidies.

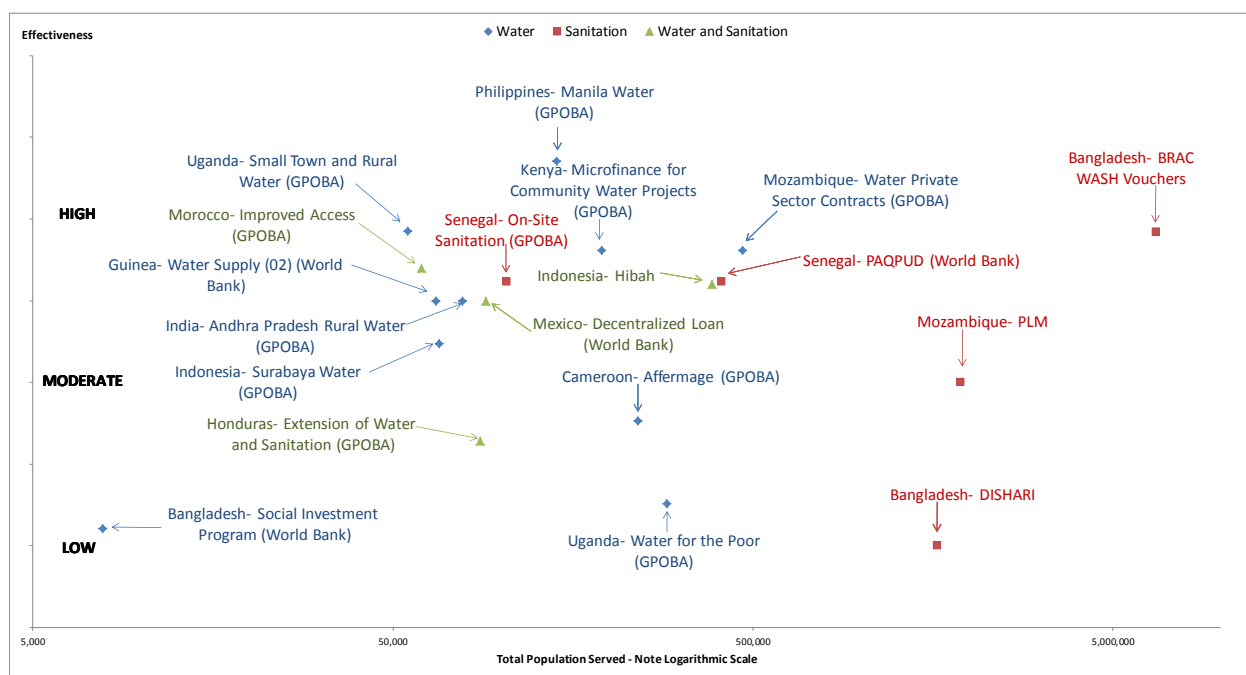
There are various types of Results-Based Financing. The three main types of RBF used in WASH are shown below.

Type of RBF	Description
Output-Based Aid (OBA)	In OBA projects, service delivery is contracted out to a third party—public or private—which receives a subsidy to complement or replace the required user contribution.
Conditional Cash Transfers (CCTs)	CCT projects provide cash payments to poor households that meet certain behavioral requirements.
Voucher Programs	In voucher projects, a consumer receives a redeemable voucher from a Government or donor agency which can be exchanged for a specified good or service.

Advance Market Commitments (AMCs), which stimulate the development of new technologies by guaranteeing markets, were not found in WASH (although they are used in health to develop vaccines).

RBF projects can operate at the scale, but most have not. A few RBF projects have operated at a large scale. The BRAC WASH Vouchers project in Bangladesh has provided 6,600,000 people with latrines. PRODES in Brazil supported the development of wastewater treatment facilities serving 6,800,000 people. PLM in Mozambique provided 1,900,000 people with latrines. The Water Private Sector Contracts project in Mozambique was the largest water project we identified, serving 468,000 people. In Indonesia, the Water Hibah has provided working water connections to 385,000 people, and is being scaled up with the intent of serving an additional 230,000. The scale and effectiveness of RBF projects in WASH are shown in Figure 0.2.

Figure 0.2: Scale and Effectiveness of RBF in WASH



Note: The horizontal axis is on a logarithmic scale. Targets were not available for two projects shown here. Mozambique: PLM was assigned moderate effectiveness because it was large, and no evidence of effectiveness problems was found. Bangladesh: DISHARI was assigned low effectiveness as it had problems with payments being made for outputs that were not actually delivered.

However, most RBF WASH projects are small. The median number of people served by projects in our sample was 142,810. As most RBF projects are effective, these low numbers served show that the projects are aiming low. Many RBF projects are intended as pilots to demonstrate viability of the approach. This is understandable, but if RBF is to be relevant to achieving global WASH targets, it has to operate at much larger scales than it has tended to so far.

The limited evidence available suggests that achieving scale is more likely when projects are developed with strong local ownership, and when RBF is mainstreamed into sector funding arrangements.

Box 0.2: Methodology

This report aimed to capture the whole population of RBF projects in WASH, and then analyze a representative sample of the population. This ensured that the report's conclusions were based on reasonable evidence, and allowed the current state of RBF in WASH to be understood.

First, a census of all RBF projects in WASH was created by reviewing reports on RBF, and searching websites of donors and other organizations focused on WASH. Then, a sample of 30 projects was selected from the census. The sample only included projects that were expected to have progressed far enough to yield results, and included all types of RBF and sectors in WASH.

Documents were reviewed and stakeholders were interviewed, to collect data on the projects in the sample. Last, the data was analyzed to learn how RBF is used in WASH, how well it performs, and how it could be improved. The amount of documents that were available, and the quality of the documents, varied across projects.

This report made the strongest conclusions possible with the information that could be found. It was often not possible to make concrete recommendations on certain aspects of the practice of RBF in WASH. Inconsistencies across sources were resolved, and the report presents data on scant reporting of key indicators. The methodology is presented in more detail in Section 3.

Where Is RBF Likely To Work Well, and Where Is It Not?

Evidence and logic indicate that RBF works well in some situations, and not in others. For RBF to work, these minimum conditions must be met:

- There is a need for **subsidizing the desired result**—RBF is inherently a payment by government for something, that is, a subsidy
- The **result must be measurable**, as payments need to be based on verified results
- The result must be closely **linked to the desired impact**, or the RBF scheme must be complemented by other measures needed to convert outputs into impacts—otherwise, the desired benefits will not be realized
- **Providers** need to be **motivated** by payments, and **capable** of delivering the desired outputs—otherwise they will not deliver what is needed.

These conditions alone are not sufficient to guarantee successful use of RBF. This report's key findings on other factors of success are below.

RBF works when private providers supply goods beneficiaries want. Private providers respond well to RBF incentives. An analysis of RBF outcomes showed that 70 percent of projects with private providers met or exceeded their targets. RBF works well when it subsidizes outputs that families themselves want. A typical case is the Small Town and Rural Water project in Uganda, in which a number of local private providers in total delivered 121 percent of the target number of outputs.

RBF can work with public providers, but the rationale for RBF is less clear. In the limited dataset used, public providers were slightly less effective than private providers. More importantly, the rationale for using RBF with public providers is less clear. Governments should be able to fund providers they own, and to direct them to achieve results with the funding. If this is not happening,

the best response will often be to improve the governance and accountability of the provider, rather than trying to incentivize it with RBF.

RBF is a promising mechanism for higher levels of government to influence policy at lower levels of government. One place where there is a clear rationale for RBF with public providers is in decentralized water sectors, where higher tiers of government seek to influence policy and service provision at lower levels, but do not control it directly. The Government of Indonesia used RBF payments (known as ‘Hibah’) to encourage municipal utilities to expand service. A stakeholder reported that the Hibah

“seemed to be the key they had been looking for in terms of unlocking capacity to better target and control fiscal transfers to sub-national government and ...to areas where developments are most needed.”

(Averill, Scally-Irvine, Nordiawan, Howard, & Gouy, 2011)

Bridge-financing extends the range of situations where RBF can be used, but introduces complexity and risk. RBF typically requires a provider to first create the output, and then get paid for it. This works well where providers are well capitalized or have ready access to finance. In some cases though, providers lack access to finance. In these cases, RBF schemes have been designed to include ‘bridge finance’. Bridge finance is typically in the form of loans to the provider from third party financiers, enabling the provider to cover the cost of delivering outputs. Payments received for results are then used to repay the financier. Risk transfer still works (provided the financier is private), because financiers will conduct due diligence to be sure that their loans are likely to be repaid. This acts as quality control on the service providers.

A good example is Microfinance for Community Water Projects in Kenya, which arranged for a local bank to provide loans to community-based organizations (CBOs) to build water systems. These loans provided the initial capital that the CBOs needed to build outputs. The CBOs then used the payments they received for delivering outputs to help repay the loans. That project worked well, and is in a scale-up phase.

Bridge financing provided in the Extension of Water and Sanitation project in Honduras enabled more providers to deliver outputs under the project. Local non-government organizations (NGOs) offered to provide additional bridge financing—this allowed more public providers to participate, and enabled private providers to participate (private providers had not yet participated in the project, as they could not obtain financing).

However, bridge-finance adds complexity—and hence increases costs and risks, and can make projects harder to scale up. Projects that provide help with bridge financing often have to provide technical assistance to financiers (as happened in the Second Generation Project in Indonesia), which increases costs and reduces economies of scale. Furthermore, providing bridge financing increases the range and number of organizations that must be coordinated, as lenders are brought in to the project. Thus, RBF with bridge finance should only be used where the benefits from RBF (compared to another funding mechanism) outweigh the costs of complexity introduced by the bridge finance.

It is not yet clear if RBF can achieve behavior change in community sanitation projects. The full health benefits of improved sanitation are not realized unless most people in the community adopt good sanitation and hygiene practices. Conditional Cash Transfers (a kind of RBF) have been used to try to motivate changed behavior, but with limited success so far.

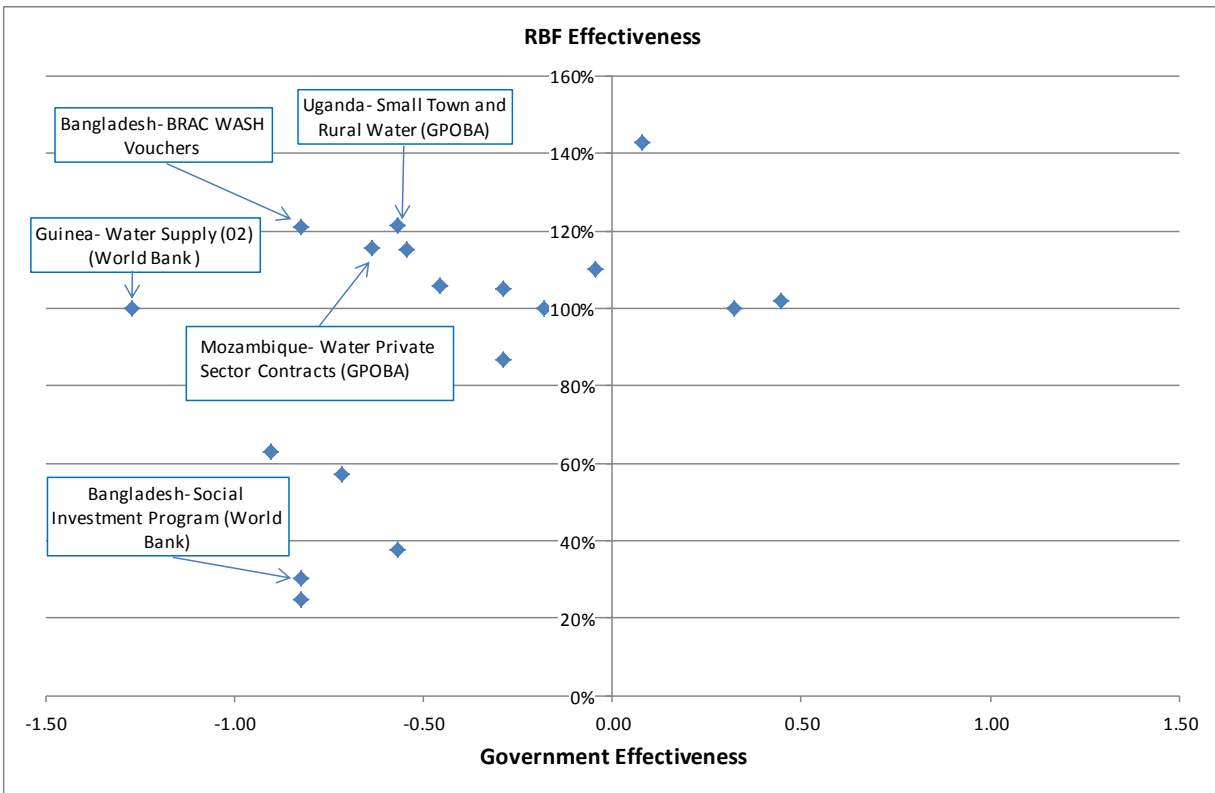
The Nirmal Gram Puraskar (India) and DISHARI (Bangladesh) projects provided incentives to village governments if open defecation was eliminated in the village. These projects both aimed to provide prizes to village governments for eliminating open defecation in their communities. However, villages received prizes under the Nirmal Gram Puraskar without having necessarily eliminated open defecation. In some cases, people resumed defecating in the open after the prizes were awarded. The DISHARI project in Bangladesh relied on villages to self-report results. Some villages falsely reported success, and received prizes they did not deserve.

The East Meets West Foundation is working on a more rigorous approach to monitoring behavior change in its projects in Vietnam and Cambodia. Online reporting, rigorous checking procedures, and digital photos are being used as part of a program that incentivizes the construction and use of latrines. However, it is too early to know yet if this is sufficient to overcome the inherent problems of monitoring private sanitation and hygiene behavior. For now, it is worth continuing to support innovation in monitoring of sanitation behavior to see if effective methods can be developed. However, large scale initiatives should be postponed until success is demonstrated at a pilot level.

RBF works well in poor countries with low government capacity. RBF projects have met or exceeded their output targets in some very poor countries with low government effectiveness, such as the BRAC WASH Vouchers project in Bangladesh, and the Water Supply (02) project in Guinea. Two of the three largest RBF projects managed to scale in similar countries. BRAC WASH Vouchers served 6,600,000 people in Bangladesh, and PLM served 1,900,000 people in Mozambique (both projects provided latrines).

Figure 0.3 shows that many RBF projects were highly effective in countries with low government capacity.

Figure 0.3: Government Effectiveness and Effectiveness (of RBF)



Note: While these points may seem to indicate a trend, the R-squared statistic of the linear regression was 0.17. The vast majority of the variation in RBF effectiveness was explained by something other than government effectiveness. Otherwise, ‘High effectiveness’ was defined as delivering 100 percent of targets. ‘Moderate’ was at least 50 percent and less than 100 percent, and ‘Low’ was below 50 percent.

RBF works for providing consumable goods in humanitarian emergencies.

Voucher projects have successfully used private goods provided WASH goods in areas affected by violent conflict and natural disasters. In Somalia, the WASH Cluster has been providing vouchers for households to buy containers of water from small vendors in conflict-affected areas—in 2014, the Cluster served 205,704 people. After the 2010 earthquake in Haiti, Oxfam used vouchers to help 440 families obtain hygiene goods, such as soap, from small shops.

Further Research Is Needed—It Should Be Built Into New Projects.

Much remains unknown: is RBF more effective, efficient, and sustainable than conventional public sector and donor projects; what factors allow RBF to reach scale; how can RBF work well to promote changes in sanitation and hygiene behavior? Answers are unlikely to be found from further study of existing projects. This is because existing RBF projects have not collected enough data—only 62 percent of key indicators were publicly available for projects in the sample. Moreover, the real question is not ‘whether RBF works’ but ‘in what circumstances, and with what designs, will RBF deliver better results than conventional projects?’ This cannot be answered at present. Even where there is data on the performance of RBF projects, there is not comparable data on conventional projects.

The way forward is for all RBF projects in WASH in the future to collect and publish a common minimum set of data, including targets, outputs achieved, costs, and whether delivery is sustained. This should be complemented by projects with built-in randomized controlled trials⁵, in which RBF and conventional projects with the same aims are implemented side-by-side, and compared on metrics such as effectiveness, efficiency, sustainability and impact. Finally, a serious effort is needed to develop RBF projects at scale. As this is done, ‘participant-observation’ records should be kept, to allow lessons to be learned.

⁵ Resources for conducting randomized trials to evaluate development projects are available at <http://www.povertyactionlab.org/methodology>.

1 Introduction

This report investigates what works where, and why, in Results-Based Financing (RBF) in Water, Sanitation, and Hygiene (WASH). In so doing, it also uncovers what does not work. It aims to create guidance for future interventions, and identify areas for further research.

Results-Based Financing (RBF) is an aid mechanism where payments are made upon verification of the delivery of desired outputs, or the performance of desired behaviors. RBF has been developed in the hope that it might deliver better results, at least in some settings, than conventional, input-based aid.

The Gates Foundation commissioned this assignment. It was carried out in consultation with a Reference Group of stakeholders from: the United Kingdom's Department of International Development (DFID), the World Bank's Water and Sanitation Program (WSP), the United Nations Children's Fund (UNICEF), the Water Supply and Sanitation Collaborative Council (WSSCC), the Netherland's Directorate-General for International Cooperation (DGIS), the Swedish International Development Cooperation Agency (SIDA), the United States Agency for International Development (USAID), and the Global Partnership on Output-Based Aid (GPOBA). Castalia was competitively selected to carry out the research.⁶

The WASH challenge

Inadequate access to safe water, sanitation, and hygiene services (WASH) poses a serious burden for the developing world. In 2012, 36 percent of the world's population (2.5 billion people) lacked access to improved sanitation facilities, and 14 percent (980 million people) resorted to open defecation. Although the Millennium Development Goal of 88 percent access to improved water sources was achieved in 2010, 11 percent of the population (770 million people) still lacked access to improved water sources in 2012 (Joint Monitoring Program, 2014). Poor access to safe water and sanitation spreads diseases, impedes access to education, and reduces workers' productivity (United Nations Children's Fund).

RBF could be a good alternative to conventional aid approaches

The need to expand coverage and quality of WASH services in developing countries, combined with limited funding to do, has generated an interest in RBF as a better way to use limited resources than conventional, input-based aid. This report aims to see if the potential advantages of RBF exist in practice. RBF could be more likely to deliver desired results than conventional aid—RBF only pays for outputs once they are delivered and verified, while conventional aid pays upfront in the hope of outputs being delivered. Money deployed through RBF may thus be less likely to be wasted. RBF specifies outputs, but leaves service providers to innovate around how to deliver them. Also, verifying outputs before paying for them could increase accountability of aid projects, if projects are transparent.

There are three types of RBF prevalent in WASH, which are defined in more detail in Section 4.2: Output-Based Aid (OBA), Conditional Cash Transfers (CCT), and Vouchers.

⁶ The Terms of reference are in Appendix C.

No overall evaluations of RBF in WASH have been done yet

No systematic studies of the efficacy of RBF in WASH have been conducted, although some reviews of RBF in WASH have been written. Studies of RBF in other sectors have not yielded definite conclusions on what types of RBF work well in what circumstances⁷. Nonetheless, there is strong interest in trying to use RBF—the range of organizations in the Reference Group for this report attest to this.

Box 1.1: Gaps in Knowledge

One of the objectives of this report was to identify gaps in knowledge. These gaps are presented in Section 13, and are followed by recommendations for how to fill some of those gaps (Section 14).

This report reviewed publicly available documents for 30 RBF projects in WASH (the methodology is discussed in more detail in Section 2). The quantity of documents available, and their quality, varied across projects. Eleven projects were studied in more depth through interviews with stakeholders.

Castalia made the strongest conclusions that they could with the information they could find. It was often not possible to make concrete recommendations on certain aspects of the practice of RBF in WASH. Section 12 shows that some RBF projects were not very transparent, and shows which data points were often not made available. Some data were reported inconsistently across different documents. Researchers cross checked data between multiple documents when possible, and resolved inconsistencies (including by obtaining more information from stakeholders).

Structure of this report

This report begins with a definition of and categorization of RBF (Section 2). Section 3 explains this report’s methodology. Section 4 presents the types of RBF used in WASH, and the sample of RBF projects examined in this assignment. Next, Section 5 presents common design features of RBF in WASH.

Chapters on the performance of RBF in WASH follow. Section 6 shows that RBF projects are often effective in terms of delivering target outputs, and that they seem to deliver the intended impacts (although data on impacts are limited). Then, Section 7 shows that RBF in WASH generally serves a small number of people relative to the scale of global gaps in access to WASH services. Section 8 shows that RBF projects may be as efficient as conventional aid projects. Section 9 presents data on the sustainability of RBF in WASH. The quality of services provided by RBF projects is discussed in Section 10.

The next chapters discuss what works well where, and makes recommendations to improve performance of RBF. Section 11 shows what works well for different types of RBF projects: those with public or private providers, voucher projects, and projects that aim to change sanitation behavior. Section 12 shows that the transparency of RBF projects is poor. Knowledge gaps that should be filled are presented in Section 13. Section 14 makes recommendations to fill those gaps. Lastly, Section 15 presents conclusions and guidance for future RBF interventions in WASH.

The bibliography is presented in Section 16. Appendix A shows the sources that were used to create the definitions of types of RBF used in this report. Appendix B lists tests of

⁷ A list of studies on RBF in electricity and health that were reviewed are shown in Appendix D..

potential factors of success for RBF that had inconclusive results. The Terms of Reference are in Appendix C. Appendix D shows reports on RBF from other sectors that were reviewed for this report. Appendix E shows the projects studied in the sample, and some basic data about them. Lastly, Appendix F shows the theory of change from the Hibah project in Indonesia.

2 Defining and Categorizing RBF

This report follows the World Bank in defining Results-Based Financing (RBF) as

“Any program that rewards the delivery of one or more outputs or outcomes by one or more incentives, financial or otherwise, upon verification that the agreed-upon result has actually been delivered. Incentives may be directed to service providers (supply side), program beneficiaries (demand side), or both. Payments or other rewards are not made unless and until results or performance are satisfactory; and they are not used simply to buy recurrent inputs—although the service providers who receive the payments may use the funds to purchase inputs (World Bank, 2014, p. 61).”⁸

This section distinguishes RBF from various closely related concepts, such as Payment for Results and PPPs in general. It then delineates four common types of RBF.

2.1 The Boundary between RBF and Other Incentive-Based Service and Delivery Mechanisms

This report examines RBF as a way to deliver aid in developing countries. This report distinguishes RBF from three closely related financing mechanisms: Payment for Results, Public Private Partnerships, and Viability Gap Funding. Those three mechanisms can also be used in WASH interventions, but are not examined in this report.

Payment for Results

Payment for Results (PfR) is close to RBF, as PfR pays governments for meeting specified targets. However, PfR delivers incentive payments to governments, rather than service provider. For example, a government could pay subsidies to a utility to expand sewerage coverage, and then receive a payment under PfR for expanding coverage. However, the incentive payment does not go the service provider—this differentiates PfR from RBF, where the incentive goes to the provider.

Public Private Partnership

Almost any kind of Public Private Partnership (PPP) contract could be considered to fall under the definition of RBF. If a private company operates water services under a PPP contract, and is paid for water delivered, then it is getting a payment that is dependent on provision of an output. If a private effluent treatment plant operator is paid for the amount of effluent treated, that too is payment for results.

However, in this report, arrangements in which government contracts directly for a service, such as operation of a utility or provision of a government facility, are excluded from the definition of RBF. For a project to qualify as RBF there has to be some additional financial mechanisms—such as a payment per connection. We also exclude concession contracts, under which the Government delegates provision of a public service to a private firm, and that firm is paid for the service by the customers. The exclusion of PPP contracts that do not have some additional payment for results element is a pragmatic one, intended to stop the research from turning into a review of ‘what works in PPP in water and sanitation’—a huge question which is not the focus of the ToR.

⁸ This excludes payments that go directly to governments, except in the case of a government-owned service provider (for example, a municipal water utility).

For example, a private company (Palyja) in Jakarta operates water services in parts of the city under a performance-based operations and maintenance contract. That PPP contract is not counted as RBF for our purposes. However, a scheme was then developed in which Palyja was paid a specified amount for extending new connections to poor households. This is counted as an RBF project. Similarly in Manila, the concession contracts which authorize private companies to supply water services to the public, and to collect tariffs for doing so, are not considered to be RBF. However, the OBA scheme which provided additional payments to Manila Water for connecting low-income households is included.

Viability Gap Funding (VGF)

Another border area is Viability Gap Funding (VGF). VGF is a public financial contribution to the capital costs of a project delivered under a PPP contract (VGF can also work with public service providers that aim to achieve cost recovery). The grant is intended to ensure that the project is viable as a business, even when tariff payments from consumers are not enough to cover the full cost of service. The funding given is equal to the gap between the present value of the revenues the project will generate, and the present value of the costs⁹.

VGF is therefore a payment to a private provider intended to allow it to deliver services under the PPP contract. The contract will then require the delivery of those services. Clearly, VGF is very like RBF. However, we exclude VGF from our definition of RBF, for two reasons. First, the payment is made before the outputs are delivered. For this reason, VGF payments do not fall within the literal definition of RBF used. Second, including VGF would have the same risk as including PPPs generally; it could make the enquiry too broad to be useful.

2.2 Types of RBF in All Sectors

There are four main types of RBF in common use in various sectors:

- Output-Based Aid
- Conditional Cash Transfers
- Voucher Programs, and
- Advance Market Commitments.

Definitions and examples of each type are shown in Table 2.1. This Table shows some examples from outside of WASH. Section 4 focuses on RBF in WASH.

⁹ Based on discussion of 'viability gap' in World Bank Institute & Public-Private Infrastructure Advisory Facility, 2012, p. 129

Table 2.1: Types of RBF

Name	Definition	Example (from outside WASH)
Output-Based Aid (OBA)	<p>In OBA projects, service delivery is contracted out to a service provider—public or private—which receives a subsidy to complement or replace the required user contribution.</p> <p>The service provider is responsible for pre-financing the project, and is usually reimbursed only after the services or outputs have been delivered and fully verified. Some OBA projects also provide upfront payments before any results are delivered.</p>	<p>One example is the Global Partnership on Output-Based Aid’s Decentralized Electricity for Universal Access project in Bolivia, which subsidized the cost of solar power systems for homes and public buildings in rural areas (World Bank, 2013).</p> <p>The project paid service providers for marketing, installing, and maintaining solar power systems.</p>
Conditional Cash Transfers (CCTs)	<p>CCT projects provide cash payments to poor households that meet certain behavioral requirements, generally related to children’s health care and education. CCT can be conditioned on individual, household, or community outcomes. These include rebates and community block grants that are conditioned on behavioral outcomes.</p>	<p>One example is the Bolsa Familia program in Brazil, which gives money to poor families if they meet certain conditions with respect to health of children and mothers, and school attendance for children.</p> <p>Conditions include children going to regular health checkups, mothers participating in nutrition seminars, and children attending school on at least 85 percent of school days each month (Lindert, Linder, Hobbs, & de la Brière, 2007).</p>
Voucher Programs	<p>In voucher projects, a consumer receives a redeemable voucher from a Government or donor agency, which can be exchanged for a specified good or service. The provider of the good or service then returns the voucher to the Government or donor agency, in exchange for cash.</p>	<p>One example is the Global Partnership on Output-Based Aid’s Uganda Reproductive Health voucher scheme, which sold vouchers for health services at very low prices (Global Partnership on Output-Based Aid, 2012).</p> <p>Women bought vouchers for around \$1.20, which covered fees for services which cost from around \$24 to \$78. Women gave vouchers to a service provider, who then submitted the vouchers to the scheme’s administering agency. The agency then reimbursed providers for the cost of services to voucher users.</p>

Name	Definition	Example (from outside WASH)
Advance Market Commitments (AMCs)	<p>AMCs have been used in health to stimulate the development of vaccines, and there is interest in seeing if AMCs could work in WASH.</p> <p>In AMC projects for health, donors or Governments commit money to subsidize the price of vaccines required by developing countries.</p> <p>This offers the necessary financial incentives for suppliers to develop the vaccines, including research and development.</p>	<p>One example in health is the GAVI Alliance, which finances the development of vaccines for pneumonia by guaranteeing the price of vaccines after development.</p> <p>This provides vaccine manufacturers with an incentive to invest in research and development, and the manufacturers sign an agreement to provide the vaccines to developing countries at a reasonable price (GAVI Alliance, 2012).</p>

Source: See 16.2 for the sources upon which the definitions were based.

3 Methodology

This report aimed to capture the whole population of RBF projects in WASH, and then analyze a representative sample of the population. This ensured that the report's conclusions were based on reasonable evidence, and allowed the current state of RBF to be understood. First, a census of all RBF projects in WASH was created. Then, a sample of 30 projects was selected from the census. The sample only included projects that were expected to have progressed far enough to yield results. Documents were reviewed and stakeholders were interviewed, to collect data on the projects in the sample. Last, the data was analyzed to learn how RBF is used in WASH, how well it performs, and how it could be improved.

3.1 Creating the Census

The research started by building a census of all known RBF projects in WASH. There is no existing census of all RBF projects, so we created one by relying on our own knowledge, consulting with Andrew Robinson¹⁰, and searching the following sources:¹¹

- Water and Sanitation Program website (<http://www.wsp.org/>)
- Sustainable Sanitation Alliance Website (<http://www.susana.org/>)
- Global Partnership for Output-Based Aid website (<https://www.gpoba.org/>)
- Reports on RBF sent by the Gates Foundation
- Other reports on RBF found through searching on Google

Through this process we initially identified 65 RBF projects in WASH—this census was presented in the Inception Report, and reviewed by the Reference Group. During research it became clear that three projects in the original census were actually not RBF, and the census was reduced to 62 projects. The final census containing 62 projects is shown in Table 4.1.

For each project in the census, key parameters were gathered for use in sampling. In particular, to allow stratified sampling (discussed in Section 3.2) we recorded whether the project involved OBA, vouchers, or CCT, and also whether it covered water, sanitation, or both. We also recorded whether the project was far enough into implementation to have generated results. Some projects are still in planning.

3.2 Selecting the Sample

From the original census of 65 projects we selected a sample of 30 to research. We used a stratified sampling technique to ensure that a representative number of all types of RBF, and of water and sanitation were examined. For sampling, we first excluded the 24 projects thought to have not yet generated results, leaving 41 projects to draw from.

The sampling process drew from a stratified sample of RBF projects across water and sanitation, and the three main types of RBF in WASH (see Section 4). Stratified sampling means drawing random samples from a number of subsets of the sample.

¹⁰ Mr. Robinson is a development consultant with 27 years of experience in WASH.

¹¹ These sources referenced projects from a range of donors, so we found a comprehensive set of projects in WASH.

Using a stratified sample ensured that all WASH sectors and types of RBF were studied. As OBA is far more common in WASH than the other types, a simple random sample from the whole census could completely leave out some of the less common types of RBF.¹² Therefore, all projects in the census that were not OBA were included in the sample.

Within OBA, we drew stratified random samples. All OBA projects that cover both the water and sanitation sectors were included, as there were only five. Water-only and sanitation-only OBA projects were selected randomly with the help of Research Randomizer¹³. Each project in the database was assigned an ID number, and the ID number was linked to a random number from Research Randomizer.

As our research progressed, it became clear that some projects thought to have generated results actually had not done so. Projects in the sample that had not generated results were removed from the sample, and replaced. Whenever possible, to maintain stratification, projects were replaced with a project from the same strata having the next highest ID number in the database. The final sample is presented in Section 4.2.

3.3 Desk Study

Publicly available documents were reviewed for all 30 projects in the sample. Literature was found by searching through donor websites, and using Google. Documents were provided by stakeholders for some projects¹⁴. GPOBA also provided documents and clarification of data for its projects. The majority of the literature reviewed was from donors.

Documents reviewed included planning documents, results reports, evaluations, and research studies. Some projects had many documents available—the team cross-checked information between documents, and resolved inconsistencies when they were found. This included reaching out to project stakeholders for clarification. GPOBA staff were very helpful in resolving inconsistencies. Some projects had few documents available, and the research team used the limited data therein. Section 12 shows that some types of data were particularly hard to find, indicating that most RBF projects are not as transparent as they should be.

3.4 Interviews

Eleven projects from the sample were selected for in-depth examination through interviews. Projects for interviews were chosen based on a number of criteria:

- Whether Castalia knew the project, or people associated with it, as this made it easier to get people to agree to be interviewed;
- Achieving a representative distribution across WASH sectors and types of RBF;
- A need to get more data on projects for which little data was available in public documents;
- Whether the project had interesting design features to explore; and

¹² Chapter 7 of Crawford, 1997 was consulted for guidance on stratified sampling

¹³ <http://www.randomizer.org/>

¹⁴ Generally, only those projects for which stakeholders were interviewed (see Section 3.4).

- Enabling interesting comparisons between projects—for example, the Hibah and Surabaya Water projects were chosen because they were both OBA projects in Indonesia with public providers, but different in how they used existing local systems.

The interview sample is shown in Section 4.2

For each of these projects, Castalia staff contacted donors, service providers, Governments, and community organizations involved. Names and contact information for interviewees were found in the literature review, or by reaching out to Castalia’s contacts. Most interviewees worked for the donor organizations that implemented the scheme, as other stakeholders could not be reached. This introduces a possible bias in the results. People were asked to participate in interviews through emails or phone calls. Interviews focused on stakeholders’ opinions on what worked well or poorly in the projects, and why. Interviews also filled in data gaps from the desk study when possible.

3.5 Indicators of Success

Projects in the sample were examined to see if they were successful. Success was judged against the Organization for Economic Cooperation and Development’s criteria for development effectiveness.

Table 3.1: OECD Development Effectiveness Criteria

Effectiveness	Effectiveness measures the extent to which a development project achieved its objectives. For the purposes of this report, effectiveness focuses on how close projects came to delivering the target number of outputs.
Efficiency	Efficiency measures how well an aid project uses resources in order to obtain desired results. For the purposes of this report, efficiency focuses on converting inputs in to outputs (turning money into water connections, changed sanitation behavior, and so forth...).
Impact	Impacts are changes produced by projects’ outputs. Reduced incidence of waterborne diseases through improved access to safe water is an impact. Installation of water connections alone would not be an impact.
Sustainability	Sustainable projects are those with benefits that are likely to continue after donor funding has been withdrawn.

Source: <http://www.oecd.org/development/evaluation/daccriteriaforevaluatingdevelopmentassistance.htm>

Relying on these criteria allowed the report to present the extent to which RBF does or does not work, and what cannot be judged due to lack of data. More important than measuring the extent of success is understanding what drives success. We tested the influence of various factors on success by grouping projects by their relative success against different criteria, and looking for patterns and correlations in underlying factors that may have influenced success. We also analyzed and reported on data availability, to assess transparency and the need for additional research.

4 RBF Projects: Census and Sample Selected

This section presents all the projects identified in the census of RBF in WASH, and the subset included in the research sample. The projects in the census and the sample were from all WASH sectors, and included three types of RBF: Output-Based Aid (OBA), Vouchers, and Conditional Cash Transfers (CCT). These types of RBF are explained in more detail in Section 4.2.

4.1 Projects in the Census and Sample of RBF in WASH

A total of 62 RBF projects in WASH were identified, as mentioned in Section 3.1. Table 4.1 lists them by RBF type and by sector. Note that GPOBA is a special trust fund at the World Bank which is focused on RBF—for the purposes of this report, GPOBA projects are separated from other World Bank projects which used RBF. The projects in the research sample are highlighted: the 11 that were selected for interviews are highlighted in orange, and the projects which were only examined by desk research are in green.

Table 4.1: Census of RBF Projects in WASH

Project Name	Funder	RBF Type	Sector	Note
Bangladesh: Rural Multi-Sector (World Bank)	World Bank, GPOBA (TA only)	OBA	Water	
Bangladesh: Social Investment Program (World Bank)	World Bank	OBA	Water	
Brazil: Water in Manaus (GPOBA)	GPOBA	OBA	Water	Project planned, but not implemented
Cambodia: Small-Scale Water (World Bank)	World Bank, GPOBA (TA only)	OBA	Water	
Cameroon: Affermage (GPOBA)	GPOBA	OBA	Water	
Chile: MIDEPLAN Program	National Government	OBA	Water	
Guinea: Water Supply (02) (World Bank)	World Bank	OBA	Water	
India: Andhra Pradesh Rural Water (GPOBA)	GPOBA	OBA	Water	
Indonesia: Jakarta Water (GPOBA)	GPOBA	OBA	Water	

Project Name	Funder	RBF Type	Sector	Note
Indonesia: PAMSIMAS (World Bank)	World Bank	OBA	Water	
Indonesia: Second Generation	AusAID	OBA	Water	
Indonesia: Surabaya Water (GPOBA)	GPOBA	OBA	Water	
Kenya: Microfinance for Community Water Projects (GPOBA)	GPOBA	OBA	Water	
Mexico: PROME (World Bank)	World Bank	OBA	Water	
Mozambique: Water Private Sector Contracts (GPOBA)	GPOBA	OBA	Water	
Nigeria: Urban Water (World Bank)	World Bank, GPOBA (TA only)	OBA	Water	Cancelled. A feasibility study found it was not viable.
Paraguay: Fourth Rural WSS (World Bank)	World Bank	OBA	Water	
Philippines: Manila Water (GPOBA)	GPOBA	OBA	Water	
Uganda: Small Town and Rural Water (GPOBA)	GPOBA	OBA	Water	
Uganda: Water for the Poor (GPOBA)	GPOBA	OBA	Water	
Uganda: Water OBA Operation Framework (GPOBA)	GPOBA	OBA	Water	Not yet implemented. GPOBA funded TA on a national OBA framework.
Vietnam: East Meets West Rural Water (GPOBA)	GPOBA	OBA	Water	
Yemen: Urban Water (GPOBA)	GPOBA	OBA	Water	This project was cancelled.

Project Name	Funder	RBF Type	Sector	Note
Brazil: PRODES	National government	OBA	Sanitation	
Egypt: Gharbeya Wastewater (GPOBA)	GPOBA	OBA	Sanitation	Cancelled. GPOBA funded TA which found it viable.
Ghana: Accra Sanitation (GPOBA)	GPOBA	OBA	Sanitation	
Mali: Solid Waste (GPOBA)	GPOBA	OBA	Sanitation	In planning.
Mexico: National Wastewater OBA (GPOBA)	GPOBA	OBA	Sanitation	GPOBA only funded TA for studying OBA as a way to improve fiscal efficiency.
Mozambique: PLM	International donors (unspecified)	OBA	Sanitation	
Nepal: Solid Waste (GPOBA)	GPOBA	OBA	Sanitation	
SAWiSTRA	Gates Foundation	OBA	Sanitation	Planned, but cancelled because the Ghanaian parliament did not approve it
Senegal- On-Site Sanitation (GPOBA)	GPOBA	OBA	Sanitation	
Senegal: PAQPUD (World Bank)	World Bank	OBA	Sanitation	
Sri Lanka: Colombo Wastewater (GPOBA)	GPOBA	OBA	Sanitation	
Uruguay: OSE Modernization (World Bank)	World Bank	OBA	Sanitation	
West Bank and Gaza: Solid Waste (GPOBA)	GPOBA	OBA	Sanitation	
Armenia: Yerevan Water and Waste Water (GPOBA)	GPOBA	OBA	Water and Sanitation	Cancelled. GPOBA funded TA which found it viable.
Brazil: OBD for WSS in Two States (World Bank)	World Bank, GPOBA (TA only)	OBA	Water and Sanitation	

Project Name	Funder	RBF Type	Sector	Note
Brazil: Sao Paolo REAGUA	State government	OBA	Water and Sanitation	
Cambodia: Typhoon Recovery (World Bank)	World Bank and GPOBA	OBA	Water and Sanitation	Not implemented by WB. GPOBA funded TA.
Global: DFID WASH Results Program	DFID	OBA	Water and Sanitation	
Honduras: Extension of Water and Sanitation (GPOBA)	GPOBA	OBA	Water and Sanitation	
Indonesia: Hibah	AUSAID, USAID	OBA	Water and Sanitation	
Jordan: Water & Wastewater OBA	Millennium Challenge Corporation, GPOBA	OBA	Water and Sanitation	GPOBA funded TA, but project has not been implemented by MCC.
Kenya: Nairobi Low-income Communities (GPOBA)	GPOBA	OBA	Sanitation	
Kenya: WSS in Kisumu (GPOBA)	GPOBA	OBA	Water and Sanitation	Not implemented. GPOBA funded TA.
Kenya: WSS Small and Medium Towns (GPOBA)	GPOBA	OBA	Water and Sanitation	
Mexico: Decentralized Loan (World Bank)	World Bank	OBA	Water and Sanitation	
Morocco: Improved Access (GPOBA)	GPOBA	OBA	Water and Sanitation	
Morocco: Rural WSS (GPOBA)	GPOBA	OBA	Water and Sanitation	Not implemented. GPOBA funded TA.
Australia: Water Payment Assistance (PAS)	State government	Voucher	Water	

Project Name	Funder	RBF Type	Sector	Note
Somalia: WASH Cluster	Various local and international NGOs	Voucher	Water	
Bangladesh: BRAC WASH Vouchers	Gates Foundation, DFID	Voucher	Sanitation	
Cambodia: Grow Up with a Toilet	None (funding not yet secured)	Voucher	Sanitation	Limited planning, not funded as of January 11, 2015.
Haiti: Oxfam Hygiene Vouchers	Oxfam	Voucher	Sanitation	
Philippines: Disaster Vouchers	Oxfam	Voucher	Water and Sanitation	
USA: NYC Toilet Replacement	City government	Voucher	Sanitation	
Bangladesh: DISHARI	Did not find information	CCT	Sanitation	
India: Nirmal Gram Puraskar	National Government	CCT	Sanitation	
Cambodia: East Meets West Toilet Rebate	Gates Foundation	CCT - rebate	Sanitation	
USA: Madison Water Conservation	City government	CCT - rebate	Sanitation	
Vietnam: East Meets West Toilet Rebate	Gates Foundation	CCT - rebate	Sanitation	

4.2 Description of RBF Projects in WASH

Table 4.2 shows the prevalence of types of RBF in the WASH census. Of the four types of RBF mentioned in Section 2.1, all but AMCs are used in WASH.

Table 4.2: Distribution of RBF Projects in WASH in the Census

	Total WASH		Water (only)		Sanitation (only)		Both Water and Sanitation	
	No.	%	No.	%	No.	%	No.	%
Total Projects	62	100%	26	42%	22	35%	14	23%
OBA	50	81%	24	39%	13	21%	13	21%
Voucher	7	11%	2	3%	4	6%	1	2%
CCT	2	3%	0	0%	2	3%	0	0%
CCT-rebate	3	5%	0	0%	3	5%	0	0%
AMC	0	0%	0	0%	0	0%	0	0%

Note: Percentages may not add due to rounding.

OBA is by far the most common type of RBF in WASH (81 percent), followed by vouchers (11 percent), and then CCTs (8 percent). OBA and voucher projects have been used for both water and sanitation. However, CCT has only been used for sanitation. Each type is discussed further below.

Output-Based Aid (OBA): In OBA projects, service delivery is contracted out to a third party—public or private—which receives a subsidy to complement or replace the required user contribution.

Our census found 50 of these projects in WASH. Of the OBA projects in the census, 46 percent provided water only, 26 percent provided sanitation only, and 28 percent provided both water and sanitation. In WASH, OBA projects subsidize a range of outputs in water and sanitation. These include household water connections, public water points, household sewerage connections, and on-site sanitation systems.

One example of OBA is the Water Hibah in Indonesia, which pays local governments for providing water or sanitation connections to new households. Payment is released after independent verification that the new connection has worked for a minimum of three months (Kimberley, 2012).

Conditional Cash Transfers (CCTs): CCT projects provide cash payments to poor households that meet certain behavioral requirements.

Our census found five of these projects in WASH. All the CCT projects provided sanitation only. In WASH, the behavior requirements have thus far been sanitation practices. CCT can be conditioned on individual, household, or community outcomes (Robinson, 2014).

One example is the Nirmal Gram Puraskar (NGP) program in India. This program provides payments to villages upon verification that there is no open defecation occurring. (United Nations Childrens Fund, 2008). The incentives are conditioned on people actually using

sanitation facilities. The project also verified installation of latrines in some public buildings, among other non-behavioral criteria.

CCT also includes rebate programs, where a cash payment is used to cover investment in equipment required to meet the behavioral condition that triggers the payment. Three of the CCT projects included rebates. For example, the East Meets West Foundation (EMWF) toilet rebate projects in Cambodia and Vietnam provide a rebate to households that build and use hygienic toilets. Low-income households must pay for installing toilets, and then they receive a rebate after the use of toilets is verified. This rebate helps cover the cost of building the toilet (Jenkins, Hien, Canada, Brown, & Sobsey, 2011). These CCTs rewards behavior by helping repay capital expenses needed to carry out the desired behavior—it is a variation on the type of payment provided by CCT, but is not treated as significantly different than ‘regular’ CCT in this report.

Voucher Programs: In voucher projects, a consumer receives a redeemable voucher from a Government or donor agency. The voucher can be exchanged for a specified good or service. The provider of the good or service then returns the voucher to the Government or donor agency, in exchange for cash.

Our census found seven of these projects in WASH (one of which was a joint voucher and CCT program). Of the voucher projects, 29 percent provided water only, 14 percent provided water and sanitation, and 57 percent provided sanitation only.

One example is BRAC’s WASH program in Bangladesh, which gives households vouchers that can be applied to part of the cost of materials for building a latrine. Depending on the wealth of the household, the voucher is either a grant or loan for part of the cost of a latrine. The household takes the voucher to a supplier, and uses it to cover part of the cost of purchasing materials. The supplier then uses the voucher, along with other documentation, to prove to BRAC that materials were properly distributed to beneficiaries. The supplier then is reimbursed by BRAC for the value of the voucher.

Advance Market Commitments (AMCs): AMCs were not found in WASH. AMCs have been used in health to stimulate the development of vaccines, and there is interest in seeing if AMCs could work in WASH. AMC projects could, in principle, be used to develop new water or sanitation technologies. AMC projects were not examined in depth in this assignment, as they are intended to support development of technologies rather than provision of services.

4.3 Descriptive Statistics on the Sample

The distribution of projects in the sample by sector and RBF type is shown in Table 4.3. The sample has a higher proportion of water projects (compared to the census). Only projects that were likely to have delivered results were included in the sample. There are more long-running water projects than sanitation projects. To ensure adequate representation of sanitation projects, every sanitation project that was expected to have delivered results was included in the sample. The distribution of projects selected for interviews is similarly shown in Table 4.4.

Table 4.3: Distribution of Projects in the Sample

	Total WASH			Water (only)			Sanitation (only)			Both Water and Sanitation		
	No.	% of Sample	% of Census	No.	% of Sample	% of Census	No.	% of Sample	% of Census	No.	% of Sample	% of Census
Total Projects	30	100%	48%	15	50%	24%	10	33%	16%	5	17%	8%
OBA	22	73%	35%	13	43%	20%	5	17%	8%	4	13%	6%
Voucher	4	13%	6%	2	7%	3%	1	3%	2%	1	3%	2%
CCT	2	7%	3%	0	0%	0%	2	7%	3%	0	0%	0%
CCT-rebate	2	7%	3%	0	0%	0%	2	7%	3%	0	0%	0%

Note: Percentages may not add up due to rounding.

The majority of the projects are from the World Bank or GPOBA (a World Bank trust fund that is devoted to RBF).¹⁵ This reflects the World Bank and GPOBA's large role in RBF projects implemented thus far. Seven projects in the sample (23 percent) were funded by the World Bank, and 11 (37 percent) were funded by GPOBA. The remaining 12 projects (40 percent) were funded by a range of donors.

¹⁵ For the purpose of describing donors in this report, 'World Bank' means the World Bank except for GPOBA. GPOBA is treated as a separate entity because it has a mandate for RBF. However, GPOBA does not run all RBF for the World Bank.

Table 4.4: Distribution of Projects Selected for Interviews

	Total WASH			Water (only)			Sanitation (only)			Both Water and Sanitation		
	No.	% of Census	% of Interviews	No.	% of Census	% of Interviews	No.	% of Census	% of Interviews	No.	% of Census	% of Interviews
Total Projects	11	37%	100%	5	17%	45%	5	17%	45%	1	3%	9%
OBA	6	20%	55%	4	13%	36%	1	3%	9%	1	3%	9%
Voucher	3	10%	27%	1	3%	9%	2	7%	18%	0	0%	0%
CCT	1	3%	9%	0	0%	0%	1	3%	9%	0	0%	0%
CCT-rebate	1	3%	9%	0	0%	0%	1	3%	9%	0	0%	0%

Note: Percentages may not add up due to rounding.

5 Design: Process and Choices

This section describes common design features of RBF projects in WASH, and the processes through which they are designed. It begins with a discussion of Theories of Change (ToC) for RBF, which donors use to establish how interventions should convert inputs into desired impacts. Then, processes used to plan projects, including consulting with Governments, are discussed. Risk allocation in RBF comes next, showing how different types of RBF may shift risk away from Government to other entities. After that, verification and monitoring methods used to certify delivery outputs and release payments are discussed. Then, the types of service providers commonly used in RBF are presented, followed by common interventions in different stages of the sanitation value chain. Last, differences between urban and rural projects are discussed.

5.1 Theory of Change

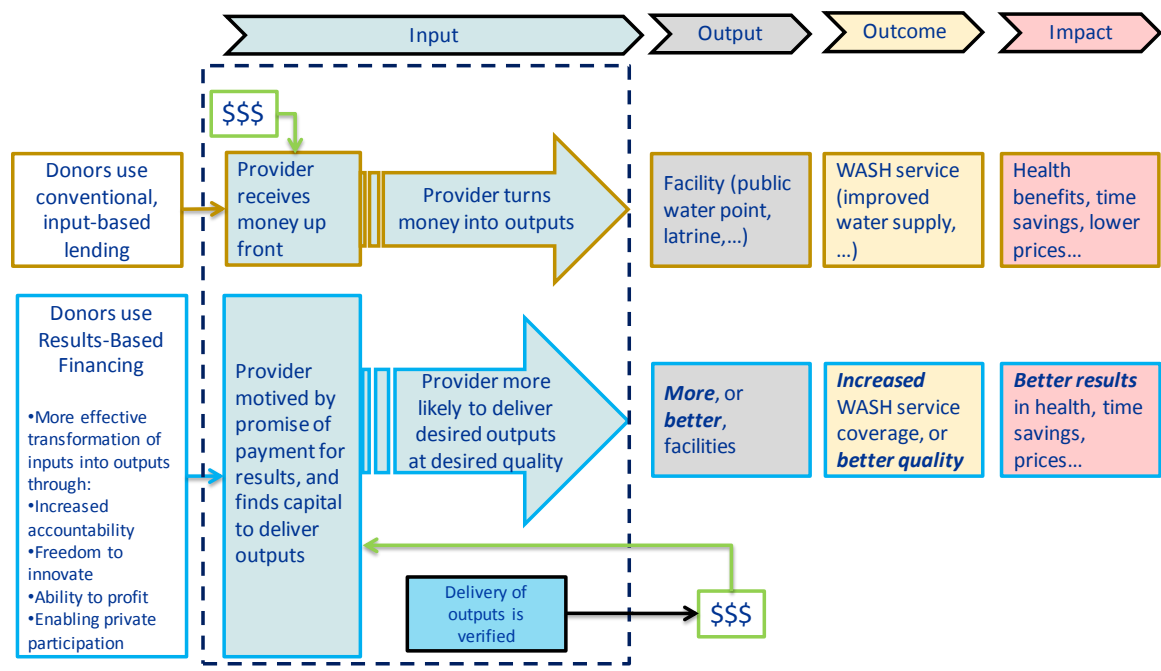
A Theory of Change (ToC) is a way to describe the assumptions and logical reasoning underlying how a development intervention should obtain its intended results (Stein & Valters, 2012). Generally, no explicit ToCs were found for the RBF projects in the sample. However, an implicit ToC can often be deduced from an RBF project's structure.

A ToC was available for Indonesia-Hibah project (see Appendix F). In this ToC, donors would provide money for a national fund which municipal utilities would then apply to for money to improve WASH infrastructure. This would then result in the outcome of greater access to WASH services, and the impacts of improved health and quality of life. The ToC also aimed to help the Government of Indonesia work towards its Millennium Development Goals in water and sanitation (the project served municipalities around the country) (Averill, Scally-Irvine, Nordiawan, Howard, & Gouy, 2011).

Almost all projects in WASH—conventional or RBF—take money as an input, and aim to turn it into WASH facilities as outputs. These facilities should then provide the outcome of WASH services. The services should lead to impacts such as lower incidence of diarrheal disease, less time spent obtaining water, or lower water prices.

RBF projects differ from conventional ones in how they transform money into desired outputs. RBF projects start with the promise of payment for results as an input, which motivates service providers to deliver outputs. Money is then provided once outputs are delivered and verified. Conventional projects start with money as the initial input, rather than the promise of a contingent payment. This is shown in Figure 5.1.

Figure 5.1: Theory of Change for RBF in WASH



In other words, it is theories about how RBF can change the way in which inputs are turned into outputs that underlies most RBF project designs. These theories are not always made explicit in project design documents. Nevertheless, our interviews, and previous experience in the area, suggest that one or both of the following two theories underlies most RBF projects.

RBF enables better accountability, and thus allows for better use of funds. RBF is more efficient because RBF payments are only given when service providers deliver something valuable. If a service provider tries to deliver outputs but fails, the provider (or its creditors) has to bear the cost of failure. This can translate to greater value for money for donor or government spending in some situations where input-based financing is less likely to deliver the desired results.

RBF can also serve as an alternative monitoring mechanism for public funding. One interviewee cited greater accountability of public funds as an important advantage of RBF (Mandri-Perrot, 2014). Greater accountability is a major reason for interest in RBF in development (Brooks & Smith, 2001; World Bank, 2014).

All else being equal, increased accountability is an improvement on its own—most taxpayers would probably prefer that service providers bear the cost of mistakes rather than the government. However, RBF will only enhance accountability to tax payers in donor countries, and beneficiaries, if RBF projects are transparent (see Section 12).

RBF allows freedom to innovate because it specifies the desired outputs, but not the means to deliver them. This allows providers to choose the best ways to deliver outputs at the desired quantity and quality. This avoids creating barriers for providers through well-intentioned, but poorly designed, service delivery processes.

RBF creates profit incentives, which clearly motivate profit-seeking businesses, but also allow nonprofits and public entities to reduce costs below the specified payment for outputs, and then devote the difference to other productive ends. Private firms can create profits by lowering their costs for delivering each output below the payment for each output. The potential for gaming the system by using poor materials or shoddy workmanship is reduced by linking outputs to quality standards or proxies for quality (such as releasing the final payment after bills are collected for three months of high quality service from a water connection). A former Task Team Leader for the Honduras: Extension of Water and Sanitation project thought that town mayors would be incentivized to reduce costs and then spend the ‘profit’ on other activities which would increase their political notoriety.

RBF enables efficient private providers to deliver services by providing a subsidy to cover a viability gap. Such subsidies help cover gaps between the prices poor customers are willing to pay, and the costs that providers incur for providing service. Private providers can potentially access capital, have high capacity, be free of bureaucratic hindrances, and respond to incentives. Two interviewees saw this is an important advantage of RBF (Advani, 2014; Mandri-Perrot, 2014). Enabling private participation was one of the initial reasons RBF was considered in development (Brook & Smith, 2001).

The path from output to impact is the same under RBF or conventional projects, as long as they are delivering the same outputs. For example, water connections of equal quality should deliver the same health benefits regardless of how they were financed. However, as shown above, RBF should increase the likelihood that the desired number of outputs is delivered at the desired level of quality.

RBF is not the only way to subsidize services from private providers—there may be cases where non-RBF subsidies work at least as well, if not better, than RBF. In principle, various delivery and funding options should be compared to decide which approach is best in any given situation. The following section presents what we were able to discern about real-life design processes for projects in the sample.

5.2 Design Process

Most projects in the sample were developed with the help of donors. As with many donor-supported projects, the design process is opaque. Who suggested a project, who suggested that RBF be used, and who designed the mechanism, is often not documented. Projects require some input from donors and some input from Government, but donors and Governments are both in the habit of over-attributing agency to the Government (to avoid any impression of donor capture). This section therefore relies on those interviewees who were candid about the design process, and Castalia’s experience working on numerous RBF projects in WASH.

In most cases, the suggestion to use RBF in project design came from donors or international consultants. Suggesting better ways of doing things is an essential part of donors’ and consultants’ jobs. However, the corollary is that often the design is done by international experts. In some cases local input and ownership is quite limited. The reasons RBF was chosen for specific projects were not found.

The Manila Water OBA project is case in point. Donor funds had been allocated for a provincial water OBA project. However, the intended recipients decided they did not want to proceed with it. The donor team approached Manila Water and got support for OBA for low-income areas in Manila. The agreement of relevant governmental authorities was secured, but the scheme was largely donor-designed. There was no evidence that other, non-OBA options were considered to achieve the same goals.

Similarly, the Surabaya Water OBA project was promoted by a donor team that sincerely believed in OBA and wanted to demonstrate that it works.¹⁶ However, the design chosen was difficult to make work within the Indonesian legal and administrative system. It was complex, partly because of various work-arounds intended to make it fit into a system it was not easy compatible with. The team that designed the scheme was comfortable with the complexity, but some of the Indonesian officials involved were not.

The Indonesia Water Hibah provides a contrast to the Surabaya OBA project. Both projects use OBA to fund expansion of water utility connections by municipal water providers in Indonesia. Both mechanisms were originally suggested by the World Bank or its consultants. However, the Water Hibah was designed around an inter-governmental fiscal transfer mechanism that existed in Indonesia's public finance laws, but had not yet been used. Moreover, it responded to strong interest in the government department responsible for water and sanitation, and the Ministry of Finance, in getting local municipalities and water utilities to stop hoarding cash and instead to invest it in water service expansion. A small group of government officials in the Department of Finance became convinced that the mechanism could work. They then worked closely with the consultants on the design. The consultants and the Ministry team together sought support from AusAid for financing, after the World Bank indicated it would not fund the mechanism.

The Water Hibah performed successfully in its Phase 1, and has received funding to scale up to serve an additional 300,000 households. An evaluation said that the project's progress is "commendable," especially in light of the relatively short time it took to deliver outputs (Averill, Scally-Irvine, Nordiawan, Howard, & Gouy, 2011). That same evaluation claims that the Hibah's success has caused the Government of Indonesia to explore using OBA in other sectors. A local government official was quoted in the evaluation as saying

The government admits that this [the Hibah] is something good, something that can be replicated in other areas for other programs.

These successes seem largely attributable to the fact that the design responded to a pre-existing government priority; used a mechanism that already existed and was of entirely local origin; and was guided by the officials who would have to implement it.

One scheme that seems to have been developed largely by the Government concerned is PRODES in Brazil, which uses RBF to promote wastewater treatment. It started in 2001 without any outside assistance that we have been able to identify (Agência Nacional de Águas, 2009). GPOBA proposed to assist with ways to make the program more effective in 2008, but that technical assistance never went ahead (Global Partnership on Output-Based Aid).

¹⁶ Beneficiary countries do officially request aid from the World Bank (and its trust funds like GPOBA) in writing. However, donors can influence beneficiaries' requests for aid.

5.3 Risk Allocation

Most RBF projects in WASH allocate all risks to the service provider. If the service provider is private, then the risk is allocated to firms, and ultimately their investors. If firms are providing a service that is traditionally provided by Government, then risk has been transferred from the public sector to the private sector. If the service provider is public, then the risk is allocated to Government.

Common risks in WASH projects are listed in Table 5.1. Initial risks occur during the planning and construction of a facility. Ongoing risks occur when a facility is operational, after construction is done.¹⁷

Table 5.1: Common Risks in WASH Projects

	Risk	Definition
Initial Risks	Construction cost	The costs of building a facility may rise unexpectedly. For example, the price of cement to build latrines may rise due to trends in the wider market for building materials.
	Design	Facilities could have design problems which incur maintenance or replacement costs in the future. For example, poorly designed sanitation facilities may leak waste into households or yards, and require costly repairs.
	Financing	Changes in the economy may change the terms with which credit is offered. For example, if a central bank raises interest rates, then the loans offered to a provider will increase, regardless of the quality of the project the provider plans to deliver. This is usually an initial risk, but interest rates can also change during the course of a project.
Ongoing Risks	Demand	Customers may not desire services as much as providers had expected. For example, rising incomes could reduce the demand for water from public water points, as more people can afford household connections.
	Maintenance	Facilities can have unexpected, and costly, maintenance needs. For example, a concrete slab covering a latrine could crack.
	Operating cost	Recurrent operating expenses may unexpectedly rise. For example, the price of power to run a water system may rise due to shortages of electricity.
	Payment	Customers may not pay as much as providers had expected. For example, more customers could fail to pay bills during an economic recession, and reduce revenue for a water utility.
	Resource availability	The price of needed resources may rise unexpectedly. For example, the price of raw water may rise during a drought.

¹⁷ This table focuses on external risks—projects may also face internal challenges, such as challenges in managing unpredictable cash flows in RBF.

Risk allocation depends on whether the provider is meant to provide a continuing service (such as a utility water supply) or a one-off asset transfer, such as an on-site sanitation facility. It also depends on whether the provider is public or private. A discussion of who bears these risks in different types of projects follows.

In projects that provide on-site facilities, risk is split between the service provider and the households that receive facilities. Service providers supply materials for households to use to build facilities, or build facilities for households. In either case, once the facility is built and the RBF payment made, the household is responsible for any ongoing expenses. As an example, in the On-Site Sanitation project in Senegal, service providers (construction firms that build latrines) bear the initial risks. If construction costs are unexpectedly high, the providers still receive the fixed RBF payment, and must bear the cost of losses.¹⁸ After latrines are built, the customers (households) are responsible for any expenses in operating or maintaining latrines. The project makes no provision for emptying or moving latrines.

Most RBF projects fund utility infrastructure that the provider is expected to use to provide a continuing service. As an example, the Paraguay: Fourth Rural WSS (World Bank) funds water connections which are provided by small private firms.

Where RBF projects support continuing service, risks that crystalize before the RBF payments are made in full are born by the provider. For example, even if it costs the provider more to provide the output than was expected, the RBF payment remains the same¹⁹. The additional cost of the output must be absorbed by the provider.

Less obviously, the risk of continuing service provision is also largely born by the private provider, even after the last RBF payment has been made. The provider will typically have a regulatory obligation to serve at a specified level of quality, so if maintenance costs increase, for example, the provider will have to bear those costs and continue to provide service. Some of the risks will be shared with customers. If operating costs increase for the utility as a whole, most regulatory systems will allow the utility to increase charges to the customers. Thus the exact allocation of risk between a private utility service provider and its customers depends on the regulatory regime. If any of the adverse outcomes that are associated with ongoing risks occur, then service providers may fail to repay creditors (if the provider borrowed money), or not recover working capital they had spent.

If the service provider is public, all risk is allocated to the Government, and ultimately taxpayers. RBF may claim to transfer risk, but where providers are public it generally shuffles it out of one government pocket and into another (from the national budget to the utility, and then ultimately to taxpayers in terms of implicit financial backstops for the utility). For example, the Water for the Poor project in Uganda has a government utility as a service provider. The provider bears the initial risks—if design problems cause work to be redone, the provider still receives the fixed RBF payment, and must bear the related losses. Ongoing risks are still born by the provider. If shoddy construction means the infrastructure

¹⁸ Non-RBF projects also face construction cost risk, but are impacted by it differently. In input-based projects, rising construction costs mean that fewer outputs will be delivered under the budget (each output costs more, but the budget is fixed). In RBF, outputs may not be delivered at all if costs rise sufficiently—the fixed value RBF payments will not suffice to make the outputs economically viable.

¹⁹ No evidence was found of any projects providing for adjusting payments for costs over time. RBF payments were specified in terms of specific amounts of currency. However, terms could potentially be renegotiated.

deteriorates quickly, then either the government’s contribution to the utility will need to increase, or customers will suffer as service deteriorates.

Voucher projects that provide consumables, and CCT projects, have different risks. The risks in Table 5.1 do not generally apply, as nothing is being constructed. In voucher projects that provide consumables, providers (vendors) bear demand risk, and consumers bear the risk of poor product quality. In CCT projects, the risk that incentive payments do not result in the desired behavior change lies with whoever funds the project (Government or donors).

These risk allocations are summarized in Table 5.2.

Table 5.2: Allocation of Risks

		Before last RBF payment		After last RBF payment	
		Initial risks	Ongoing risks (early)	Ongoing risks	Transmission of risk from provider to other parties
Ongoing service provider	Public provider	Provider	Provider	Provider	Taxpayers, consumers
	Private provider	Provider	Provider	Provider	Investors, consumers
On-site facilities		Provider	Consumer	Consumer	n/a
Vouchers for consumables		Provider	Consumer	Consumer	n/a
CCT		Funder	Funder	Funder	n/a

Projects that provide bridge financing also have credit risk, which is allocated to the lender. These projects are listed in Table 5.3. For public banks, risk can flow through to taxpayers. For private banks, risk can flow through to investors.

Table 5.3: OBA Projects Which Help with Bridge Financing

Project	Who Borrows	Who Lends, and Bears Credit Risk
Honduras: Extension of Water and Sanitation (GPOBA)	Large private service providers and small public service providers	NGOs
Indonesia: Second Generation	Small public service providers	Public banks (taxpayers) Private banks (investors)
Kenya: Microfinance for Community Water Projects (GPOBA)	Small public service providers	Private bank (investors)
Vietnam: East Meets West Toilet Rebate	Households	Friends, family members, Public bank (taxpayers)

5.4 Verification and Monitoring

By their very nature, RBF schemes require providers to report on the results delivered, in order to get payment. For 21 projects we were able to verify that there was such a self-reporting mechanism (for the other nine projects in the sample, information on reporting and monitoring was not available).

Of the 21 projects for which information on reporting was available, all but two used some sort of independent verification of results. Table 5.4 shows monitoring methods used. “Verification” means that the delivery of outputs was verified by someone independent from the recipient of the RBF payment. Many RBF projects use an IVA (Independent Verification Agent) to verify outputs.

Independent verification does not always work well—this may be because verification was poorly executed, or because the wrong type of verification was chosen. The verification process in India: Nirmal Gram Puraskar sometimes reported false results, as discussed in Section 11.4. No verification was used in the Bangladesh: DISHARI project, in which recipients of results-based payments falsely reported results. No other examples of gaming the system or falsification were found—that does not mean such things did not occur. Cheating is by nature hard to find, as its perpetrators aim to avoid detection.

Three voucher projects used additional verification methods beyond the receipt of vouchers to ensure delivery of outputs: Bangladesh: BRAC WASH Vouchers, Haiti: Oxfam Hygiene Vouchers and Somalia: WASH Cluster.

Only two projects did not have any verification: Mozambique: PLM and Bangladesh: DISHARI. Towns receiving incentives under DISHARI did falsely report attainment of being free of open defecation (Trémolet, Kolsky, & Perez, 2010).

Table 5.4: Methods for Monitoring and Verifying Outputs

Project Name	RBF Type	Sector	Type of Monitoring		
			Self-reporting	Verification	Additional detail
Bangladesh: Social Investment Program (World Bank)	OBA	Water	-	-	-
Cameroon: Affermage (GPOBA)	OBA	Water	✓	✓	Four times per year, an IVA reviews the eligibility of disbursement requests and verifies service delivery.
Guinea: Water Supply (02) (World Bank)	OBA	Water	-	-	-
India: Andhra Pradesh Rural Water (GPOBA)	OBA	Water	✓	✓	Verification is conducted by an IVA.
Indonesia: Hibah	OBA	Water	✓	✓	An IVA performs a physical check of new water or sanitation connections three months after installation; to be sure the connections are working.
Indonesia: PAMSIMAS (World Bank)	OBA	Water	-	-	-
Indonesia: Second Generation	OBA	Water	-	-	-
Indonesia: Surabaya Water (GPOBA)	OBA	Water	✓	✓	Verification is conducted by an IVA, who checks that connections have been working and bills paid for three months after installation.
Kenya: Microfinance for Community Water Projects (GPOBA)	OBA	Water	✓	✓	Verification is conducted by a program audit consultant. The first payment is released after verifying that working connections have been installed, and the second is released after verification of services working for three months.

Project Name	RBF Type	Sector	Type of Monitoring		
			Self-reporting	Verification	Additional detail
Mozambique: Water Private Sector Contracts (GPOBA)	OBA	Water	✓	✓	Verification is conducted by an IVA. The first payment is upon installation, and 30 percent is released three months after installation if the connection works.
Paraguay: Fourth Rural WSS (World Bank)	OBA	Water	-	-	-
Philippines: Manila Water (GPOBA)	OBA	Water	✓	✓	An Output Auditor verifies criteria, which the head of household must sign off on.
Uganda: Small Town and Rural Water (GPOBA)	OBA	Water	✓	✓	An IVA verifies outputs. For public water points, payments are issued for service delivery and for an 'intermediate output.' For yard taps, verification is only for 'final output'.
Uganda: Water for the Poor (GPOBA)	OBA	Water	✓	✓	An IVA verifies installation, and then service delivery.
Brazil: PRODES	OBA	Sanitation	✓	-	Self-evaluations are conducted every three months over a three year period. It is unclear if this includes verification.
Mozambique: PLM	OBA	Sanitation	✓	X	There is no formal verification system.
Senegal: On-Site Sanitation (GPOBA)	OBA	Sanitation	✓	✓	An IVA verifies outputs through sampling. This included site visits.
Senegal: PAQPUD (World Bank)	OBA	Sanitation	-	-	-
Uruguay: OSE Modernization (World Bank)	OBA	Sanitation	✓	✓	Installation and three months of payments of sewerage bills are verified.
Honduras: Extension of Water and Sanitation (GPOBA)	OBA	Water and Sanitation	✓	✓	An IVA verifies installation of working connections, and then verifies that bills have been collected for six consecutive months.

Project Name	RBF Type	Sector	Type of Monitoring		
			Self-reporting	Verification	Additional detail
Mexico: Decentralized Loan (World Bank)	OBA	Water and Sanitation	✓	✓	Verification is conducted by the State Water Commission of Guanajuato.
Morocco: Improved Access (GPOBA)	OBA	Water and Sanitation	✓	✓	An IVA performed 17 verification missions. These missions sampled 7% of the reported connections. The IVA verified installation of connections, and that connections had been working for six months.
Australia: Water Payment Assistance (PAS)	Voucher	Water	-	-	-
Somalia: WASH Cluster	Voucher	Water	✓	✓	Counterfoils on vouchers are used to verify that water went to intended beneficiaries. Also, villager committees are supposed to conduct some monitoring.
Bangladesh: BRAC WASH Vouchers	Voucher	Sanitation	✓	✓	Rural sanitation centers (service providers) send vouchers and other documentation to BRAC to be reimbursed. In addition, a BRAC staff member and a member of the beneficiary's village WASH committee verify delivery of materials to the beneficiary.
Haiti: Oxfam Hygiene Vouchers	Voucher	Water and Sanitation	✓	✓	Oxfam visited shops to verify that outputs of sufficient quality were distributed. Oxfam also audited a third of the participating vendors by checking the number of vouchers returned to Oxfam against the amount of goods distributed by the store, and lists signed by store customers who redeemed vouchers.
Bangladesh: DISHARI	CCT	Sanitation	✓	X	Unions (village governments) self-reported results.

Project Name	RBF Type	Sector	Type of Monitoring		
			Self-reporting	Verification	Additional detail
India: Nirmal Gram Puraskar	CCT	Sanitation	✓	✓	Government employees verified attainment of results, including both installation of sanitation facilities and use of facilities.
Cambodia: East Meets West Toilet Rebate	CCT–rebate	Sanitation	✓	✓	The donor sends teams to beneficiary households to verify installation and use of latrines.
Vietnam: East Meets West Toilet Rebate	CCT–rebate	Sanitation	✓	✓	The donor sends teams to beneficiary households to verify installation and use of latrines.

Notes: A checkmark (“✓”) means an activity was carried out. An “X” means the activity was not carried out. A dash (“-”) means no information was found.

No project in the sample requires a service provider to deliver a 100 percent of outputs before receiving payment for any one output. That is to say, if a provider only delivers 50 out of 100 planned water connections, it will receive payment for those 50 connections.

Poor choice of verification criteria could lead to issuing RBF payments for activities that should lead to delivering a useful output, but may not—for example, making payment upon signing a contract to build a water connection, rather than upon installation of a connection. Fortunately, RBF projects are generally verifying outputs that really can be expected to deliver WASH services. For example, the Honduras: Extension of Water and Sanitation (GPOBA) verifies the installation of a water connection, and then three months of successful payment of bills. The Haiti: Oxfam Hygiene Vouchers project verified that vendors gave good quality hygiene kits to customers. However, the long-run performance of infrastructure outputs funded by RBF is generally not known (see Section 9).

5.5 Type of Service Providers

RBF projects have worked with a wide variety of providers. Donors may have the option to choose from public providers, businesses, or community providers (NGOs). These providers range in size from individual entrepreneurs to multi-national corporations. Globally, public provision of utility-scale service in water and sanitation is the norm. RBF was originally conceived partly to facilitate service provision by private utilities. However, RBF can also work with public providers, small private providers, and community providers. This expands the areas where RBF could operate, as there are no large utilities in many places that have large gaps in WASH coverage. This section examines what kind of providers were used where.

The type of provider engaged is generally appropriate to the objectives of the project. Table 5.5 shows the distribution of provider types by size and ownership. Projects with private providers comprised slightly less than two thirds of the sample.

Box 5.1: Definitions of Provider Types

Providers were classified as **small, medium, or large** per the following criteria:

- Large: National utility, utility serving a large city or urban area, or international private operator
- Medium: Local public or private provider serving a region, one more or town, or many villages.
- Small: Local public or private provider serving at most a few villages. Includes individual water vendors.

Providers were classified as **public** if they were owned by the government. **Private** providers encompassed everything not owned by the government, including businesses and NGOs.

Table 5.5: Distribution of Provider Types by Size and Ownership

	Private	Public and Private	Public	Total
Large	<ul style="list-style-type: none"> ▪ Cameroon: Affermage (GPOBA) (4) ▪ Guinea: Water Supply (02) (World Bank) ▪ Honduras: Extension of Water and Sanitation (GPOBA)** ▪ Philippines: Manila Water (GPOBA) 	<ul style="list-style-type: none"> ▪ Morocco: Improved Access (GPOBA)* (2) ▪ Mozambique: Water Private Sector Contracts (GPOBA)* 	<ul style="list-style-type: none"> ▪ Australia: Water Payment Assistance (PAS) (4) ▪ Indonesia: Surabaya Water (GPOBA) ▪ Uganda: Water for the Poor (GPOBA) ▪ Uruguay: OSE Modernization (World Bank) 	10
Medium	<ul style="list-style-type: none"> ▪ India: Andhra Pradesh Rural Water (GPOBA) (2) ▪ Uganda: Small Town and Rural Water (GPOBA) 	<ul style="list-style-type: none"> ▪ Brazil: PRODES* (1) ▪ Mozambique: PLM* 	<ul style="list-style-type: none"> ▪ Indonesia: Hibah (2) ▪ Indonesia: Second Generation 	5
Small	<ul style="list-style-type: none"> ▪ Bangladesh: BRAC WASH Vouchers (11) ▪ Cambodia: East Meets West Toilet Rebate ▪ Haiti: Oxfam Hygiene Vouchers ▪ Honduras: Extension of Water and Sanitation (GPOBA)** ▪ Paraguay: Fourth Rural WSS (World Bank) ▪ Senegal: On-Site Sanitation (GPOBA) ▪ Senegal: PAQPUD (World Bank) ▪ Somalia: WASH Cluster ▪ Vietnam: East Meets West Toilet Rebate ▪ Kenya: Microfinance for Community Water (GPOBA) ▪ Indonesia: PAMSIMAS (World Bank) 	(0)	(0)	11
Total	17	3	6	26

*Note : Mozambique: Water Private Sector Contracts is included as public and private because the single provider is under a mix of public and private ownership. When the Project Appraisal Document was written in 2007, the service provider (Aguas da Região de Maputo, or AdeM) was majority-owned by private investors. In 2010, AdeM became majority-owned by the Government—the year that project execution began in earnest. The other two projects in this column used a mix of public providers and public providers.

**Note: This project appears in multiple cells because it had providers of different sizes.

Note: Projects with CBOs (Community-Based Organizations) as service providers are classified as private. If a CBO provides services, then risk is transferred away from Government, as with a private firm. CBOs should also be highly motivated to deliver results, as they are voluntary organizations, although they do not have the profit motive.

In some areas, there is no choice but to work with the incumbent utility serving the area. For example, Guinea: Water Supply (02), Mozambique: Water Private Sector Contracts (GPOBA), and Philippines: Manila Water (GPOBA), all used incumbent multinational service providers. Uganda: Water for the Poor (GPOBA) used the incumbent public utility in Kampala.

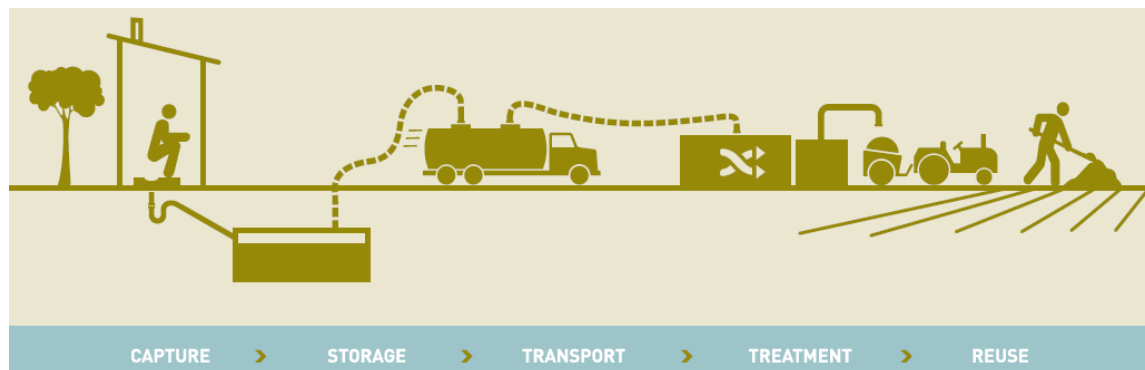
In other areas, designers of RBF projects have chosen the right provider for the area being served. The Honduras: Extension of Water and Sanitation (GPOBA) had both private multinational providers and small public providers. The Uganda: Small Town and Rural Water (GPOBA) project used medium-sized businesses to provide services, and was effective. The Kenya: Microfinance for Community Water Projects was also effective, and used small private providers (community organizations).

5.6 Interventions for Market Failures in the Sanitation Value Chain

Improving sanitation can be more complicated than improving water supply. Water supply is a private good. Families desire clean, safe, reliable water supply. They are willing to pay for it, and they receive most of the benefits of the improved supply. Sanitation is more complicated—the stages of the sanitation value chain are shown in Figure 5.2.

Capture and storage enables members of the household to defecate on-site, without feces building up in the immediate environs of the family. The transport stage of the chain benefits the household and the community, as human waste is taken out of the area. This can be through a piped sewer network, or emptying of pit latrines, septic-tanks, or other storage containers. Treatment benefits the broader community, in particular those downstream of where the sewage or fecal sludge is emptied into the environment. Reuse, as shown in the figure, is desirable, but rare. Disposal into gullies, bodies of water, or landfills is more common.²⁰

Figure 5.2: Sanitation Value Chain



Source: <https://docs.gatesfoundation.org/Documents/water-sanitation-hygiene-fact-sheet-2010.pdf>

Given this complexity, it is important to understand the stages in which RBF works in the sanitation value chain, and what the market failures are in each stage of the value chain. After a discussion of the stages of the value chain, Table 5.6 shows where RBF projects

²⁰ See Table 5.6 for a discussion of the market failures in the sanitation value chain (externalities, public goods, information problems).

intervened in the sanitation value chain, and what market failures exist at different stages of the value chain.

The parts of the value chain targeted by sanitation projects, and the market failures in each stage of the value chain, are shown in Table 5.6. Shaded cells show where projects intervened. To complement the preceding value chain diagram, the upcoming table also includes a Demand Stage. Some RBF projects intervene to stimulate demand. For example, the DISHARI project in Bangladesh gave awards to governments of villages that eliminated open defecation. These awards were an incentive to increase demand for sanitation facilities.

Table 5.6: Sanitation Value Chain Interventions in RBF

Project Name	RBF Type	Demand	Capture and Storage	Transport	Treatment	Proper Reuse or Discharge
		Market Failure				
-	-	Information problem: People may not understand the health benefits of improved sanitation.	Positive externality: To realize the health benefits of proper capture and storage, most people in a locality need to have it. Similarly, each household benefits if its neighbors have improved sanitation.	Community public good: Ensuring that human waste is transported out of the community benefits not just the family whose waste it is, but everyone in the vicinity, by reducing contamination transmitted through surface water, ground-water, and insect and rodent vectors.	Public good: If human waste is treated before being discharged into the environment, everyone who might otherwise have come into contact with the waste benefits.	Public good: In most cases the waste is dumped into a body of water or a landfill. It can also be incinerated, or reused. If this is not done in a sanitary manner it creates negative externalities. Steps to ensure that disposal or reuse are safe and hygienic, on the other hand, may be considered as public goods.
Brazil: PRODES	OBA					
Honduras: Extension of Water and Sanitation (GPOBA)	OBA					
Indonesia: Hibah	OBA					
Mexico: Decentralized Loan (World Bank)	OBA					
Morocco: Improved Access (GPOBA)	OBA					
Mozambique: PLM	OBA					

Project Name	RBF Type	Demand	Capture and Storage	Transport	Treatment	Proper Reuse or Discharge
Senegal: On-Site Sanitation (GPOBA)	OBA					
Senegal: PAQPUD (World Bank)	OBA					
Uruguay: OSE Modernization (World Bank)	OBA					
Bangladesh: BRAC WASH Vouchers	Voucher					
Haiti: Oxfam Hygiene Vouchers	Voucher					
Bangladesh: DISHARI	CCT					
India: Nirmal Gram Puraskar	CCT					
Cambodia: East Meets West Toilet Rebate	CCT -rebate					
Vietnam: East Meets West Toilet Rebate	CCT -rebate					

Five projects out of 15 aim to change behavior—that is to say, to create a demand for improved sanitation facilities. These may in some cases be overcoming problems in information markets—people don’t know that better hygiene and sanitation behavior will make them and their families healthier. They may also have a public good element since studies show that 75 percent of a community needs to practice safe sanitation in order for community health benefits to be achieved (Bateman & Smith, 1991), and that higher population density increases the health risks from open defecation (Spears, 2013).

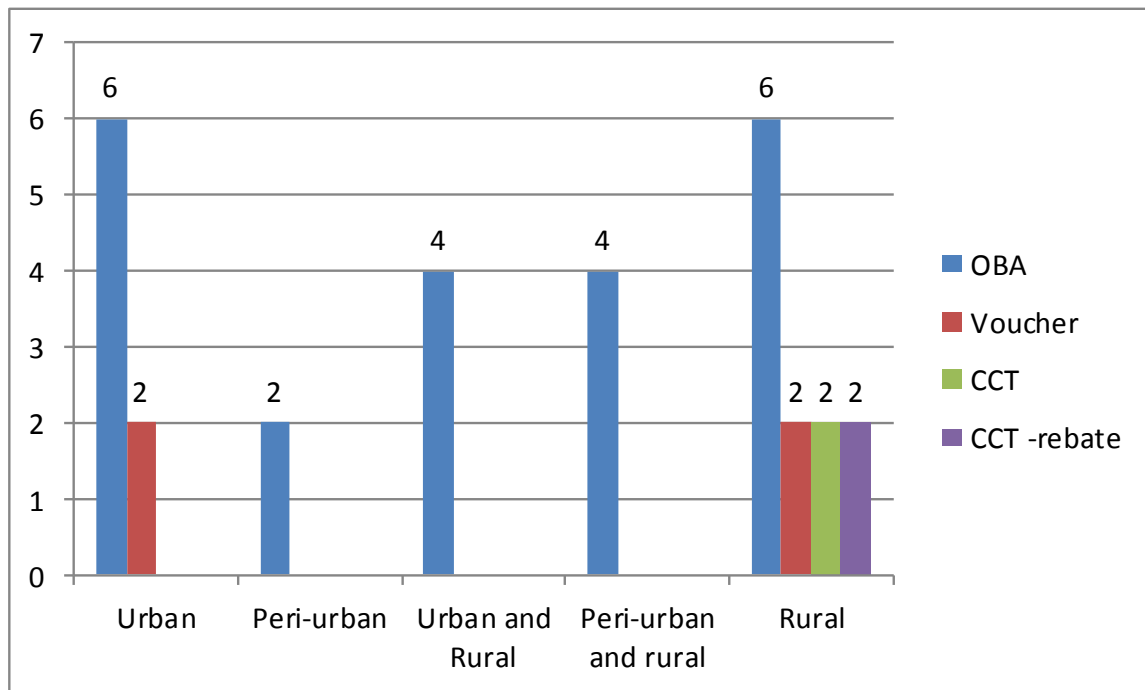
Eleven projects out of 15 aim at capture and storage. These are the parts of the value chain with the most private good aspects. Of these, four also include treatment. Two are focused just on treatment. As yet, none are supporting reuse.

Of the 15 projects in sanitation, five projects (33 percent) aimed to stimulate demand. 11 projects (73 percent) intervened in capture and storage. Four projects (27 percent) intervened in transport, and two (13 percent) intervened in treatment. No projects intervened in reuse.

5.7 Urban and Rural RBF

RBF projects are common in both urban and rural areas. Projects only serving rural areas were the most common (12), followed by eight projects that only served urban areas. There were four projects serving both urban and rural areas, and another four serving peri-urban and rural areas. Two projects only served peri-urban areas. Figure 5.3 shows the prevalence of different types of RBF in different locations. The bars show the number of projects using each of type of RBF in different locations.

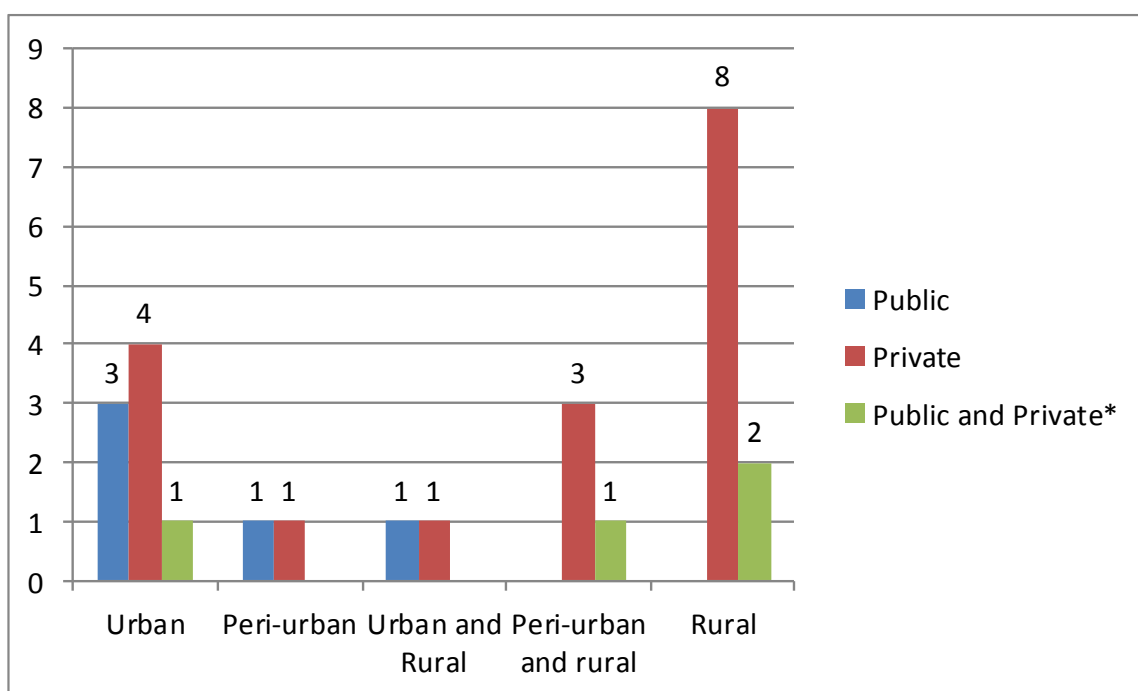
Figure 5.3: Types of RBF in Different Locations



RBF is used for different things in urban and rural areas. Most projects in urban areas focus on networked services and use OBA (75 percent), and otherwise use vouchers (25 percent). Half of rural projects use OBA, 17 percent use vouchers, and 34 percent use CCT. All CCT projects occurred in rural areas. Practitioners may be missing some opportunities by limiting certain types of RBF to certain areas.

Private providers are more common in rural areas than in urban areas. The prevalence of public and private²¹ providers in different areas is shown in Figure 5.4. The bars represent the number of projects in the sample that used each type of provider.

Figure 5.4: Type of Providers in Different Locations



*Note: some projects used both public providers and private providers.

OBA has been proven to work well for non-networked services, and in rural areas. The India: Andhra Pradesh Rural Water (GPOBA) project used a private provider to deliver UV water treatment plants for rural villages, and was effective (see Section 6.1). The Uganda: Small Town and Rural Water (GPOBA) project used private firms to deliver networked water services in small towns and rural growth areas.

Open defecation is a problem in some urban areas. However, while RBF schemes are being used to try to stop open defecation in rural communities, this does not seem to have been tried in urban communities. Sanitation projects in urban communities usually focus on providing sewer connections or on-site sanitation, not on behavior change. It should be noted that the benefits of urban sanitation projects ultimately depend on the whole value chain, as presented in Section 5.6—from the toilet all the way to treatment (and sometimes

²¹ Private providers include both businesses and NGOs. Public providers are owned by the government.

reuse). If waste ultimately flows back in to the urban environment without proper treatment, then few health benefits may be realized from access to sanitation facilities.

6 Effectiveness and Impact

RBF projects in WASH tend to be effective—they deliver the amount of outputs they intended to deliver. On average, RBF projects delivered about 94 percent of targeted outputs. That is to say, RBF projects tend to convert inputs into the desired outputs. They are effective even in countries with low income and low government effectiveness.

Effectiveness measures the extent to which a development project achieved its objectives. In this report, effectiveness measures how close projects came to delivering their target number of outputs. The information available did not allow for evaluation of how well the targets themselves were chosen.²²

This section first reports overall results, and then discusses how context and design factors affected results.

The impact of RBF projects was hard to judge based on available data. The data that were available were often of questionable quality.

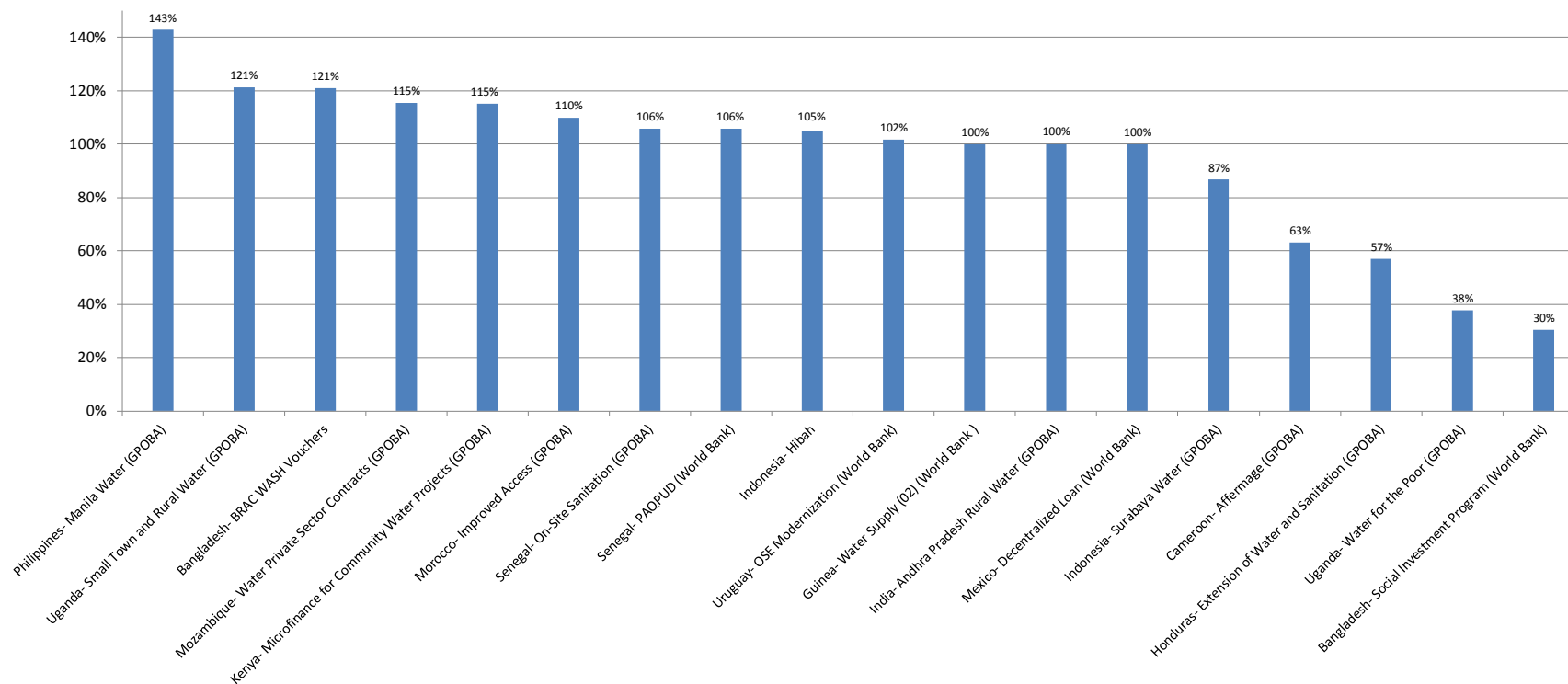
6.1 Effectiveness

Outputs delivered, as a percentage of target, are shown in Figure 6.1. Outputs delivered ranged from 143 percent to 30 percent of target, with an average of 94 percent of targeted outputs delivered. Of the 17 projects in the following Figure, 12 met or exceeded their target number of outputs.²³

²²This is based on the definition from the Organization for Economic Cooperation and Development's (OECD) development effective criteria, found at <http://www.oecd.org/development/evaluation/dacriteriaforevaluatingdevelopmentassistance.htm>

²³Note that the effectiveness ratio for Kenya: Microfinance for Community Water Projects reflects the initial version of the project. It was later scaled up with additional funding, bringing its final budget to 2.2 times the initial budget.

Figure 6.1: Effectiveness of RBF in WASH



Note: This figure only shows projects for which numerical effectiveness data were available. Some projects shown in Figure 0.2 are not shown here. These percentages reflect the number of outputs verified by each project for delivery of a results-based payment. They are not the service providers' self-reported numbers, except for Bangladesh: BRAC Wash Vouchers.

Effectiveness is shown as a percentage of initial targets rather than adjusted targets. Some projects' targets were adjusted during implementation. Using adjusted targets in analysis could paint an incorrect picture of effectiveness. Rating a project against a target that was lowered to mask performance does not seem valid, as it could create an artificially positive picture. Similarly, using targets that were adjusted upwards could make appearance look unduly poor. Table 6.1 presents data on adjusted targets.²⁴

Table 6.1: Number of Projects with Adjusted Targets

	Number of Projects	Percent of Total
Projects with Data on Targets	17	100%
Projects Whose Targets were Adjusted	6	35%
Targets Adjusted Upwards	4	24%
Targets Adjusted Downwards	2	12%

The reasons targets were adjusted are not always known. In the case of Uganda: Small Town and Rural Water (GPOBA), the actual costs of outputs were lower than estimated—thus, more outputs could be delivered under the same budget, and the targets were raised. For Manila Water (GPOBA), the utility regulator lowered connection fees, thus enabling more connections to be delivered under the same budget, and targets were raised.

Caveats in interpreting effectiveness data

Output ratios for RBF projects should be interpreted carefully. There may be a reporting bias in output data. Only 57 percent of projects reported both target and actual outputs. Those that perform well could be more likely to report results.

External factors may influence effectiveness. For example, the Manila Water (GPOBA) project in the Philippines surpassed its initial original target by over 40 percent, yet this was mainly due to a substantial reduction in connection fees by the water utility regulator eight months after the program began—from about 7,500 Php to 2,600 Php. For the remaining 4.5 years of the program, Manila Water could make more connections with the same grant (which was only 72.5 percent disbursed at project close) than originally expected. The project thus increased its target number of outputs, but this report scored its effectiveness against the original target.

An effective project would generally be expected to stop delivering outputs once it reaches 100 percent, because its budget has been exhausted. However, exchange rate fluctuations may change the amount of money available to pay for outputs, and thus the number of outputs provided. This can happen if projects make results-based payments in a currency other than the one that donor financial support is in. For example, fluctuations in the USD-MAD exchange rate (US Dollar and Moroccan Dirham) contributed to the delivery of additional connections above the target amount by the Morocco: Improved Access to Water and Sanitation Services project (World Bank, 2012).

²⁴ Information on targets was not found for 13 projects in the sample. Transparency of projects is discussed in Section 12,

Some projects provide multiple types of outputs, which makes effectiveness hard to judge. The mix of outputs may change in the course of the project. For example, the Surabaya Water (GPOBA) project in Indonesia provided three types of outputs: in-fill household water connections, expansion water connections, and master meter schemes. Overall, the Surabaya project provided 87 percent of its initial target outputs. However, effectiveness values vary for each output, when analyzed separately. The project provided 147 percent of its initial target for in-fill household water connections. The project provided 27 percent of its initial target for expansion household water connections. The project provided 100 percent of its initial target for master meter schemes.

Incorrect estimates of the cost of delivering outputs could lead to budgets being too large or too small with respect to the intended number of outputs. The Uganda: Water for the Poor (GPOBA) project ended up delivering more outputs than it had intended, because the cost estimates used in planning were too high (World Bank, 2014). Competitive procurement of service providers resulted in lower bids than were expected.

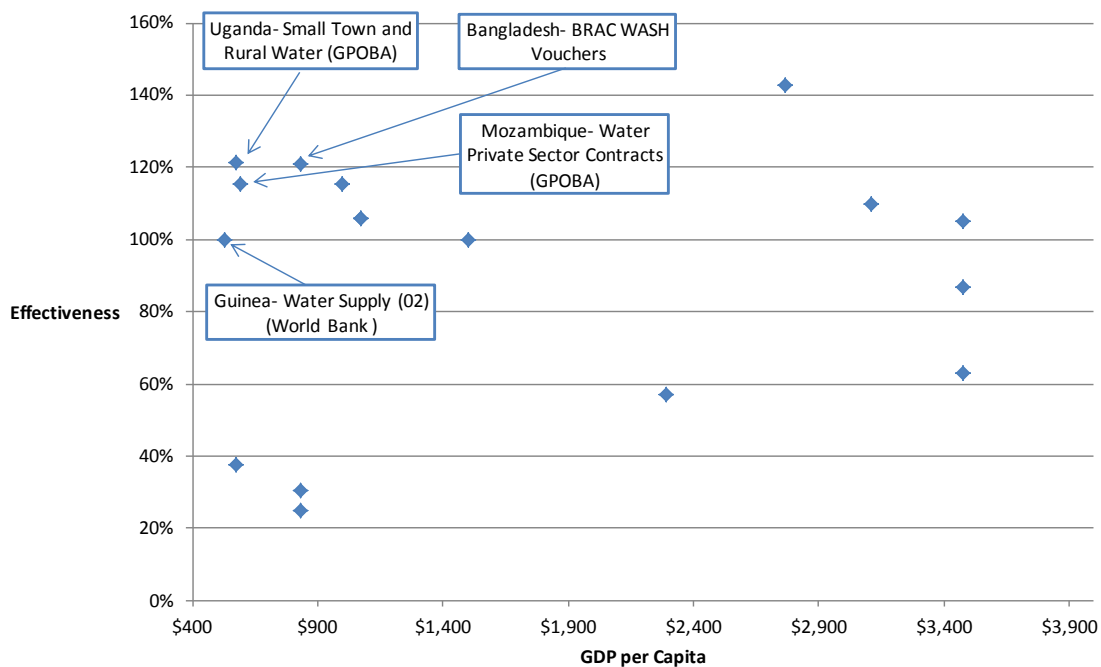
6.2 Country Context and Effectiveness

RBF projects can be effective in poor countries²⁵ and ones with low government effectiveness²⁶. Figure 6.2. and Figure 6.3 provide scatter plots of the projects in the sample, showing effectiveness of the projects plotted against the host country's income or level of government effectiveness. Simple regressions showed almost no relationship between project effectiveness and the other two variables. This implies that RBF's success is not contingent on a country's income level or level of government effectiveness.

²⁵ Measured in GDP per capita.

²⁶ Government effectiveness is measured by the Government Effectiveness indicator, which is part of the World Bank's Worldwide Governance Indicators, <http://info.worldbank.org/governance/wgi/index.aspx#home>

Figure 6.2: GDP per Capita and Effectiveness



Note: GDP figures were calculated using market exchange rates.

Several of the most successful RBF projects have been in countries with very low incomes or levels of government effectiveness. Examples include the following:

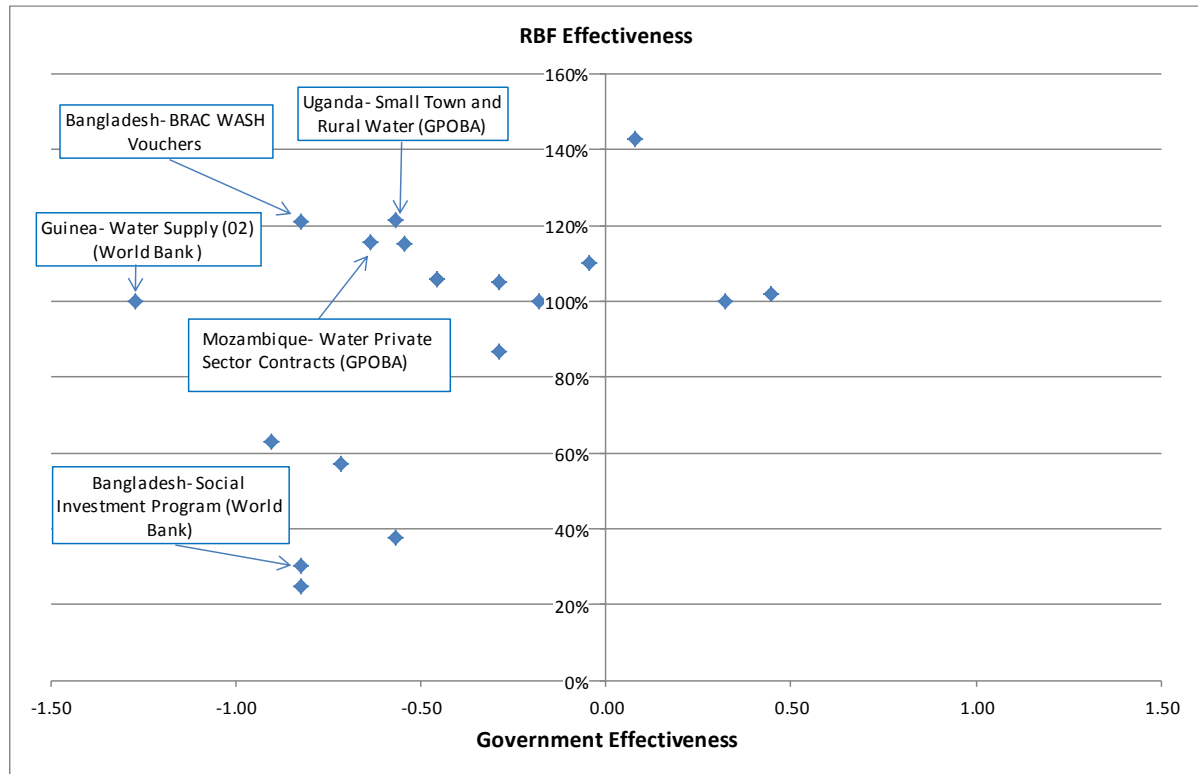
- **Guinea: Water Supply (02)** (World Bank) achieved 100 percent effectiveness in a country with GDP per capita of \$528—Guinea is the eleventh-poorest country in the world. The service provider was a multinational firm, and may have been able to overcome or avoid local institutional challenges (however, this cannot be known from the available information).
- **Uganda: Small Town and Rural Water** (GPOBA) achieved 121 percent effectiveness in a country with GDP per capita of only \$572. It used local private service providers.
- **Mozambique: Water Private Sector Contracts** (GPOBA) achieved 115 percent efficiency in a country with GDP per capita of only \$593. This project’s service provider was also a multinational firm.
- **Bangladesh: BRAC WASH Vouchers** achieved 121 percent effectiveness in a country with GDP per capita of \$829. This project used small private providers, and was managed by a large Bangladeshi NGO (BRAC) which had extensive experience providing basic services in the country.

In total, seven projects for which we have data achieved effectiveness of at least 100 percent in countries with GDP per-capita under \$2,000. Of the 16 projects in countries with GDP per capita under \$4,000, only three achieved lower than 50 percent effectiveness.

Figure 6.3 shows that some RBF projects had high effectiveness in countries with low government effectiveness. Most projects in this figure had negative government

effectiveness scores, which are very low considering that 43 percent of the 210 countries in the government effectiveness dataset had positive scores, and the top two countries' scores were higher than 2.0.

Figure 6.3: Government Effectiveness and Effectiveness (of RBF)



Note: While these points may seem to indicate a trend, the R-squared statistic of the linear regression was 0.17. The vast majority of the variation in RBF effectiveness was explained by something other than government effectiveness.

The three countries with positive government effectiveness scores achieved effectiveness of over 100 percent. However, eight projects achieved 100 percent effectiveness or greater in countries with negative government effectiveness scores.

It is true that the second least effective project—the Bangladesh-Social Investment Program (World Bank) had the third-lowest government effectiveness score (-0.83). However, another project in Bangladesh achieved 121 percent effectiveness (BRAC WASH Vouchers). The project in Guinea, which has the lowest government effectiveness score in the group, achieved 100 percent effectiveness.

Delivery in humanitarian emergencies

RBF, particularly vouchers, can also work well for delivering consumable goods in humanitarian emergencies. In Somalia, the WASH Cluster project provides vouchers for containers of water (United Nations Children's Fund, 2014). In 2014 the project provided water for 205,704 people, exceeding its target for that year by eight percent. After the 2010 earthquake in Haiti, the Oxfam Hygiene Vouchers project provided vouchers for hygiene goods (Brady & Creti, 2010). The project used small private shops to provide hygiene goods,

such as soap, to 440 needy families. All the beneficiaries surveyed thought the hygiene goods were of acceptable quality and that they helped to improve sanitary conditions.

6.3 Impact

Impacts are changes produced by projects' outputs.²⁷ Reduced incidence of waterborne diseases through improved access to safe water is an impact. Installation of water connections alone would not be an impact.

The seven projects that reported impacts generally did not do so convincingly—especially in regards to health. This is particularly troubling given that health impacts are often a major motivation for expanding and improving WASH services. Given the inherent challenges in measuring health impacts, evaluations should clearly show how health impacts were measured, and how the influence of other factors were controlled for.

It is hard to isolate the health impacts of an intervention from other factors, such as weather—did the occurrence of diarrheal disease fall due to new water connections, or an unusually short rainy season? Public health data is often less than ideal for judging the impacts of interventions—many sick people may not visit hospitals, so their illness may go unreported. Reported impacts can also be influenced by the nature or frequency of questions asked of beneficiaries (this true of many impacts, not just health).

The reported impacts are listed in Table 6.2. The Table includes as much information as could be found on how impacts were measured.

²⁷ This is based on the Organization for Economic Cooperation and Development's (OECD) Development Assistance Committee (DAC) criteria for evaluation of development assistance, found at <http://www.oecd.org/development/evaluation/dacriteriaforevaluatingdevelopmentassistance.htm>

Table 6.2: Projects with Data on Intended and Actual Impacts

Project Name	Intended Impact	Claimed Impact
Senegal: On-Site Sanitation (GPOBA)	Increase the number of poor households that have access to improved sanitation, reduce health and environmental issues for beneficiaries and their neighborhoods, reduce spending by beneficiaries on sanitation facility maintenance, and improve living and working conditions for women (World Bank, 2012).	56% of beneficiaries reported that health expenses related to poor hygiene fell by 46% on average, and 75% reported improvement in living conditions (fewer mosquitoes, savings on waste removal expenses, and improvement of the living environment). 94% of women reported facing reduced workloads. Neighbors of beneficiaries also benefitted: some beneficiaries stopped defecating in the open or using neighbors' facilities, and some neighbors started using beneficiaries' facilities (World Bank, 2012).
Guinea: Water Supply (02) (World Bank)	Strengthen institutions responsible for water supply in Conakry. Provide uninterrupted supply of water to inhabitants (World Bank, 1998).	Lower incidence of water-borne diseases (World Bank, 1998).
India: Andhra Pradesh Rural Water (GPOBA)	Cost savings from health related expenses, and environmental benefits (World Bank, 2011).	98% of households have continued to use water from treatment plants provided by the project, according to household surveys. This implies that they no longer drink from contaminated sources such as ponds (World Bank, 2011).
Uganda: Small Town and Rural Water (GPOBA)	Increase accountability and efficiency of local providers Supply good quality water to the poor(this is more of an output, but was presented as an impact in project documentation) (World Bank, 2013).	Reduced time spent by women and children in collecting water (a numerical value for the reduction was not reported). Reduced waterborne diseases and spending on treatments for such diseases (no data is presented to back this claim). The evaluation says that corruption was minimized through the verification process, so accountability was probably improved. 9 of 11 schemes had cost recovery tariffs. NRW fell by 12 % on average, and collection efficiency improved (no number available) (World Bank, 2013).

Project Name	Intended Impact	Claimed Impact
Philippines: Manila Water (GPOBA)	<p>Reduce incidence of water borne diseases, such as amoebiasis.</p> <p>Save time, especially of women and children, who are intended to save an average of 2 hours/day.</p> <p>Increase community hygiene and general cleanliness (World Bank, 2013).</p>	<p>An evaluation says cases of diarrhea fell by around 4,000 in Metro Manila (it is not clear how his decline was linked to the project, or whether other factors could have attributed to it). The evaluation did not prove that this decline was attributable to the project, but it did claim that this reflects the project's impacts. Two hours per day were saved in time collecting water in beneficiary households. Expenditure on water in beneficiary households fell from 13% of income to 1-2% of income (World Bank, 2013).</p>
Australia: Water Payment Assistance (PAS)	Reduce water bills (Sullivan & Panuccio, 2014).	Reduced water bills (Sullivan & Panuccio, 2014).
India: Nirmal Gram Puraskar	Improve the general quality of life in rural areas, and eliminate open defecation to minimize the risk of contamination of drinking water sources and food.	51% of households in towns receiving the incentive payment reported a reduction in the number of days that children had diarrhea (Department of Drinking Water and Sanitation). It is unclear how this was assessed.

The Nirmal Gram Puraskar (NGP) project in India did not achieve its intended impact of eliminating open defecation in rural areas. An evaluation by the Government of India found that 73 percent of households in villages that received the award for being ODF had at least one member who still defecated in the open. The financial incentives from NGP may have encouraged villages to try to win the prize without really eliminating open defecation (Mathew, 2014).

No unintended or negative impacts were found in the literature or interviews.

7 Scale

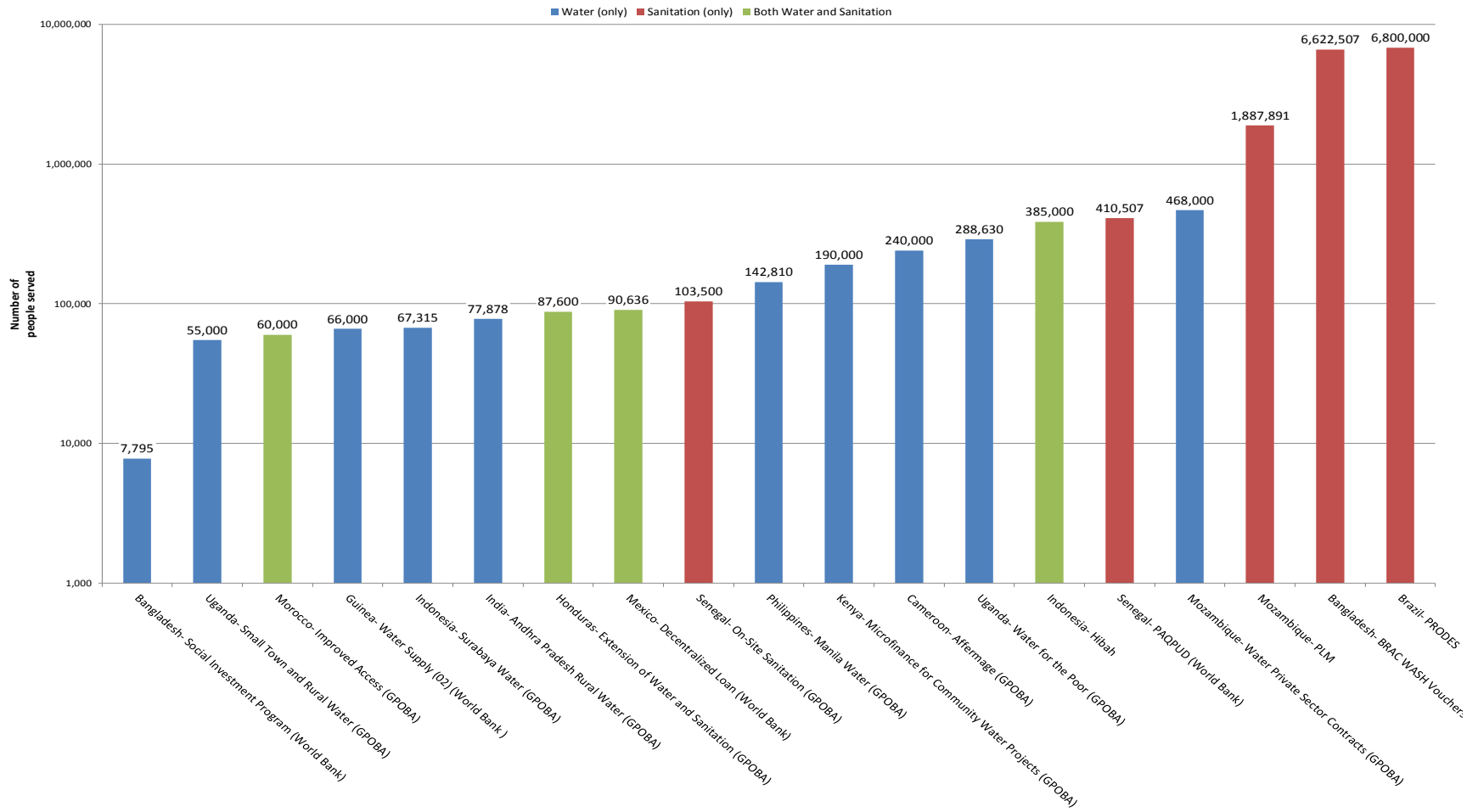
Scale is defined as the number of people a project served. Since so many people globally do not have adequate WASH services, RBF needs to operate on a large scale to make a real improvement to the problem. As mentioned in the Introduction, 2.5 billion people lack access to improved sanitation facilities, and 770 million people lack access to improved water sources. RBF thus far has not generally operated on a large scale compared to massive global gaps in access to WASH.

Only a few projects are very large (see Figure 7.1). Of the 19 projects in the sample which provided data on the number of people served, only three reached over a million people. These were all in sanitation: Brazil: PRODES reached 6,800,000 people; Bangladesh: BRAC WASH Vouchers reached 6,600,000 people; and Mozambique: PLM served 1,900,000 people.

Mozambique: Water Private Sector Contracts (GPOBA) was the largest water project, serving 468,000 people. The median number of people by served projects in all WASH sectors was 142,810.

Factors that promote scale include using local systems, and avoiding the need for bridge-financing. However, income levels and government effectiveness do not seem so important—some of the largest projects are in some of the poorest countries. Beyond those findings, the data revealed little about how to operate at scale. Recommendations for further research into scale are made in Section 14.

Figure 7.1: Number of People Served

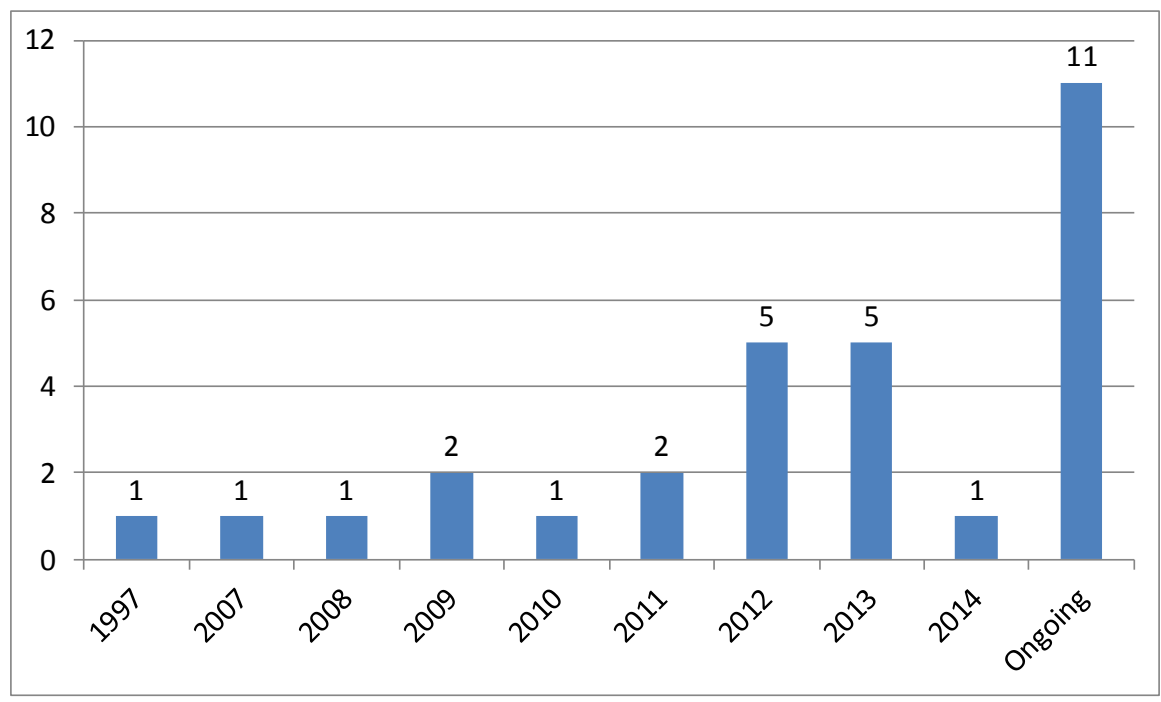


Note: Vertical axis is in logarithmic scale.

The number of people served ranges from around 7,800 to 6,800,000. The Brazil: PRODES project (the largest) probably served so many people because it provided sewage treatment plants, each of which can serve many people. The second, and third largest projects provided on-site sanitation: Bangladesh: BRAC WASH Vouchers served 6,600,000 people, and Mozambique: PLM served 1,900,000 people. This shows potential for addressing large gaps in sanitation services. Only six projects served more than 300,000 people, while eight served fewer than 100,000.

Many RBF projects may be pilots, which are intended to demonstrate the viability of RBF on a small scale. As mentioned in Section 6, RBF projects usually deliver close to the target number of outputs—RBF is then succeeding at being small. Most projects in the sample (83 percent) ended in the last five years, or are ongoing, as shown in Figure 7.2 below. This further hints at the new and experimental nature of RBF projects. GPOBA—the largest player in RBF in terms of number of projects—has focused on creating pilot projects (Global Partnership on Output-Based Aid, 2014). GPOBA also works on scaling up some of the successful pilots.

Figure 7.2: Number of RBF Projects Closing per Year



An ideally scalable project would realize economies of scale—the cost of delivering outputs would fall as more outputs are provided. Some projects have service delivery models which inherently do not realize economies of scale. For example, the East Meets West Foundation’s sanitation project in Vietnam always has the same cost of delivering outputs, whether delivering 1,000 or 100,000 outputs²⁸.

²⁸ This is based on a comment from Jan Willem Rosenboom of the Bill and Melinda Gates Foundation.

7.1 Factors that Help or Hinder Operating at Scale

Complexities such as bridge financing can make it more difficult to achieve scale, while relying on local systems may increase the likelihood of operating on a large scale.

Projects that provide help with bridge financing may not operate at scale

The cost of technical assistance and capacity building for financing can sometimes limit the potential for scaling up a project. However, there are situations where bridge financing can enable providers to participate in RBF that would otherwise lack the capital to do so. When providers lack access to capital, donors have to either use input-based aid (rather than RBF), or use RBF along with help with bridge financing.

Bridge financing does have the benefit of transferring initial credit risk from the donor or government to the lender. The lender makes a loan to the service provider with the expectation of results, while the government does not pay the provider until results have been delivered. This is true whether RBF projects provide help with bridge financing, or if providers access bridge capital on their own.

When donors consider providing help with bridge financing in RBF, they should ask whether the advantages of risk transfer are offset by the costs of additional complexity and reduced potential to scale up. In some cases, donors may want to consider alternatives to RBF.

An evaluation of the Indonesia: Second Generation project found that the cost of technical assistance for community water providers limited the project's potential to operate on a large scale (Robinson, Institutional Models for Management of Piped Community Water Supply in Indonesia, 2013). This project provided technical assistance to help providers incorporate as legal entities, apply for loans, and improve their financial management. The project tried to induce both private and public banks to loan to providers, but only public ones were willing to lend.

Kenya: Microfinance for Community Water Projects has scaled successfully in Kenya by providers. However, a similar structure may not work well in many other developing countries. The project helps community-based water providers receive bridge financing from a commercial bank (K-Rep). The providers then use the financing to build water connections. This is perhaps easier in Kenya than many other developing countries, as Kenya has a relatively advanced and competitive financial sector (Advani, 2014; Mwangi, 2014). Thus far, the project has increased its scale by having more providers get finance from K-Rep.

The project is trying to scale up further by involving more banks, and some banks have expressed interest in participating as of early January, 2015.²⁹ New loans have not yet been made, but GPOBA expects some of the additional banks to make loans soon. The cost of technical assistance and capacity building may limit economies of scale across multiple banks. The same technical assistance and capacity building may be needed for each bank that participates.

²⁹ This is according to emailed comments from Rajesh Advani at GPOBA.

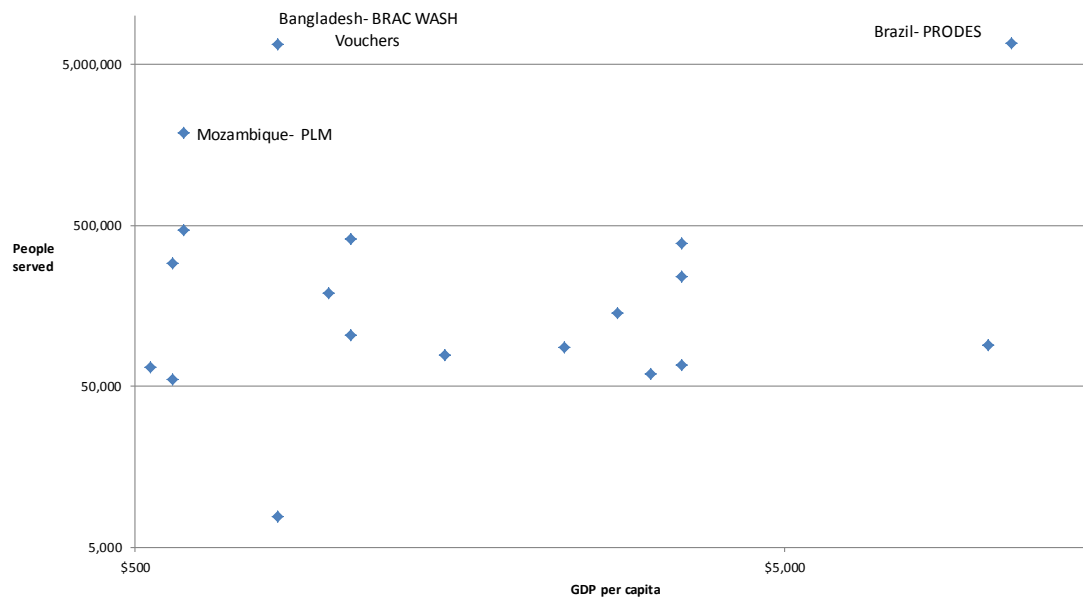
Using local systems can help projects operate at scale

Using local systems may make it easier for RBF projects to operate on a large scale. The Hibah project scaled well, probably because it was mainstreamed into the existing fiscal framework. It has served 385,000 people, and is in the middle of a scale-up from its first phase. The BRAC voucher scheme took advantage of the fact that BRAC is among the largest and most capable entities in Bangladesh, and was already assisting in providing basic services throughout the countryside.

7.2 Country Context and Scale

RBF projects can serve a large number of people, even in very poor countries or ones with low government effectiveness. Simple regressions found no relationship between scale and poverty or government effectiveness (Figure 7.3).

Figure 7.3: GDP per Capita and People Served



Note: GDP figures were calculated using market exchange rates. The horizontal and vertical axes use a logarithmic scale.

The projects with the second and third highest amount of people served were in relatively poor countries. Both these projects provided on-site sanitation. Bangladesh: BRAC WASH Vouchers served 6.6 million people in a country with GDP per capita of only \$829. Mozambique: PLM served 1.9 million people in a country with GDP per capita of only \$593. Both Bangladesh and Mozambique also score poorly on government effectiveness (-0.83 and -0.64 respectively).

8 Efficiency

Efficiency measures how well an aid project uses resources in order to obtain desired results.³⁰ RBF was designed to increase efficiency (compared to conventional publicly-financed project delivery) by harnessing incentives and transferring risk. Unfortunately, available data does not allow a firm conclusion on whether the hoped for efficiency gains have been achieved. The information is *consistent* with a view that RBF is efficient, but does not clearly show that RBF is more efficient than other delivery methods. Ideally, this report would have compared the efficiency of RBF with non-RBF projects. The available data did not allow for such a comparison to be made.

Efficiency is first measured by comparing the average cost per person served, and then by comparing direct cost per unit of output. Data on average cost per person served were available for 8 projects. Data on direct costs per unit of output³¹ were available for 12 projects.

Costs should depend in part on the choice of service provider. In some cases, providers were chosen through bidding among private providers (such as the Uganda: Small Town and Rural Water (GPOBA) project). In other cases, projects had to use the incumbent monopoly provider. These included private providers (for example, the Manila Water (GPOBA) project), and public ones (Uganda: Water for the Poor (GPOBA)).

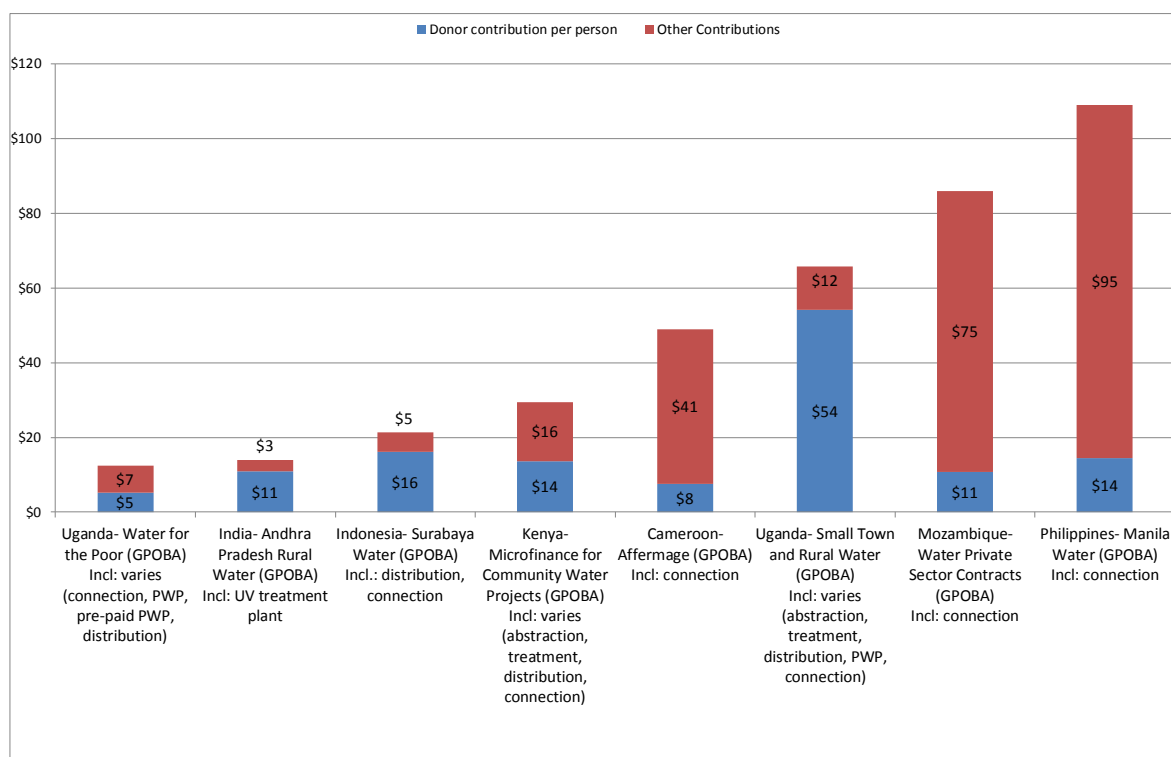
8.1 Efficiency in Terms of Average Cost per Person Served

Efficiency of OBA in water for household connections, in terms of average cost per person served, is presented in Figure 8.1. The figure also shows how much of that cost was contributed by donors, and how much came from other sources. The average costs per person served for OBA in water range from to \$12 to \$109. Average costs include all costs for running a project (such as administrative expenses and technical assistance), as well as the RBF payments.

³⁰ This is based on the Organization for Economic Cooperation and Development's (OECD) Development Assistance Committee (DAC) criteria for evaluation of development assistance, found at <http://www.oecd.org/development/evaluation/daccriteriaforevaluatingdevelopmentassistance.htm>

³¹ Direct cost is the short-term cost of delivering an output under an RBF scheme. This reflects the amount of money a service provider must spend in order provide an output which triggers an RBF payment. For networked services, this may include more than just a connection (for example, water mains)

Figure 8.1: Efficiency of OBA in Water, in Terms of Average Cost per Person Served, in US\$



Note: Some projects provided a variety of outputs. Unfortunately, it was not possible to apportion the total project cost into a total cost for each type of output, as the average cost includes administrative costs for the project as a whole.

The projects with the lowest costs per person used technologies that served people in multiple households. The Uganda: Water for the Poor project provided public water points, and also household connections. This project operated in a dense urban area, which probably helped reduce costs as well. The India: Andhra Pradesh Rural Water (GPOBA) project provided UV water treatment plants, each of which provides water for a whole village.

The two projects with the highest costs—Philippines: Manila Water (GPOBA) and Mozambique: Water Private Sector Contracts (GPOBA) both provided household connections. It is not clear why the Manila OBA project had such high average costs when it had a relatively low direct cost of outputs (shown in Figure 8.2).

Two OBA projects that provided both water and sanitation had data on average cost per person. Morocco: Improved Access (GPOBA) had an average cost per person of \$374, of which \$117 (31 percent) was contributed by donors. Honduras: Extension of Water and Sanitation (GPOBA) had an average cost per person of \$169, of which \$52 (31 percent) was contributed by donors. Some projects provided more infrastructure per person, which may explain some of the variation in cost. This is shown in the three figures in Section 8.2 (Figure 8.2, Figure 8.3, and Figure 8.4).

Two projects that provided on-site sanitation had available data on costs per person served. Bangladesh: BRAC WASH Vouchers had an average cost per person served of \$48. This project provided latrines in rural areas. The Senegal: On-Site Sanitation (GPOBA) had an average cost per person served of \$57, of which \$49 (86 percent) came from donors. This project operated in an urban area. Most beneficiary households in the Senegal: On-Site Sanitation (GPOBA) project chose to receive grey water management systems, which were cheaper than latrines in Senegal.

8.2 Benchmarking Efficiency in Terms of Direct Cost of Outputs

Direct costs of outputs³² of some OBA projects in water could be compared against non-RBF benchmarks. These projects provided either household connections or public water points. The direct cost of outputs should reflect the efficiency of procurement and provision.

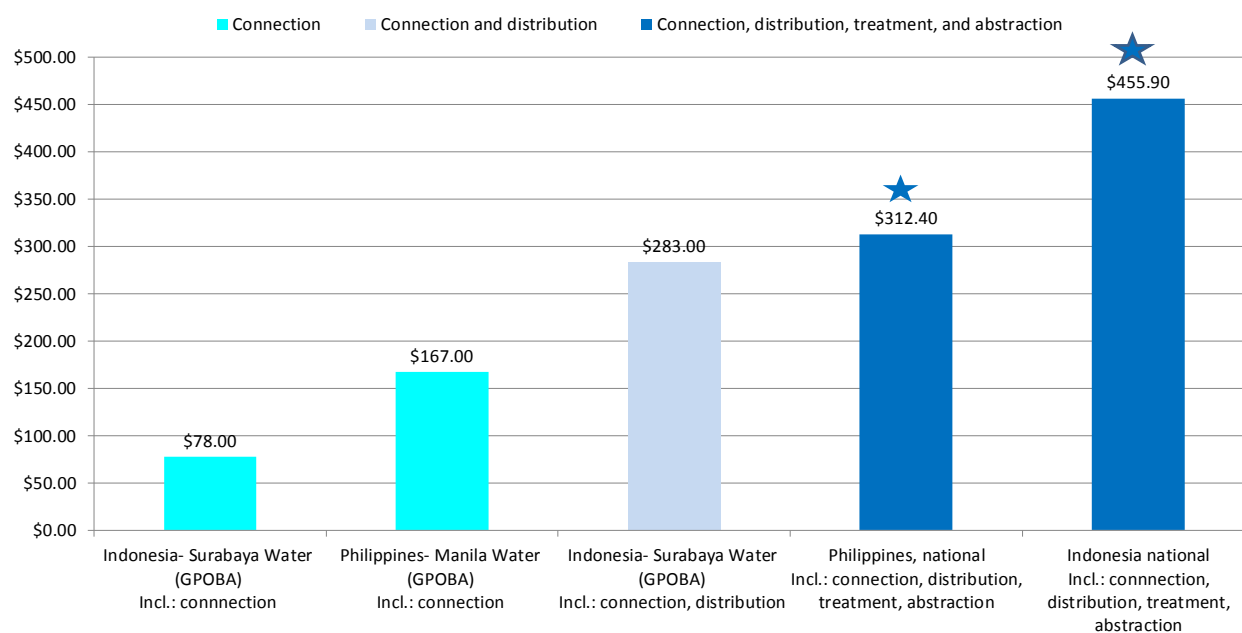
Ideally, this section would include solid views on the efficiency of RBF through rigorous benchmarking against non-RBF projects. The data available unfortunately did not allow this. As shown in the following sections, the cost data are at least consistent with RBF being about as efficient as conventional projects. That is to say, the available data did not indicate that RBF outputs were extremely expensive. However, this does not prove that RBF is more efficient than conventional aid.

Household connections in Southeast Asia

A comparison of direct costs of household water connections in RBF projects with typical non-RBF project costs in Southeast Asia is shown in Figure 8.2. The available data indicate that the costs of household connections in Southeast Asia under RBF could be similar to the costs of outputs under conventional aid. Stars above a bar indicate a non-RBF cost. The figure also shows whether more than a connection was provided, such as a distribution network or abstraction and treatment facilities.

³² Direct cost is the short-term cost of delivering an output under an RBF scheme. This reflects the amount of money a service provider must spend in order provide an output which triggers an RBF payment. For networked services, this may include more than a connection (for example, some water distribution pipes).

Figure 8.2: Comparison of Direct Costs of Household Connection in RBF Projects with Non-RBF, in Southeast Asia



Note: Stars denote non-RBF benchmarks

The OBA projects in the Philippines and Indonesia have lower direct costs than the non-RBF benchmarks. However, this could be explained by the fact that the benchmarks include more infrastructure, as they also include treatment and abstraction costs. The Manila OBA project only covered the cost of a connection, while the Surabaya OBA project included connection and distribution costs. Neither included the cost of abstraction and treatment.

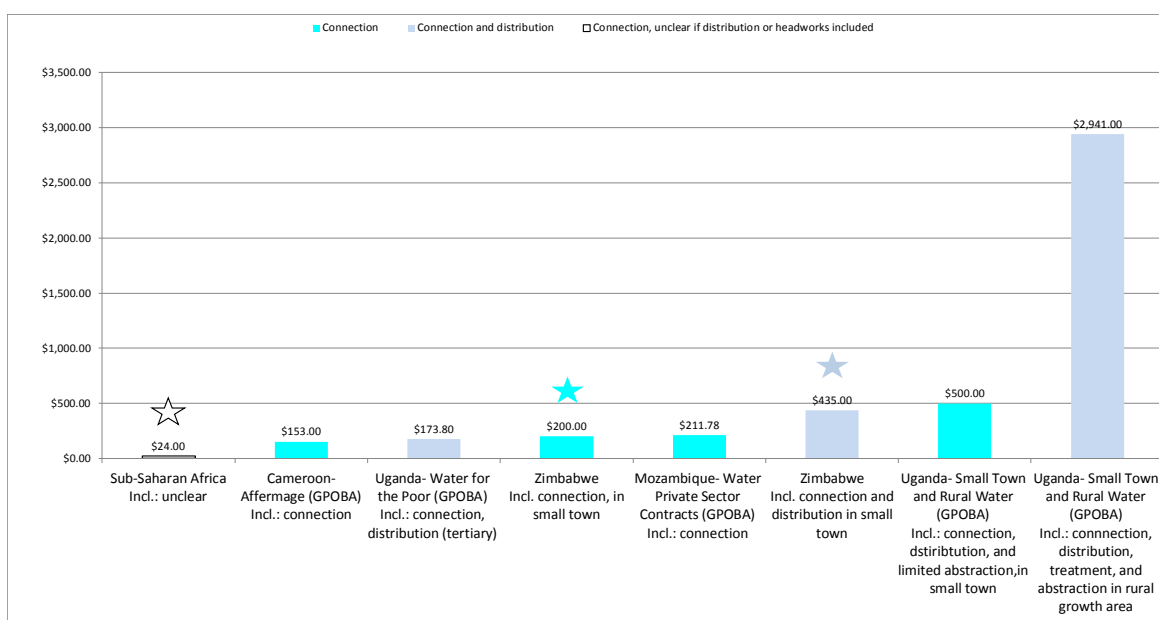
Household Connections in Africa

A comparison of the direct costs of household water supply in Africa in RBF projects with direct costs in non-RBF projects is shown in Figure 8.3. The available data indicate that the costs of household connections in Africa under RBF could be similar to the costs of outputs under conventional aid. The costs indicate that these RBF projects could be about as efficient as non-RBF projects. That is to say, the available data do not indicate that any output was extremely expensive.

The benchmark for connection costs in Sub-Saharan Africa is low, but may not be reliable (Africon, 2008). Its source notes that it is not statistically significant. The other non-RBF benchmarks are provided from a recent estimate of the cost of water supply in small towns in Zimbabwe³³. As none of the RBF projects were implemented in Zimbabwe, the Zimbabwe benchmark does not provide a true like-for-like benchmark comparison. Better benchmarks were not available.

³³ These benchmarks come from a recent assignment Castalia completed on water supply in small towns in Zimbabwe.

Figure 8.3: Comparison of Direct Costs of Household Connection in RBF Projects with Non-RBF, in Africa



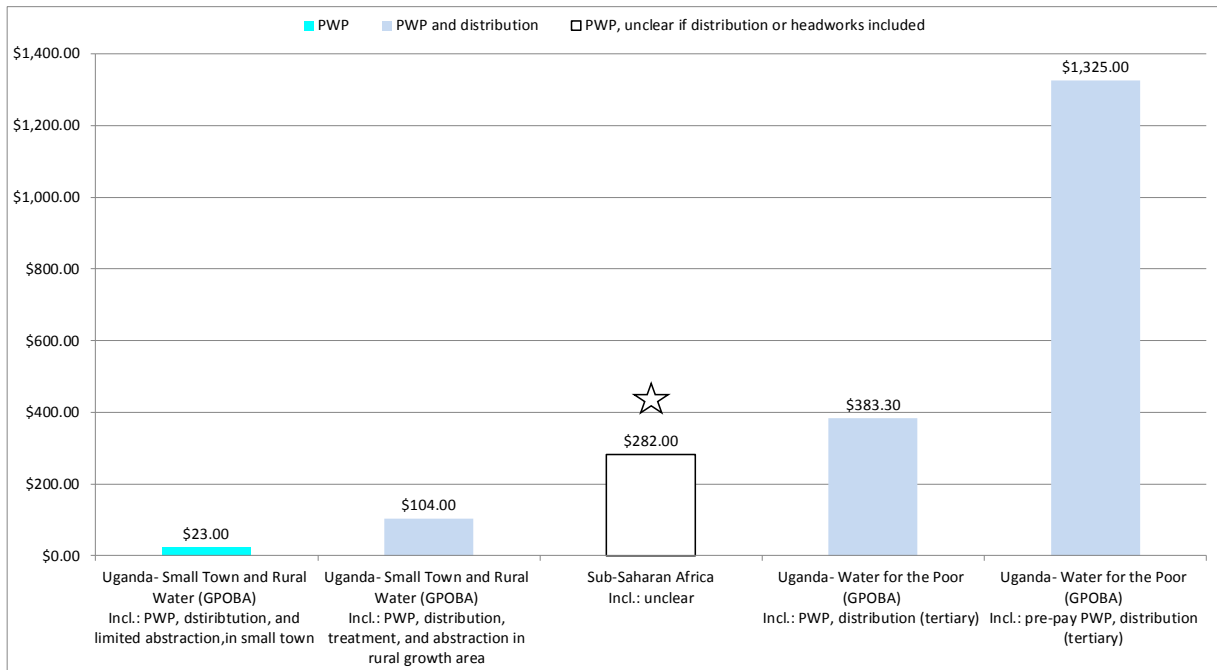
Note: Stars denote non-RBF benchmarks.

The per connection costs for the Cameroon: Affermage and the Uganda: Water for the Poor projects are lower than the connection cost in Zimbabwe. The per connection cost for the Mozambique: Water Private Sector Contracts (GPOBA) project is slightly higher than per connection cost in Zimbabwe (6 percent). The cost of connection, distribution, and limited abstraction for the Uganda: Small Town and Rural Water project is 15 percent higher than the cost of connection and distribution in Zimbabwe. The cost of connection, treatment, and abstraction for the Uganda: Small Town and Rural Water project is significantly higher than the benchmarks, which is to be expected as this project includes more systems than the benchmarks.

Public water points in Africa

A comparison of direct costs of public water points in Africa in RBF projects with non-RBF projects is shown in Figure 8.4. The available data indicate that the costs of public water points under RBF in Africa could be similar to the costs of outputs under conventional aid. All the RBF projects in this figure are in Uganda.

Figure 8.4: Comparison of Direct Costs of Public Water Points in RBF Projects with Non-RBF, in Uganda



Note: Stars denote non-RBF benchmarks

The RBF costs are dispersed around the benchmark cost for Sub-Saharan Africa. The Uganda: Water for the Poor (GPOBA) project is clearly an outlier. The costs of water points under this project are higher because they use more complex technology to dispense water on payment through coins or cards. The benchmark cost for Sub-Saharan Africa may be skewed, as more than 80 percent of the contracts on which it is based come from just five countries. It is thus hard to comment on whether these costs were high or low.

9 Sustainability

Sustainable projects are those with benefits that are likely to continue after donor funding has been withdrawn.³⁴ Most projects in the sample closed too recently for sustainability over the long term to be assessed. Some of them are ongoing. Those projects that were completed many years ago generally did not have data on long term performance. Most evaluations are written within two years of project close, and do not report on anything that happened after the project closed. However, data were available on some leading indicators of sustainability, such as cost-recovery tariffs.

Of the 30 projects in the sample, 18 (60 percent) had some information upon which a judgment of sustainability prospects could be based³⁵. Sustainability was rated as “good” or “poor.” The ratings were based on leading indicators of sustainability, such as recovering operating costs. Of those 18 projects, twelve (67 percent) were rated as “good.” and six (33 percent) were rated as “poor.” These ratings, and the underlying information upon which they were based, are shown in Table 9.1. Projects for which no judgment was possible are indicated with a dash.

It should be noted that data on long-run sustainability were not available. Data on how well infrastructure functions over time would be a useful indicator of long run sustainability. This table shows leading indicators of sustainability for RBF projects, when they were found.

³⁴ This is based on the Organization for Economic Cooperation and Development’s (OECD) Development Assistance Committee (DAC) criteria for evaluation of development assistance, found at <http://www.oecd.org/development/evaluation/daccriteriaforevaluatingdevelopmentassistance.htm>

³⁵ DFID’s WASH Payment by Results Program plans to use sustainability payments, which are paid out regularly for 2.5 years. The performance of these sustainability payments would be worth examining in the future. As the project began providing outputs in 2014, it could not be included in the research sample.

Table 9.1: Sustainability Rating of Sample Projects

Project Name	RBF Type	Sector	Closing	Sustainability Prospects	Evidence
Australia: Water Payment Assistance (PAS)	Voucher	Water	Ongoing	Good	The project puts customers who struggle to pay bills on special payment plans, and helps them get financial counseling which should enable them to pay their bills in full in the future.
Bangladesh: BRAC WASH Vouchers	Voucher	Sanitation	Ongoing	-	An evaluation has not been published.
Bangladesh: DISHARI	CCT	Sanitation	Ongoing	Poor	This project had poor verification, which resulted in incentives being paid to villages which did not make the desired changes in sanitation behavior. However, high levels of latrine maintenance have been observed (Trémolet, Kolsky, & Perez, 2010).
Bangladesh: Social Investment Program (World Bank)	OBA	Water	2011	-	The project's evaluation, written in 2011, did not separate the OBA components from the non-RBF components (World Bank, 2011). No assessment of sustainability was possible.
Brazil: PRODES	OBA	Sanitation	Ongoing	Good	The program has been running since 2001. It has reached over 6.8 million people (Agência Nacional de Águas, 2014). It is unclear how well the wastewater treatment facilities delivered by the project have been maintained. However, the fact that the project is running so long without donor support indicates that it is probably sustainable.
Cambodia: East Meets West Toilet Rebate	CCT - rebate	Sanitation	Ongoing	-	An evaluation has not been published.
Cameroon: Affermage (GPOBA)	OBA	Water	2013	Poor	The project delivered 25,254 outputs. An evaluation was published in 2014, which found that 10 percent of the connections delivered had become inactive as of March 2014. Many of these may have become inactive because households consumed a lot of water, and then could not afford to pay bills (World Bank, 2014).

Project Name	RBF Type	Sector	Closing	Sustainability Prospects	Evidence
Guinea: Water Supply (02) (World Bank)	OBA	Water	1998	Poor	An evaluation was published in 1998, which rated the ongoing sustainability of the project as 'likely' because a follow up project was aimed at correcting institutional shortcomings of this project (World Bank, 1998). However, this follow up project did not realize the expected institutional improvement—the impact in this area was rated “negligible.” Quality of water services has deteriorated since 1998 (World Bank, 2006).
Haiti: Oxfam Hygiene Vouchers	Voucher	Water and Sanitation	Ongoing	-	The project is subsidizing consumable goods in a crisis, and is not trying to create an ongoing service system. Once donor support is withdrawn, it should stop working.
Honduras: Extension of Water and Sanitation (GPOBA)	OBA	Water and Sanitation	2012	-	An evaluation has not been published. The project has a stipulation that participating service providers must cover operating and maintenance costs.
India: Andhra Pradesh Rural Water (GPOBA)	OBA	Water	2009	Good	As of September 2011, 11 of the 23 water treatment plants delivered by the project were generating enough revenue to cover operations and maintenance costs. All plants were expected to cover these costs by 2012, but data confirming that they occurred is not yet available (World Bank, 2011).
India: Nirmal Gram Puraskar	CCT	Sanitation	2011	Poor	Behavior change in villages that received awards for eliminating open defecation was often not maintained. Awards were also granted to villages that never eliminated open defecation for even a short time (Department of Drinking Water and Sanitation, 2011).
Indonesia: Hibah	OBA	Water and Sanitation	Ongoing	Good	The project has been scaled up with additional funding, and the World Bank and Asian Development Bank have expressed interest in participating. As of 2011, connection charges and tariffs have been affordable for beneficiaries (Averill, Scally-Irvine, Nordiawan, Howard, & Gouy, 2011).

Project Name	RBF Type	Sector	Closing	Sustainability Prospects	Evidence
Indonesia: PAMSIMAS (World Bank)	OBA	Water	Ongoing	Poor	A 2012 independent review claimed that community service providers were ill-prepared to address maintenance problems due to shortages of funds and a lack of dedicated maintenance staff. It is unclear whether these issues have since been addressed (Willetts & Howard, 2012).
Indonesia: Second Generation	OBA	Water	2012	Good	As of November 2012, 20 out of 21 loans issued by public banks to CBOs were on course to be repaid in the Indonesia: Second Generation Project (Robinson, 2013). This suggests the projects have achieved cost recovery.
Indonesia: Surabaya Water (GPOBA)	OBA	Water	2012	-	No evaluation has been published.
Kenya: Microfinance for Community Water Projects (GPOBA)	OBA	Water	Ongoing	Good	Most community water providers in the Microfinance for Community Water Projects (GPOBA) project in Kenya were repaying their loans from K-Rep bank, so they must have recovered costs (Mwangi, 2014). Hard numbers were not available as the project has not been fully evaluated, but the interviewee felt confident that most loans were being repaid. No evaluation has been published.
Mexico: Decentralized Loan (World Bank)	OBA	Water and Sanitation	2009	-	The project gives RBF payments to providers that increase revenues and reduce water use. 60 utilities received payments for increasing overall efficiency by 10 percent (Global Partnership on Output-Based Aid, Output-Based Disbursements in Mexico: Transforming the Water Sector in Guanajuato, 2014).
Morocco: Improved Access (GPOBA)	OBA	Water and Sanitation	2011	-	A 2012 evaluation said that the project's monitoring data did not provide much insight into the sustainability of the project. The evaluation said that the sustainability could have been assessed better if the IVA ³⁶ issued regular reports, and data had been collected on operators' collection ratios.

³⁶ IVA stands for Independent Verification Agent. IVAs are used to verify outputs delivered by service providers, and should be independent of providers to ensure accurate verification.

Project Name	RBF Type	Sector	Closing	Sustainability Prospects	Evidence
Mozambique: PLM	OBA	Sanitation	Ongoing	Poor	The program has been running since the late 1980s (precise year is not available). A case study claims that there is evidence that households have been maintaining slabs and moving latrine slabs to new pits and maintaining them, but this evidence is not further explained. Since the late 1990s, donor funding has been withdrawn and very few PLM latrine suppliers were financially sustainable as of 2007 (Trémolet, Kolsky, & Perez, 2010).
Mozambique: Water Private Sector Contracts (GPOBA)	OBA	Water	2014	-	An evaluation has not been published.
Paraguay: Fourth Rural WSS (World Bank)	OBA	Water	2007	Good	The average <i>aguatero</i> (small, private water provider) has been operating for 12 years. Some <i>aguateros</i> have been operating for more than 20 years.
Philippines: Manila Water (GPOBA)	OBA	Water	2013	Good	Manila Water is operating profitably (Manila Water Company, 2013), indicating that it will be able to continue to meet the operating and maintenance cost of service provided to low income consumers under the Philippines: Manila Water (GPOBA) project.
Senegal: On-Site Sanitation (GPOBA)	OBA	Sanitation	2011	Good	A 2012 evaluation claimed that maintenance needs for most facilities would be low, as they used simple designs and sturdy materials. Facilities can last for ten years if maintained regularly. For facilities that do not handle excreta, maintenance should only consist of washing, unblocking pipes, and other simple tasks. The cost of emptying latrines should fall because the Gates Foundation gave a \$17 million grant to the national sanitation agency to make fecal sludge emptying services more accessible to the poor.
Senegal: PAQPUD (World Bank)	OBA	Sanitation	2007	Good	This project was extended through Senegal: On-Site Sanitation (GPOBA). The extension provided the same services as PAQPUD, so PAQPUD should have similar sustainability characteristics.

Project Name	RBF Type	Sector	Closing	Sustainability Prospects	Evidence
Somalia: WASH Cluster	Voucher	Water	Ongoing	-	The project is subsidizing consumable goods in a crisis, and is not trying to create an ongoing service system. Once donor support is withdrawn, it should stop working.
Uganda: Small Town and Rural Water (GPOBA)	OBA	Water	2012	Good	Nine water schemes receiving aid under the Uganda: Small Town and Rural Water (GPOBA) were recovering costs at the time of project closing, out of 11 total schemes (82 percent) (World Bank, 2013).
Uganda: Water for the Poor (GPOBA)	OBA	Water	2013	-	An evaluation has not been published.
Uruguay: OSE Modernization (World Bank)	OBA	Sanitation	2013	Good	The 2013 evaluation of the project does not comment on the sustainability of the RBF component. However, the evaluation does say that parts of the RBF component have been put in to the government's National Plan for Connections (World Bank, 2013). Presumably, the these components were put in to the National Plan because the RBF schemes were judged to be sustainable.
Vietnam: East Meets West Toilet Rebate	CCT - rebate	Sanitation	Ongoing	-	An evaluation is not available. This project may have better verification than other behavior change projects, but an evaluation will make this clear.

Sustainability of behavior change in conditional cash transfer projects

Evaluations of the Nirmal Gram Puraskar project in India raised serious doubts about whether villages that received the prize for being free of open defecation (ODF) had retained ODF status after receiving the prize. A government evaluation found that 33 percent of households in villages that received the ODF prize had at least one member that still defecated in the open (Department of Drinking Water and Sanitation, 2011). Some of these villages may have been ones that actually earned the ODF prize but later stopped being ODF. Some villages may have received the prize without being ODF for even a short time.

The prize was a one-off incentive—there was no incentive to continue to maintain ODF status a prize was received. Some towns just wanted to receive the prize, and then immediately abandoned efforts to maintain ODF status (Mathew, 2014). Spreading out awards over time could incentivize sustainable behavior change. The current installment of NGP, which began in 2012 under the new national sanitation campaign, has additional levels of competition for prizes leading up to the national prize (Mathew, 2014). However, village leaders may have been more drawn to the prestige of winning a prize than the payments it included. Leaders of ODF villages were flown to meet national or state government officials (Robinson, Interview with Andy Robinson, 2014).

The Bangladesh: DISHARI project did not verify results, and thus relied only on self-reporting. The monitoring regime is weak as it is not independent. Payments were delivered to villages that did not achieve ODF status. Village Governments (unions) have a clear incentive to falsely report ODF status in order to receive prizes (Trémolet, Kolsky, & Perez, 2010).

Section 15 discusses how natural experiments could be built in to new projects to test which CCT payment structures work best. Information on whether behavior was sustained after receiving a prize was not available for the other CCT projects in the sample.

Projects that provide consumable goods in humanitarian emergencies are not intended to be sustainable

Two voucher projects in the sample provide consumable goods in crisis environments. Both give vouchers to consumers, who exchange them for specified goods at small private vendors. The vendors then return the vouchers to the donor, and receive a payment for the goods sold.³⁷

The Somalia: WASH Cluster project provides vouchers for containers of water. Droughts and decaying infrastructure have driven up the cost of water in many areas. Ongoing conflict may exacerbate these issues. This project aims to provide poor people with temporary access to affordable water (United Nations Children's Fund, 2014).

The Haiti: Oxfam Hygiene Vouchers project provided vouchers for hygiene goods, such as soap and feminine hygiene products. The 2010 earthquake in Haiti killed nearly 220,000 people in the country, and made 1.1 million people homeless. This project aimed to improve health conditions in the Carrefour Feuilles area of Haiti after the earthquake (Brady & Creti, 2010).

³⁷ An alternative to vouchers for consumable goods is to provide cash for people to choose what they want, rather than using vouchers to compel them to acquire specified items. A discussion of vouchers and cash subsidies for food is found here: <https://www.wfp.org/cash-and-vouchers>

The services provided by these projects are unlikely to continue once donor aid is withdrawn, all else being equal. These two projects directly subsidize consumption of goods in a humanitarian emergency, and thus are not aiming to create a sustainable system of service provision. Such projects may be the only option in emergency environments with weakened local institutions.

Once the crisis ends, such projects may no longer be needed. The market may be able to provide services at more reasonable prices. Alternately, other RBF interventions could provide more sustainable services.

10 Other Performance Dimensions

This section reviews how RBF projects in WASH have performed in: targeting the poor; providing services which are high quality; and adhering to the Paris Principles on Aid Effectiveness.

Unintended consequences from RBF projects, either positive or negative, were not found. This does not mean they did not occur.

10.1 Targeting the Poor

Of the 30 projects in the sample, 17 (57 percent) had some data on targeting of beneficiaries. Of those 17 projects, 14 had data on the targeting method employed. Only four projects had data on the results of targeting.

Table 10.1 shows the targeting methods used, and assessments of the targeting results where available. Projects employed either geographic targeting or household targeting.

- **Geographic targeting** means serving all people in an area, because that area is likely to have households that meet the eligibility criteria. For example, Cameroon: Affermage (GPOBA) targeted unconnected urban households, whose income was thought to be \$68 per month. Three projects used geographic targeting.
- **Household targeting** means identifying individual households that meet eligibility criteria. Ten projects used household targeting. Because income data is not generally available for individual households, proxies were used. For example, the Indonesia: Hibah project targeted households based on electricity usage or size of houses as proxies for poverty.

Geographic targeting is easier to implement than household targeting, because it does not require collection of data on individual households. However, geographic targeting may be less precise, as it can target the less needy people in a given area. Household targeting can more precisely identify the neediest beneficiaries, but requires better data, and more work to analyze the data—and is more expensive to carry out (Castañeda, 2005).

Table 10.1: Targeting Methods

Project Name	RBF Type	Sector	Targeting Method	Targeting Results
Vietnam: East Meets West Toilet Rebate	CCT - rebate	Sanitation	Household: during project design, EMWF intended to serve the lowest 40% of the rural population. They believe that their three socioeconomic categories (poor, near poor, and economic hardship) comprise the population in the lowest 40%.	-
India: Nirmal Gram Puraskar	CCT	Sanitation	No targeting was used for the CCT payments. Any participating town could participate. However, some states chose to target input-based subsidies for latrines to poor households as part of the Total Sanitation Campaign.	-
Indonesia: Hibah	OBA	Water	Household: households were targeted by electricity usage.	98 % of households served were classified as MBR (low-income households), according to electricity usage (Averill, Scally-Irvine, Nordiawan, Howard, & Gouy, 2011).
Haiti: Oxfam Hygiene Vouchers	Voucher	Water and Sanitation	Household: households were targeted according to the following criteria: no source of revenue, households with high dependency ratio, and households with a family member who was elderly (more than 60 years old), physically or mentally challenged, a widow or widower, pregnant, or chronically ill.	-
Senegal: PAQPUD (World Bank)	OBA	Sanitation	Household: there were two targeting mechanisms. (1) The project focused on peri-urban areas deemed poor. 66 % of the population in these areas was below the poverty line in 2002, versus 33 % of the population in the greater Dakar area; (2) within those areas, community groups identified houses having 'substandard' sanitation facilities.	-

Project Name	RBF Type	Sector	Targeting Method	Targeting Results
Honduras: Extension of Water and Sanitation (GPOBA)	OBA	Water and Sanitation	Geographic: The project targeted communities where household incomes average less than \$46 per month, or \$2 per day.	-
Philippines: Manila Water (GPOBA)	OBA	Water	-	Beneficiaries were above the lowest 30 % income decile (World Bank, 2013).
India: Andhra Pradesh Rural Water (GPOBA)	OBA	Water	-	Served people making less than US\$20 per month (World Bank, 2011).
Uganda: Small Town and Rural Water (GPOBA)	OBA	Water	-	There are not many well-off people in small towns and rural growth areas of Uganda. The IVA was supposed to ensure that poor households received connections under the OBA scheme, but in practice this may not have always been done. (World Bank, 2013).
Mozambique: Water Private Sector Contracts (GPOBA)	OBA	Water	Geographic: The project targeted the poor by: (1) Geographic targeting of peri-urban areas where average income or expenditure below the national average; (2) households without water connections are generally very poor; (3) use of yard-taps will cause poor to self-select.	-

Project Name	RBF Type	Sector	Targeting Method	Targeting Results
Cameroon: Affermage (GPOBA)	OBA	Water	Geographic: The average income of unconnected urban households is thought to be \$68/month. As available data does not enable household-by-household targeting, the project has a mid-term assessment built in. This assessment will create a socio-economic profile of beneficiaries, and recommend changes to eligibility criteria if needed to ensure that only poorer households benefit from subsidies.	-
Indonesia: Surabaya Water (GPOBA)	OBA	Water	Household: Households were targeted based on proxies for income: building size, road width, and installed electricity capacity.	-
Senegal: On-Site Sanitation (GPOBA)	OBA	Sanitation	Geographic: All households in targeted areas are eligible for subsidies. It is not clear how targeted areas were chosen.	-
Uganda: Water for the Poor (GPOBA)	OBA	Water	Geographic: geographic targeting focused on poor slum areas, where most households have a monthly income of less than \$48. Also, beneficiaries, self-select, as the type of connections provided are seldom used by non-poor people. However, there is no data on whether the targeting worked.	-

Project Name	RBF Type	Sector	Targeting Method	Targeting Results
Bangladesh: DISHARI	CCT	Sanitation	Household: Households were deemed eligible if they met one of the following criteria: (1) Households did not own land; (2) people were homeless or pavement dwellers; (3) primary wage earner is a day laborer owning less than 50 decimal of agricultural land or living in a rented home smaller than 200 square feet, and having no fixed source of income; (4) headed by a disabled person, a woman, or a person older than 65 years.	-
Somalia: WASH Cluster	Voucher	Water	Household: Selection criteria can vary across different areas served, but the project is supposed to serve the neediest in communities where it operates. Beneficiary lists have to be approved by a committee of village representatives.	-
Australia: Water Payment Assistance (PAS)	Voucher	Water	Household: The project only helps people facing financial crises (e.g., unexpected medical expenses make it hard to pay water bill). Eligibility was assessed by social workers at charities or the service provider.	-

Note: All targeting results in this table come from evaluations. It is not generally clear how the evaluations found these data.

10.2 Service Quality

Quality of WASH services can be reflected through a number of factors. Convenience can be reflected in measures such as distance from a household to a latrine. Reliability can be reflected in how often water flows through pipes. Water quality can be reflected in levels of chemical and biological contaminants in water. Of the 30 projects in the sample, seven had some data on service quality. Those projects generally had high quality service, as shown in Table 10.2.

The available information did not indicate how RBF influenced service quality differently than conventional aid. However, as many RBF projects issued payments upon verification that outputs provided the desired services, it is plausible that RBF would increase the quality of outputs as compared to input-based aid.

Table 10.2: Service Quality

Project Name	RBF Type	Sector	Quality indicators
Guinea: Water Supply (02) (World Bank)	OBA	Water	Water quality: The World Bank’s Implementation Completion Report said that the water can be consumed as delivered (World Bank, 1998)
India: Andhra Pradesh Rural Water (GPOBA)	OBA	Water	Water quality: Tests showed water as meeting both standards of the World Health Organization and the Bureau of Indian Standards Reliability: The UV treatment plants run for at least 8 hours a day, 4 hours in the morning and 4 hours in the evening (World Bank, 2011)
Indonesia: Hibah	OBA	Water	Water quality: Beneficiary surveys reported that water was of good quality (Averill, Scally-Irvine, Nordiawan, Howard, & Gouy, 2011)
Paraguay: Fourth Rural WSS (World Bank)	OBA	Water	Reliability: The World Bank’s Implementation Completion and Results Report states that participants in workshops reported that water supply is continuous, although metering could be improved Water quality: Participants in workshops report that water supply is of good quality, although chlorination and testing could be improved (World Bank, 2007)
Philippines: Manila Water (GPOBA)	OBA	Water	Service quality: Services meet the quality specifications of the Metropolitan Waterworks and Sewerage System, the regulator for water services in Manila (World Bank, 2013)
Haiti: Oxfam Hygiene Vouchers	Voucher	Water and Sanitation	Service quality: 100 percent of surveyed beneficiaries reported that hygiene kits were of appropriate quality, and complete (Brady & Creti, 2010)
India: Nirmal Gram Puraskar	CCT	Sanitation	Service quality: Quality of latrines provided by the Total Sanitation Campaign (a non-RBF latrine subsidy program) varies greatly. In some states, latrines are of higher quality, while in others, cheap materials and poor workmanship are common (Robinson, Enabling Environment Endline Assessment: Himachal Pradesh and Madhya Pradesh, India, 2012). The Nirmal Gram Puraskar was created to incentivize people to use latrines, after it became clear that subsidized latrines were not being used

10.3 Paris Principles on Aid Effectiveness

The Organization for Economic Cooperation and Development's Paris Declaration on Aid Effectiveness of 2005 sets out principles to make development aid more effective. Those principles are:

- **Ownership:** Developing countries set their own strategies for poverty reduction, improve their institutions and tackle corruption
- **Alignment:** Donor countries align behind these objectives and use local systems
- **Harmonization:** Donor countries coordinate, simplify procedures and share information to avoid duplication
- **Results:** Developing countries and donors shift focus to development results and results get measured
- **Mutual Accountability:** Donors and partners are accountable for development results.

RBF in WASH seems to comply with the principles of Ownership, Results, and Mutual Accountability, but may not often comply with Alignment and Harmonization. Compliance with all five principles could probably be improved in RBF.

RBF could potentially be chosen when it is fundamentally ill-suited to the problem donors want to address. For example, RBF may not be a good way to expand water supply coverage when the binding constraint is service providers' engineering capacity. In that case, technical assistance would probably be better than RBF, as RBF is intended to provide subsidies. No examples of such misuse of RBF were found. However, RBF may be used when a different type of subsidy would work better.³⁸

Ownership

RBF projects are often promoted and developed by outside experts, rather than people in country. This was discussed in Section 5.2. As the discussion there concluded, development by outside experts can lead to a lack of ownership of RBF as a concept, or of the particular designs developed. Of course there are exceptions to this, such as the PRODES project in Brazil, which was developed without outside help. The Indonesian Water Hibah was developed with local officials, and is now seen by those officials as a model.

Alignment

RBF projects are generally aligned with local objectives, but may not make use of local systems. Sometimes, this is because donors think that local systems may be effective or may pose fiduciary risk.

Many developing countries aim to meet Millennium Development Goals³⁹ in water and sanitation. RBF projects in WASH typically help meet those objectives. Fourteen projects in the sample intended to help a country meet its MDGs or other policy objectives.

³⁸ Section 15 recommends that practitioners should ask whether RBF is the best option, and consider alternatives to RBF, when planning interventions.

³⁹ <http://www.un.org/millenniumgoals/>

Many RBF projects create new systems, rather than work with existing systems. Examples include the water OBA projects in Manila and Surabaya. In contrast, Indonesia's Water Hibah made good use of local systems by relying on an existing legal mechanism for inter-governmental fiscal transfers (Ehrhardt, 2014).

Harmonization

Harmonization seems generally poor in RBF. RBF projects are often limited to a certain geographical area, with potential for other projects to run alongside them or even overlap them. For example, Philippines: Manila Water (GPOBA) gave subsidies to a utility to do things which the regulator already required the utility to do, and for which the utility did not require subsidies⁴⁰ (Soriano, 2014).

With few exceptions, RBF projects do not have a national fund which pools money from multiple donors to execute a sector-wide approach. Some projects that do have such a fund are:

- **Indonesia: Hibah:** This project operates nationally, with funding from Australia's Department for Foreign Affairs and Trade (DFAT), and the United States Agency for International Development (USAID) (Averill, Scally-Irvine, Nordiawan, Howard, & Gouy, 2011). The World Bank and the Asian Development Bank have also expressed interest in using the Hibah mechanism
- **Bangladesh: BRAC WASH Vouchers:** This project collects money from multiple donors, including DFID and the Gates Foundation, and operates in half the rural sub-districts of Bangladesh (Karim, 2014)
- **Somalia: WASH Cluster:** The Cluster's Humanitarian Coordinator coordinates WASH activities of donors and aid groups nationally. The Coordinator has support from the United Nations Office for the Coordination of Humanitarian Affairs (OCHA) (Somalia WASH Cluster). Activities in different regions of Somalia are coordinated by various local and international NGOs, and by the United Nations Children's Fund (UNICEF)

RBF thus has the potential to be an excellent mechanism to harmonize government and donor funding in a sector, but too often this potential is not realized.

Results

RBF has a better focus on results than conventional aid. Conventional aid delivers money up front in the expectation that the desired outputs will be provided. RBF is by nature focused on results, as donors makes payments to providers once outputs are verified. If results are verified, then results should have been measured. However, as discussed in Section 12, results are often not published. Also, verification of sanitation behavior change has not worked well in RBF (see Section 11.4).

Mutual accountability

RBF projects provide better accountability than traditional aid, because outputs are clearly defined, and payment is based on those outputs. Many RBF schemes structure payments to

⁴⁰ The utility (Manila Water) received sufficient revenue from tariffs to cover the costs of expanding coverage. The utility was required to do so in its concession contract, and periodic tariff adjustments ensured that this was the case.

ensure that working outputs are delivered. For example, Uruguay: OSE Modernization (World Bank) verified installation of sewerage connections, and then three months of bill payment by the beneficiary household. However, the accountability of RBF projects to beneficiaries and taxpayers who fund donors could be increased if more information was collected and disclosed (see Section 12).

11 Overview of What Works

The evidence shows that RBF works well to encourage private firms to provide goods and services that households want. RBF schemes can work well in low-capacity environments. Given these positive attributes, the challenge is to get such schemes to operate at scales large enough to make a real difference.

In contrast, the case for using RBF with public providers is weaker. The public sector has other tools to get public providers to deliver desired results, and public providers may respond less well to the incentives offered by RBF. There are times that RBF with public providers makes sense—for example, the Indonesian Water Hibah is a highly effective inter-governmental fiscal transfer mechanism. However, the rationale for using RBF with public providers needs to be established in each case.

Moreover, the case for RBF is weakened when special ‘bridge-finance’ mechanisms are needed. Bridge-finance mechanisms aim to make RBF work even when service providers lack capital. However, these mechanisms add complexity. While they can work (the GPOBA’s Kenya: Microfinance for Community Water Projects has been successful), the need for bridge-financing increases costs and risks. The benefits of RBF (compared to other support models) need to be compelling in cases where help with bridge financing is needed.

Finally, it remains to be seen if RBF is a good tool for achieving behavioral changes, such as encouraging everyone in a village to adopt safe sanitation practices and avoid open defecation. There are obvious difficulties in creating payment mechanisms that depend on reliably monitoring private behavior such as defecation or hand-washing. The high profile failure of the Nirmal Gram Puraskar sanitation project in India—which aimed to encourage people to build and use latrines—failed because of lax verification and poor implementation. Other projects are working hard to overcome these problems by using more rigorous verification—for example, the Vietnam: East Meets West Toilet Rebate project. However, it is not yet clear how widely such schemes can succeed.

11.1 RBF Works Well When Private Providers Supply Outputs That Households Want

There are 20 projects in the sample in which private providers supplied goods or services for which households had a pre-existing demand. Of these, we were able to assess the effectiveness of 13. As shown in Table 11.1, nine of the 13 were highly effective.⁴¹ The remaining four were moderately effective. None were ranked ‘poor’ on effectiveness. The evidence supports the view that RBF can be effective when it engages private providers in supplying goods and services that households want. Note that public providers can also work well, even if they are generally not as likely to succeed as private providers (see section 11.2).

Services that households want include:

⁴¹ Scoring was only done for projects that had easily measurable units of output (such as the number of on-site sanitation systems built). Some projects had multiple objectives, but only success in delivering measurable outputs was scored. CCT projects are not scored in the following table, as behavior change aims to change behavior over the long term and is not easily quantified.

- Water connections (as in Kenya: Microfinance for Community Water Projects (GPOBA))
- Communal water points (as in Uganda: Water for the Poor (GPOBA))
- Sewerage connections (as in Uruguay: OSE Modernization)
- On-site sanitation (as in Senegal: PAQPUD (GPOBA)); and
- Consumables such as soap (as in Haiti: Oxfam Hygiene Vouchers)⁴².

In contrast, RBF projects that attempt to change behavior—for example by changing what may be a preference for open defecation—have a more mixed record (see Section 11.4).

Projects in Table 11.1 were rated with ‘high effectiveness’ if they delivered 100 percent or more of their target number of outputs; ‘moderate effectiveness’ if they delivered less than 100 percent, but at least 50 percent of their target; and ‘poor effectiveness’ if they delivered less than 50 percent. These projects all provided outputs that households want.

⁴² This project does not appear in Table 11.1

Table 11.1: Type of Provider and Effectiveness in Projects Providing Goods that Households Want

Effectiveness: Outputs Provided				
Provider	High Effectiveness	Moderate Effectiveness	Poor Effectiveness	Total
Private	<ul style="list-style-type: none"> ▪ Bangladesh: BRAC WASH Vouchers (8) ▪ Guinea: Water Supply (02) (World Bank) ▪ India: Andhra Pradesh Rural Water (GPOBA) ▪ Kenya: Microfinance for Community Water Projects (GPOBA) ▪ Philippines: Manila Water (GPOBA) ▪ Senegal: On-Site Sanitation (GPOBA) ▪ Senegal: PAQPUD (World Bank) ▪ Uganda: Small Town and Rural Water (GPOBA) 	<ul style="list-style-type: none"> ▪ Bangladesh: BRAC WASH Vouchers (3) ▪ Cameroon: Affermage (GPOBA) ▪ Honduras: Extension of Water and Sanitation (GPOBA) 	(0)	11
Public and private*	<ul style="list-style-type: none"> ▪ Morocco: Improved Access (GPOBA) (2) ▪ Mozambique: Water Private Sector Contracts (GPOBA) 	<ul style="list-style-type: none"> ▪ Mozambique: PLM (1) 	(0)	3
Public	<ul style="list-style-type: none"> ▪ Indonesia: Hibah (2) ▪ Uruguay: OSE Modernization (World Bank) 	<ul style="list-style-type: none"> ▪ Indonesia: Surabaya Water (GPOBA) (1) 	<ul style="list-style-type: none"> ▪ Uganda: Water for the Poor (GPOBA) (1) 	4
Total	12	5	1	18

*Note: Some projects used a mix of public providers and providers. Mozambique: Water Private Sector Contracts is included here because the single provider is under a mix of public and private ownership. When GPOBA's [Project Appraisal Document](#) was written in 2007, the service provider (Aguas da Região de Maputo, or AdeM) was majority-owned by private investors. In 2010, AdeM became majority-owned by the Government—the year that project execution began in earnest. Since many projects met or exceeded their output targets, 'High effectiveness' was defined as delivering 100 percent of targets. 'Moderate' was at least 50 percent and less than 100 percent, and 'Low' was below 50 percent.

Private providers include multi-national corporations (such as Guinea: Water Supply (02), large national companies (such as Philippines: Manila Water), and small-scale entrepreneurs like those recruited into the Uganda: Small Towns and Rural Water project.

We classed all non-government providers as ‘private.’ This includes Community-Based Organizations (CBOs) as service providers. If a CBO provides services, then risk is transferred away from Government, as with a private firm. CBOs should also be highly motivated to deliver results, as they are voluntary organizations, although they do not have a profit motive. The projects with CBOs are: Honduras: Extension of Water and Sanitation (GPOBA), Indonesia: PAMSIMAS (not shown in Table 11.1), and Kenya: Microfinance for Community Water Projects (GPOBA). If CBOs are put in the public sector, the findings are still the same—private providers (excluding CBOs) work well.

Interviewees supported the proposition that RBF works well with private providers. A former Task Team Leader for Kenya: Microfinance for Community Water Projects (GPOBA) thought that OBA generally works better with private providers, arguing that private providers respond better to well-designed incentives, and have greater potential for operating at scale. A Board member of the public water authority in Manila noted that Manila Water’s profit incentive was the main reason why the company was keen to implement the OBA program. This incentive pushed Manila Water to connect new low income consumers quickly to get the OBA payments.

The general rule that RBF projects that use private firms and organization to provide goods and services people want holds true for low income countries with poor governance, and for emergency situations. Both OBA and voucher mechanisms seem to work.

11.1.1 RBF with private providers works well in low income and low governance countries

RBF projects have been highly effective (Section 6.2) in very poor countries, and countries with low government effectiveness. These projects generally involved private providers. The Guinea: Water Supply (02) (World Bank) project achieved 100 percent effectiveness in a country with GDP per capita of \$528, and a World Bank Government Effectiveness score of -1.27. The service provider was a large multinational firm, which was motivated, had access to capital, and was capable.

In Uganda the successful Small Town and Rural Water (GPOBA) engaged local firms and entrepreneurs in service provision. The providers all found capital without any help from the project, by means of bank loans, or credit from suppliers (World Bank, 2013).

11.1.2 Voucher projects with private firms work to provide essentials in humanitarian emergencies

RBF projects have used vouchers to engage private providers to supply people with water and hygiene consumables during humanitarian emergencies. In Somalia, the WASH Cluster project provides vouchers for containers of water (United Nations Children's Fund, 2014). In 2014 the project provided water for 205,704 people, exceeding its target for that year by eight percent.

After the 2010 earthquake in Haiti, the Oxfam Hygiene Vouchers project provided vouchers for hygiene goods (Brady & Creti, 2010). The project used small private shops to provide hygiene goods, such as soap, to 440 needy families. All the beneficiaries surveyed thought the hygiene goods were of acceptable quality and helped improve sanitary conditions.

Box 11.1: Voucher Administration Could Be More Efficient

Paper vouchers require significant administrative work in distributing them, and then processing them after redemption. Even the utility staff managing the Water Payment Assistance project in Australia thought that handling paper vouchers was a costly and inefficient process with governance problems (Sullivan & Panuccio, 2014). The project switched from paper vouchers to an electronic system in 2011.

A case study on Haiti: Oxfam Hygiene Vouchers found that vouchers are an administrative burden, especially when staff are not familiar with them, and accustomed to in-kind aid (Brady & Creti, 2010). However, projects with paper vouchers can operate on a large scale. Bangladesh: BRAC WASH Vouchers provided over 6,600,000 latrines with paper vouchers.

Electronic systems could be a good alternative to paper vouchers. The GPOBA's Uganda Reproductive Health Voucher Scheme found improvements in efficiency by using text messaging to manage claims from service providers (Global Partnership on Output-Based Aid, 2012). This included saving some providers up to 3.5 hours in travel to submit paper claims.

The BRAC Innovation Program is exploring “virtual vouchers”—code numbers transmitted by cellular phone to beneficiaries (May, 2014). This could be cheaper, faster, and more transparent than paper vouchers. However, people in poor communities may lack phones. Only 67 mobile phone subscriptions exist per 100 people in Bangladesh⁴³. Virtual vouchers are being explored for providing assistance in areas hit by natural disasters. However, phones may not work after disasters—people may not be able to charge their phones, although cellular networks tend to continue working.

11.1.3 RBF projects in WASH need to increase their scale

RBF projects, with private providers, supplying goods people want and need, have proven to be effective in a wide range of conditions. If they are to be truly useful, they need to scale up. Over two billion people lack access to safe water or sanitation (United Nations Children's Fund). The median number of people served by projects in the sample was 142,810 people. If the access gap were to be solved by RBF projects alone, something like 22,900 projects would be needed. This seems like an impossibly large number.

RBF needs to move out the realm of ‘experiment’ and ‘demonstration project,’ and find designs which routinely serve millions of people. Out of the thirty projects in the sample, only three are known to have served more than one million people: Brazil: Prodes served 6,800,000 people, Bangladesh: BRAC WASH Vouchers served 6,600,000 people, and Mozambique: PLM served 1,900,000 people. All of these projects have become mainstream delivery mechanisms in the country in which they operate. They also all happen to be in sanitation.

In water, the two largest projects are Mozambique: Water Private Sector Contracts (GPOBA) and Indonesia: Hibah. The Hibah in Indonesia used pre-existing local mechanisms, and was developed with significant local input.

⁴³ From the World Bank Databank. This does not reflect access to cellular phones, but rather only the number of subscriptions. One wealthy person could have multiple phones, and poor people could pay to use someone else's phone.

In contrast, many RBF projects are still intended to demonstrate the concept, and are designed by international specialists based on what they think is best, rather than being developed with locals and harmonized with local systems. There is a place for such projects, of course, but if RBF is to move the needle on global access to WASH services, they need to be mainstreamed with local systems and aim to serve millions of people.

11.2 The Case for RBF with Public Providers is Weaker

There is some evidence that publicly-owned providers are less likely to be effective than private providers. In Table 11.1 there are four projects with public providers in the sample. Of these, two were highly effective—50 percent of the total. In contrast, 73 percent of the private providers were highly effective.⁴⁴ Of the projects with public providers, one was poor on effectiveness. None of the private providers were rated poor on this measure.

This is not to say that RBF schemes cannot work with public providers. They clearly can, especially if the providers are motivated to deliver results and financially sound. The Water Hibah in Indonesia is a highly effective scheme that uses municipally owned water providers. The scheme selects for providers that are inherently incentivized to deliver results by requiring them to apply for Hibah grants, and requiring that local governments provide additional budgetary support for providers over several years (Indonesia Infrastructure Initiative, 2012). The Hibah uses results-based payments as intergovernmental transfers from the national government to municipal ones—the national government uses to influence other public entities that are not under its direct control.

In interviews, a former Task Team Leader for Honduras: Extension of Water and Sanitation (GPOBA) thought that public providers could be incentivized to hold down costs in an OBA scheme. Even though public providers do not seek profit, politicians would be motivated to ensure funds were well spent so that money could be saved for other public initiatives, increasing the politician's popularity.

Nevertheless, the case for RBF with public providers is weaker than with private providers. Many public providers in developing countries lack the financial flexibility to be able to fund capital expenditures ahead of receiving RBF payments (G20, 2011).⁴⁵ Many fail to maintain systems once built (G20, 2011; Kingdom, et al., 2006). Public providers—by design—lack the profit motive. Public providers typically have less freedom to innovate, and often lack the technical competencies that private firms can bring to bear. However, they can be motivated by policy mandates, the need to keep expenditure within budget ceilings, or other factors.

Governments also have a wider array of tools to get entities they own to provide needed services. Frequently they can simply provide the funds, and direct that the service be provided. If the provider is capable, this direct approach should give good results without the complexity of an RBF scheme. On the other hand, if the public provider is not capable and accountable, RBF may not help much.

⁴⁴ The sample of projects is admittedly small, and the data presented in this paragraph by no means show that public providers cannot work well. In fact, this section provides examples of projects with public providers that do work well. However, this section presents reasons to assume that public providers may not on average be as effective as private ones.

⁴⁵ However, some public providers may be able to access public funds at low or zero interest, and obtain subsidies.

When OBA was first designed, it was intended to work only with private operators (Brook & Smith, 2001). The reasoning was that private operators' profit motive will make them respond to the financial incentive offered. It was also assumed that private operators would have the financial resources to self-provide the 'bridge-financing' needed—that is, to pay for the construction of the infrastructure in advance of receiving the OBA payment.

RBF with public providers has a place as an inter-governmental transfer scheme (as in with the Indonesia: Hibah project), or when public providers have been corporatized and told to act as if they were private. There may also be times when RBF mechanisms can improve monitoring and accountability for a public sector entity. However, the value of RBF with public entities should be considered case by case.

11.3 The Case for RBF is Weaker when Help with Bridge Finance Is Needed

Bridge-finance mechanisms aim to make RBF work even when service providers lack capital. Generally, bridge-financing is a loan intended to support a borrower until the borrower receives more funding. In the case of RBF, bridge-financing provides money that enables the borrower to make necessary investments to deliver the outputs that trigger RBF payments. The RBF payments can then help repay the loan.

When OBA was first designed it was intended to work with private companies with sound finances (Brook & Smith, 2001). These companies would be able to access capital to provide outputs without any additional aid, particularly when the time between the outlay of the capital and its reimbursement was measured in months. When service providers rely on private capital, risk is transferred away from the public sector and donors, as they do not pay for outputs until outputs are delivered. Service providers and their financiers bear the risks of non-delivery of outputs, as providers may not recover their costs, and may lack funds to repay lenders.

This contrasts with conventional, input-based aid, where donors or government lend at the start, with the expectation that the loaned money will be converted into desired outputs. In the conventional case, donors or government run the risk of lending money which does not go towards the desired use, and may not be repaid.

Over time, some practitioners became so convinced of the merits of RBF that they wanted to apply it in situations in which the providers did not have significant capital of their own, and also could not easily raise outside capital. To make OBA work in these circumstances, special mechanisms were needed to supply the providers with bridge-finance. For example, the Indonesia: Second Generation Project provided technical assistance to help service providers apply for financing and improve their financial management. When a provider receives bridge finance, the financier takes the risk on provider performance. If the provider cannot deliver the output, the financier will not get back the funds it provided for construction. As a result, the providers are careful to only back providers they are convinced can deliver. In this way, the risk transfer, incentive, and accountability benefits of RBF continue to work when private financiers offer bridge financing.

One interviewee said that increased bridge financing eventually offered under the Honduras: Extension of Water and Sanitation (GPOBA) project was a key factor in allowing more service providers to participate. This project initially provided some bridge-financing, but

only to public service providers. Later, local NGOs agreed to provide additional bridge financing, including for private providers.

The Kenya: Microfinance for Community Water Projects project used bridge financing to enable community-based water providers to install water connections. This project worked well, and has received additional funding for scale up—its budget is now 2.2 times the initial amount. However, interviewees warned that the success in Kenya could probably not be replicated in other countries with less well-developed capital markets.

An evaluation of the Indonesia: Second Generation project found that the bridge-financing scheme detracted from the success of the project in some ways. Technical assistance was provided to help community water providers pursue bridge financing. The cost of this assistance limited the project's potential to operate on a large scale (Robinson, *Institutional Models for Management of Piped Community Water Supply in Indonesia*, 2013). The project aimed to have both private and public banks lend to community water providers. However, only public banks were interested. As a result, the public sector bore credit risk. It may be that private banks did not see the community water providers as a good credit risk or profitable borrowers.

An evaluation of the Indonesia-Second Generation project found that the bridge-financing scheme detracted from the success of the project in some ways. Technical assistance was provided to help community water providers pursue bridge financing. The cost of this assistance limited the project's potential to operate on a large scale (Robinson, *Institutional Models for Management of Piped Community Water Supply in Indonesia*, 2013). The project aimed to have both private and public banks lend to community water providers. However, only public banks were interested. It may be that private banks did not see the community water providers as a good credit risk or profitable borrowers.

While bridge-financing mechanisms have their place, they add complexity, and can reduce the risk-transfer benefits from RBF. The need for bridge-financing may be a signal that RBF is not the most appropriate tool in the circumstances. It should not be assumed the benefits of RBF will outweigh the costs and complexities of having to create a bridge-financing scheme.

If service providers do require help with bridge financing, a sector-wide approach to WASH finance may be useful. This could include measures to increase access to capital. Such measures would typically benefit both RBF and other initiatives to expand WASH services. No sector-wide approaches to financing were found in the research sample, although they have been recommended in the Philippines (World Bank and Castalia, publication pending).

11.4 It Is Not Yet Clear if RBF Can Drive Behavior Change in Community Sanitation Projects

It is often not enough to simply provide hygienic sanitation facilities, such as latrines. Communities need to be encouraged to actually use the latrines. Other behaviors, such as hand-washing, may also need to be inculcated. Widespread adoption is necessary if the full health benefits of improved sanitation are to be realized (Spears, 2013). One study estimates that at least 75 percent of a community has to use improved sanitation before significant health benefits are achieved (Bateman & Smith, 1991). These behavioral changes are therefore a public good—by changing behavior, people benefit everyone in the community.

Changing other people’s behavior, in matters that are highly personal, is difficult. A number of sanitation projects have used RBF to incentivize behavior change. Typically these projects assist families to get better sanitation facilities, such as improved pit latrines. The RBF component comes in the form of a cash reward for changed behavior. This type of RBF is known as a Conditional Cash Transfer (CCT)⁴⁶. Verifying sanitation behavior is difficult—it is hard to observe how people defecate. However, proponents of changing sanitation behavior are working on ways to improve verification. For example, the East Meets West projects in Vietnam and Cambodia are trying to use digital systems to enable rigorous verification and share data.

Four projects in the sample fell into this category—they are listed Table 11.2:

Table 11.2: Behavior Change Projects in WASH

Project Name	RBF Type	CCT Payment	Effectiveness	Comments
Bangladesh: DISHARI	CCT	Villages received payments if the community was free of open defecation	Poor	Villages self-reported behavioral outcomes, which allowed cheating.
Cambodia: East Meets West Toilet Rebate	CCT - rebate	Villages received payment if sanitation coverage increased by 30 percentage points, and toilets were used by all. A second payment was made when villages reached 90% coverage (presumed to be almost equivalent to ODF).	Unclear	No information was available.

⁴⁶ See definition of CCT in Section 4.2.

India: Nirmal Gram Puraskar	CCT	Villages received payments if the community was open defecation free (ODF), and latrines were constructed in homes and some public buildings.	Poor	A case study showed that CCT payments were given to towns that did not achieve ODF status (Trémolet, Kolsky, & Perez, 2010). Also, ODF status was often not sustained after the payments were made—an evaluation by the Department of Water Supply and Sanitation found that only 67% of households in towns that received the payment maintained ODF status.
Vietnam: East Meets West Toilet Rebate	CCT - rebate	Villages received payment if sanitation coverage increased by 30 percentage points, and toilets were used by all. A second payment was made when villages reached 90% coverage (presumed to be almost equivalent to ODF).	Unclear (ongoing)	Interviewees thought the project worked well, because it had thorough monitoring. However, an evaluation has not been conducted, as the monitoring regime was created only in 2014.

The idea of giving prizes to Open Defecation Free (ODF) villages in India was created by donors to incentivize people in rural areas to actually use latrines (Gonzalez-Aleman, 2014). The United Nations Joint Monitoring Program showed that latrines provided by the Total Sanitation Campaign were not being used. People who received latrines through input-based subsidies continued to defecate in the open.

Evaluations of India: Nirmal Gram Puraskar showed many instances of villages receiving the prize for ODF status even though the village did not actually meet all the criteria (Gonzalez-Aleman, 2014; Mathew, 2014). Behavior change cannot be sustained if it never occurred in the first place. A government evaluation found that 33 percent of households in villages that received the ODF prize had at least one member that still defecated in the open (Department of Drinking Water and Sanitation, 2011).

The Bangladesh: DISHARI project did not verify results, and thus relied only on self-reporting. The monitoring regime is weak as it is not independent. Payments were delivered to villages that did not achieve ODF status. Village Governments (unions) have a clear incentive to falsely report ODF status in order to receive prizes (Trémolet, Kolsky, & Perez, 2010).

In contrast, the Vietnam: East Meets West Toilet Rebate project is trying to verify behavior more vigorously (Hien, Interview with Vo Thi Hien, 2014). Precise details on what evidence was used to determine usage practices were not provided by interviewees—however, one interviewee feels that the monitoring works well. The project began using an electronic system for collecting monitoring data in the field in August 2014. It uses software accessible through an Android mobile phone app and the internet (Nguyen & Davis, 2014). The electronic system includes detailed checklists for collecting information, and holds photos. Information will be stored in a central database, and released publicly. This project's verification system could be effective, but has not yet been proven.

Even if the East Meets West model performs well, it does not realize economies of scale. That is to say, serving 1,000 people costs 10 times as much as serving 100 people.

Some non-WASH projects that incentivize behavior change have worked well. For example, Bolsa Familia in Brazil paid families to enroll children in school, among other conditions (Lindert, Linder, Hobbs, & de la Brière, 2007). This aligns with the insight that CCT works well when behaviors are easy to verify, such as whether a child attends school.

The evidence shows that RBF to effect change in sanitation behavior *cannot* work unless mechanisms to monitor behavior are in place and effective. What is not clear is whether it is possible to design such mechanisms. The East Meets West Foundation is trying hard to do so. Success in this area should be demonstrated before large amount of funding are committed to this kind of RBF project. Complementary measures, such as Communication for Development (C4D)⁴⁷, could potentially improve the effectiveness of CCT.

⁴⁷ http://www.unicef.org/cbsc/index_42148.html

12 Transparency of RBF Projects Should be Improved

Knowledge of what works well in RBF in WASH is limited by poor transparency of RBF projects. Basic information on how projects are designed, and how well they perform, is often not available in public documents. GPOBA is generally far more transparent than most other players in RBF, but the consistency of GPOBA data across sources could be improved. More transparent and higher quality information collection and disclosure could enable new research initiatives as discussed in Section 14.

From the research, we were able to define fifteen key indicators that should be published for all RBF projects in WASH to provide basic accountability and transparency. These indicators are listed in Table 12.1. The percentage of projects in the sample that published information on each indicator is also shown. On average, across all projects, only 62 percent of the indicators were published.

The percentage of projects with publicly available information is shown in Table 12.1.

Table 12.1: Key Indicators and Their Availability

Key Indicators	Percentage of Sample Projects Reporting the Indicator in Public Sources
Effectiveness	
Target number of outputs (units of output, households served, or people served)	59%
Actual number of outputs (units of output, households served, or people served)	80%
Efficiency	-
Total project cost (including household contributions)	33%
Amount of grant or loan money disbursed	48%
Amount of grant or loan money scheduled	57%
Cost per unit of output	62%
RBF mechanism	-
Amount of each payment	70%
What triggers the payment(s)	70%
What service is provided	90%
Recipient of payments	83%
Is verification independent	63%
Method of verification	70%
Sustainability and impact	-
Does revenue cover recurrent costs	50%
Intended Impact	63%
Actual Impact	27%
Overall Average	62%

Some key indicators are meaningful when combined with others into simple ratios. These combinations are shown in Table 12.2.

Table 12.2: Ratios of Key Indicators

Ratio	Definition
Output ratio	(actual outputs)/(target outputs)
Average cost	(total project cost)/(actual number of outputs)
Average grant or loan per output	(amount of grant or money disbursed)/(actual number of outputs)
Disbursement ratio	(amount of grant or loan money disbursed)/(amount of grant or loan money scheduled)
RBF payment ratio	(total of RBF payments)/(cost per unit of output)

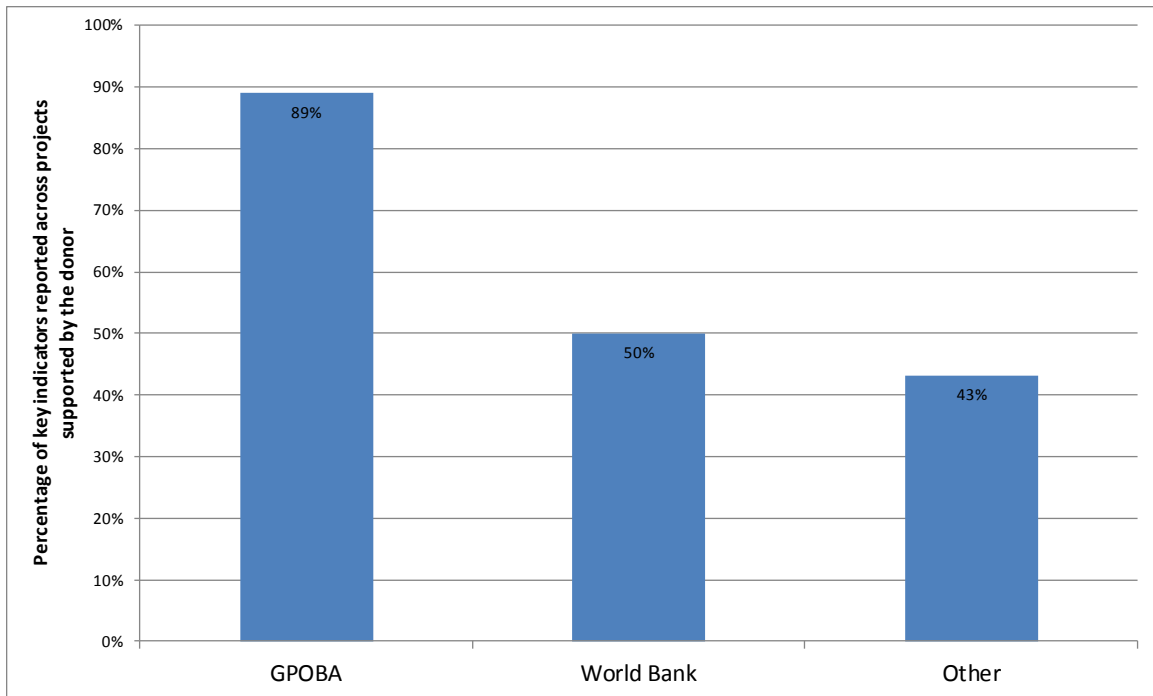
These indicators show how RBF projects are constructed, and their effectiveness, efficiency, sustainability, and impact. The indicators should help technical experts, donors, Governments, and citizens understand how well RBF works in terms of effectiveness, efficiency, sustainability, and impact, as well as showing how RBF projects are designed.⁴⁸

Transparency of key indicators in RBF projects was generally poor, and varied significantly by type of donor. Transparency is defined in this assignment as the percentage of the 15 key indicators that were publicly available—that is to say, how many indicators were published in reports available online.

Figure 12.1 reports transparency levels for various funders. GPOBA projects were far more transparent than those affiliated with other organizations. For GPOBA projects, nearly 90 percent of key indicators were publicly available. World Bank projects (which did not involve GPOBA) had 50 percent of key indicators publicly available. Projects from other donors had around 45 percent of indicators publicly available.

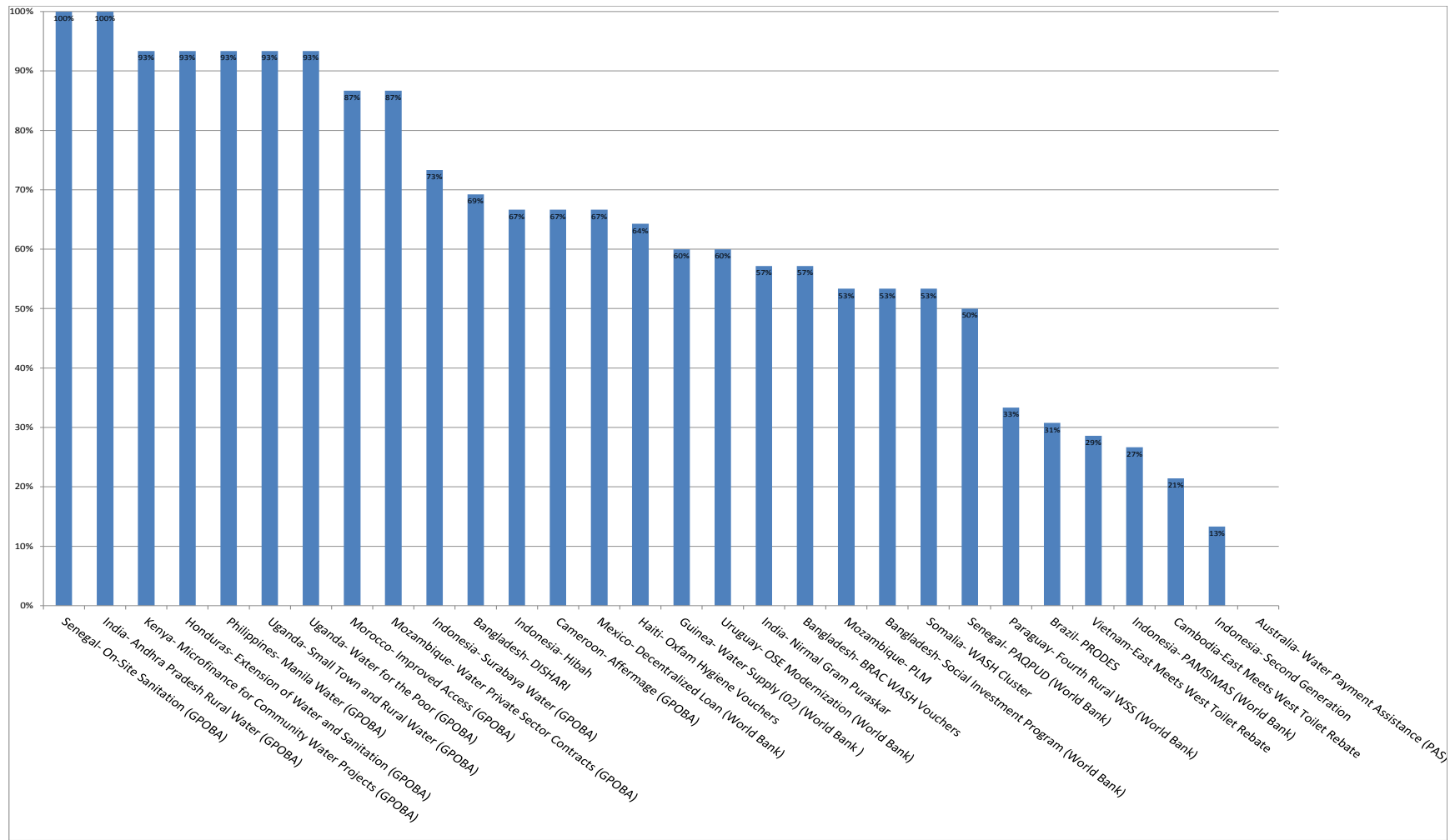
⁴⁸ The International Aid Transparency Initiative (IATI) presents a useful standard for presenting information common to all aid projects, not just RBF: <http://iatistandard.org/201/introduction/standards/>.

Figure 12.1: Transparency, by Donor



Transparency varied greatly by individual projects. GPOBA’s projects were uniformly transparent—most of them had 80 percent or more key indicators publicly available. The transparency of individual projects is shown in Figure 12.2.

Figure 12.2: Transparency by Project



Note: The vertical axis shows the percentage of the 15 indicators reported by each project.

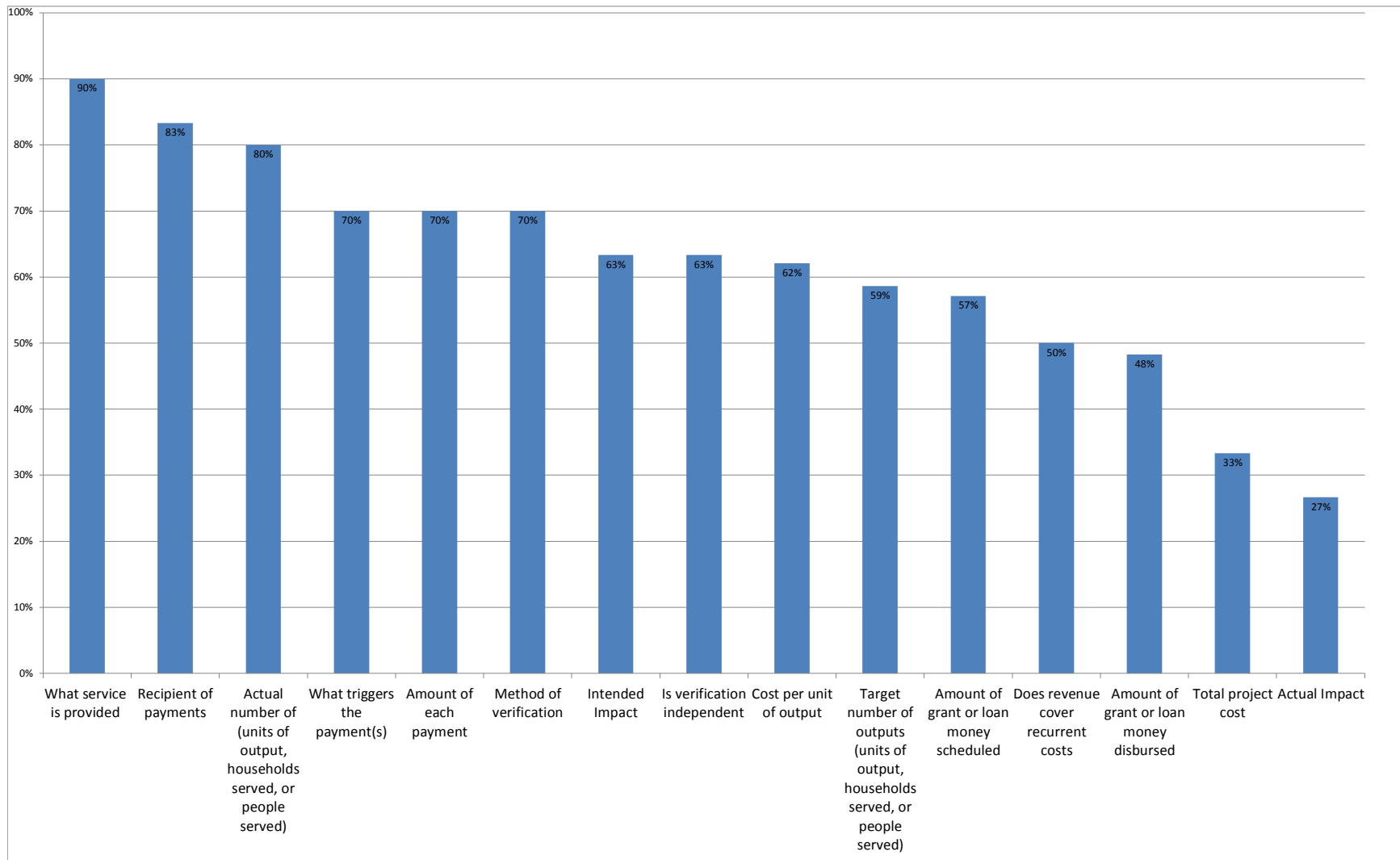
RBF projects which were sub-components of larger aid projects had poor transparency. Evaluation and planning documents for such projects did not generally separate details of the RBF component from the rest of the project. Such projects include Mexico: Decentralized Loan (World Bank) (67 percent transparency), Guinea: Water Supply (02) (World Bank)(60 percent transparency), and Bangladesh: Social Investment Project (World Bank)(53 percent transparency). The RBF component of Indonesia: PAMSIMAS only reported 27 percent of key indicators.

The two projects supported by the East Meets West Foundation reported 29 percent (Vietnam) and 21 percent (Cambodia) of key indicators. The Vietnam project is planning to improve its data collection and publication.

Projects with little or no donor involvement had lower transparency. Brazil: PRODES published 31 percent of key indicators. Australia: Water Payment Assistance (a domestic project) did not publish any indicators.

There was also great variation in transparency across key indicators. In general, indicators related to project design—such as the service being provided—were more transparent. This is shown in Figure 12.3.

Figure 12.3: Transparency by Indicator



The indicator that was most often available was the service being provided. On the other hand, actual impacts were only reported for 30 percent of projects.

Certain shortfalls in transparency are particularly concerning. Only 59 percent of projects in the sample publicly reported their target number of outputs, a fundamental data point needed to understand a project's effectiveness. Only 63 percent reported intended impacts, and only 33 percent of projects reported the total project cost.

GPOBA data sources

GPOBA was far more transparent than other donors, although data on GPOBA projects was sometimes inconsistently reported. Data found on GPOBA projects from GPOBA or World Bank sources sometimes contradict each other. Some data on GPOBA projects are found in documents from the World Bank, as GPOBA is a trust fund administered by the World Bank. Improvements in GPOBA reporting could yield large amounts of useful data for research, as GPOBA is a major player in RBF, and GPOBA websites⁴⁹ are the best public repositories of RBF information.

GPOBA was very helpful in providing additional data and clarifications upon request from Castalia.

How transparency affected the analysis

Castalia sometimes obtained extra data by reaching out to donors or other stakeholders in RBF projects. Often, little extra data were available. This shows that in many cases data not only is not published, but is not being collected.

Some things that we expected to be able to obtain were much less available than we had thought they would be, such as total project cost, actual impacts, whether providers' revenue covers recurrent costs, and the target number of outputs. This meant analysis in areas such as efficiency of RBF, impact, sustainability, and effectiveness was less detailed, and conclusions were less robust, than we had hoped.

In some cases, RBF projects were part of larger aid projects, but costs for the RBF activities were not separated from the total cost of the larger project (for example, the Second Generation project in Indonesia). In those cases, the analysis considered total cost information to be unavailable, since the cost of the OBA component need to be separated if the efficiency and value for money of OBA is to be assessed. The underlying reasons why data went unreported are not known.

⁴⁹ <http://www.gpoba.org>, and <http://www.oba-data.org>

13 What We Do Not Know

The three most important questions we have not been able to answer in the current study are the following.

1. Is RBF more effective, efficient, and sustainable than conventional public sector and donor projects?

Most WASH projects in the world are done in the conventional way—governments and donors spend funds on inputs to improve facilities, and rely on public entities to operate and maintain them. Problems with the conventional approach have been well-documented. Sometimes money is spent but the facilities are not built. More often facilities are provided but soon stop delivering service (G20, 2011 (A)). The total costs of the service provided are often opaque, and there is evidence that inefficiency, waste, patronage and corruption reduce value for money (Kenny, 2007, p. 34) (Halpern, Kenny, Dickson, Ehrhardt, & Oliver, 2008, p. 14).

The analysis in this report has shown that RBF schemes are generally effective *on their own terms*. That is, they provide the outputs they set out to provide. A more important question is whether RBF schemes are more effective than conventional projects. Also, it is not clear how RBF projects' targets are chosen, and whether the targets are chosen well—they may not be very ambitious, and thus could be easy to reach.

Similarly, RBF projects have been shown to come in on budget—in the sense that the amount paid for the output is the amount that was agreed. But do RBF schemes actually reduce costs compared to conventional delivery methods? The theory is that they do. However, our attempts to benchmark the costs of outputs from RBF projects against the costs of conventionally provided outputs did not give a clear answer. There are too many differences in operating environments, and in the outputs being provided, for real differences in efficiency to be discerned.

One of the biggest reasons that publicly funded and operated WASH projects fail is that the facilities stop working, usually because they are not maintained. The original theory behind OBA was that private providers would ensure that services were maintained⁵⁰. The private providers' profit motive is meant to ensure this. However, there is almost no systematic reporting of whether service provision from RBF-funded projects actually is sustained once donor-support has ended. Therefore this hoped-for advantage of RBF cannot be validated.

In summary, conventional WASH schemes are much less effective, efficient, and sustainable than they should be. Theory suggests RBF schemes should be able to do better on all three counts, in cases where outputs can be monitored, and capable, well-financed providers are available. If this is true, then there would be strong grounds to massively expand the use of RBF in many areas of WASH. However, while we know that RBF is effective and efficient on its own terms, the evidence is not yet available to know whether or not RBF is significantly *more* effective, efficient and sustainable than conventionally funded projects.⁵¹

⁵⁰ In practice, some OBA schemes may only include construction incentives, and not focus on service.

⁵¹ It seems reasonable that RBF projects could have higher transaction costs (design, negotiation) or monitoring costs, than conventional projects. However, the specific data on these costs were not available. The test of efficiency should obviously cover all costs of both RBF and conventional schemes, including design, administration, and monitoring.

2. What factors allow RBF to operate on a large scale?

We know that RBF projects—at least those in which private providers supply goods and services that households want—can effectively deliver a wide range of goods and services in a wide range of situations. Given the scale of access gaps in WASH, there must be a strong interest in finding delivery modalities that are not only effective but can operate at scale.

There is some evidence that RBF projects can operate at scale, especially when they are embedded in mainstream frameworks and institutions. Yet most RBF schemes are small—only three in a sample of 30 served more than a million people. Perhaps it is because RBF is still seen as new, and thus in need of piloting and demonstration. Still we do not really know why RBF schemes have such a modest scale. Nor is there evidence yet to provide reliable guidance on how, and in what conditions, RBF could be used to provide WASH services on a massive scale.

3. Is RBF a useful tool to promote behavior change in sanitation and hygiene?

Getting whole communities to follow good sanitation practices is the holy grail of WASH—very valuable, but very difficult to achieve. Given that people respond to incentives, and that RBF is designed to provide incentives, it is well worth trying to develop RBF schemes that promote good sanitation practices. Attempts so far have been largely unsuccessful, however.

East Meets West are working on a detailed and sustained monitoring program using digital photographs and mobile communications to rapidly upload a carefully specified and extensive set of monitoring information. Since success in this area would be valuable, supporting these efforts to see if they will work is worthwhile. However, success is not yet assured. The Akvo FLOW digital information tool has been used successfully in non-RBF projects in WASH, and may also help with monitoring for RBF.⁵²

A monitoring system that can verify that everyone is using the toilet properly, and no one is going outside at night to defecate in the fields, could be created. However, such a system is unlikely to be acceptable on privacy grounds. Can monitoring be effective in ensuring that sanitation behavior is changed without intruding on privacy? If not, does RBF have a place in promoting behavior change, given that financial incentives risk promoting cheating, not behavior change, if monitoring is flawed? On evidence available at the moment, the answers to these questions are far from clear.

⁵² www.akvo.org/products/akvo

14 Recommendations for Future Research

Further research would be worthwhile to answer the three questions in Section 13. The challenge is how to conduct that research, given:

- The lack of data available on many RBF projects (as spelled out in Section 12)
- The difficulty in making valid comparisons between conventional and RBF projects
- Difficulties in effectively monitoring behavior change in sanitation
- The very limited information set on making RBF scale.

While it is possible that more insights could be wrung out from currently available information if more time was spent on creation of datasets and in-depth interviews, this is not the approach we recommend. Rather, we recommend research through developing projects that are intended to provide information to answer these questions, as well as providing services. These projects can be thought of as clinical trials for RBF in WASH—social experiments of the sort advocated by Esther Duflo (Banerjee & Duflo, 2011). Three types of research are recommended.

Social experiments to test if RBF is more effective, efficient, and sustainable than conventional approaches

We recommend that the Gates Foundation (or another donor) engage with the governments of several large countries with which it already has good relationships to agree on, and implement, the following approach to learn if, or when, RBF is more effective, efficient, or sustainable than conventional approaches.

This approach should be incorporated into future projects, in cases where RBF could work well—where outputs are measurable and linked to intended impacts, and providers are capable, motivated, and financially sound. This approach should not be used in cases where RBF is unlikely to succeed, such as when there are no capable providers. If RBF works well in cases where it is expected to, it RBF could then be tried in other, more difficult settings. Those settings where RBF is impossible, such as when outputs cannot be monitored, should still be avoided. The steps of the approach follow:

1. Identify two or three urgent needs for improvements in WASH in each country.
2. Identify the technologies that could meet the need.
3. Identify a large number of locations in which the improvement is needed.
4. Identify the conventional approach to providing the outputs.
5. Design an RBF approach to providing the outputs, working closely with people in the national government and the communities to come up with a design they think will work.
6. Get the agreement of the communities concerned to be involved with the improvements projects.
7. Use a randomized trial to assign some communities to conventional interventions, and some to RBF. The assignments should ensure that the effects of

interventions can be separated from other factors, such as wealth and religious traditions regarding sanitation practices.⁵³

8. Create a full Theory of Change and Logframe for each modality, following the DFID model. Make sure that the input, output, outcome and impact measures and indicators are comparable between the two projects.
9. Create a robust monitoring system that will be in place from the start of the project to at least the 'mean time to failure' for projects of this sort when implemented conventionally (this is needed to get results on sustainability). Ensure that the monitoring system collects at a minimum the essential indicators identified in Section 12. The potential for digital tools to aid in reporting RBF data, such as Akvo FLOW, should be explored.⁵⁴
10. Implement the projects.
11. Publish the monitoring results.

If this can be done in several countries, for several types of output, it will produce robust data on comparative effectiveness, efficiency and sustainability of RBF projects compared to conventional projects.

The approach should be acceptable to countries. They will get help in implementing projects in their traditional way, and also get help in implementing projects in way which they agree may work better. They will then get information on which approach works better.

The benefit to the world from this approach could potentially be huge. It is estimated that meeting the infrastructure needs for water and sanitation in Sub-Saharan Africa alone would require \$15 billion in capital invested (Briceño-Garmendia & Foster, 2010 (A), p. 8). If it could be shown that RBF can deliver services just 10 percent more efficiently, the savings would be worth \$1.5 billion if that knowledge was acted on. Equally, if it was shown that RBF is not more effective, efficient or sustainable, then the complexity and cost of creating RBF schemes could be avoided in future.

Social experiments focused on testing the effectiveness of monitoring mechanisms and incentives in behavior change in sanitation

Changing sanitation behavior is difficult, hence the interest in incentive-based approaches. However, the inherent difficulties in monitoring sanitation behavior raises questions about whether the approach can be effective. Programs aimed at creating behavior change in sanitation are often implemented simultaneously in numerous villages. This creates a natural environment for social experiments.

We recommend that the Gates Foundation (or another donor) ask East Meets West and other entities involved in designing and implementing community sanitation projects to develop designs with a number of variants around a basic core. The basic core could include community mobilization and whatever kind of encouragement or assistance in provision of sanitation facilities seems appropriate. The first variant could have this core, together with

⁵³Resources for conducting randomized trials to evaluate development projects are available at <http://www.povertyactionlab.org/methodology>.

⁵⁴ www.akvo.org/products/akvo

incentives for behavior change, and the best monitoring system to trigger payment that they can design—the full RBF approach. The second variant could have the monitoring, but without the incentive payment. The third variant could have just the core, without monitoring or incentive. In all cases in addition to the type of monitoring approach that can trigger payment, other non-intrusive monitoring such as annual surveys or inspection of the village environs for feces would be used to provide a comparable measure of effectiveness for all variants.

Participant observation and narrative research on getting RBF to work at scale

If it is true that RBF is an efficient and effective tool, then it would be desirable to make it scale up. There are so many variables involved in getting a program to operate at scale that we do not think either deeper analysis of data that is now available, or social experiments, will shed light on the matter.

Rather we recommend taking a structured approach to trying to make RBF programs work at scale, and then recording what works, across a number of cases—a kind of sociological approach to research⁵⁵. The particular steps could be as follows:

1. A group of practitioners with experience in getting RBF projects to work at scale works together to develop guidance based on hypotheses drawn from this report and their experience. (Someone in this group should have deep knowledge of the BRAC voucher program in Bangladesh, which has operated at scale in a poor country with low government capacity. Knowledge of the Hibah in Indonesia, which has scaled up as a national program, would also be desirable.) The hypotheses and guidance are documented.
2. Gates Foundation (or another donor) talks to several large countries, or to groups of smaller countries, to let them know that it is willing to support attempts to make RBF work at scale in solving WASH problems that are priorities for the countries involved.
3. After a small group of countries ask for help (perhaps between three and five), practitioners assist governments in developing RBF programs that will work at scale. As they do so, they keep a field diary. The information to be recorded in the field diaries will include standard elements that should be recorded in each case, to allow for comparability. The practitioners should attempt to follow the guidance documented at the start, and record whether or not it seems to work, as well as any modifications they needed to make, why they needed to make them, and whether or not the modifications worked. (At this point ‘works’ refers to making progress in getting the government and other stakeholders to agree to an RBF program that the practitioner thinks is sound and will operate at scale.)
4. The practitioner prepares a theory of change and, logframe in accordance with the DFID standard, and designs a monitoring system.
5. Where the government agrees, the RBF program is implemented.

⁵⁵ This type of approach is explained in section 2.1.3 of King, et al., 1994.

6. The donor ensures that the monitoring framework is implemented for a number of years—again, at least as long as the ‘mean time to failure’ for conventional systems of the sort being supported.
7. After the small group of countries have started their programs, a researcher works with the practitioners and their field diaries to distill lessons learned. In this way it should be possible to test whether ideas that it was thought would allow large scale RBF programs to be designed and implemented do in fact work, and to identify factors that stop progress. This initial research report should also make predictions about which programs will work best, based on judgments about level of stakeholder ownership, quality of the design, and so on.
8. Monitoring of programs should continue, with reports being produced at least annually.
9. Periodically, perhaps every three years, an evaluation should be done to see how the RBF programs are performing, and whether differences in performance can be attributed to differences in the design process, or the design itself, or the context. Following these evaluations, the guidance material on how to develop WASH RBF projects that will operate at scale should be updated and disseminated.

Stories of the creation of projects, and engagement with Governments and other stakeholders, could yield insight in to good practices for planning. Stories of confronting and overcoming barriers to implementation would also be very useful. These should be both large barriers, such as government resistance, or small ones, such as challenges faced in individual communities. These stories should collect evidence on how potential risks are addressed during planning, and how projects respond to risks when they occur.

Studying projects that do not move from planning to implementation could yield insights on important challenges for RBF. Future research projects could interview stakeholders to learn what barriers hold back projects, and seek solutions to those barriers.

15 Conclusions and Guidance for RBF Interventions

Our findings are that RBF in WASH works well when private providers are engaged to provide services that people want but cannot easily afford. Both OBA and voucher programs work well in these settings. Such programs have the potential to serve large numbers of people, and can do so effectively and reasonably efficiently. This is true even in very poor countries, in countries with low government effectiveness, and in emergency situations. So far though, most RBF projects operate at scales which are too small to make a real difference. There is some evidence that projects are more likely to scale if they are harmonized (coordinated with other donors, using simplified procedures, and sharing results), and make use of local systems.

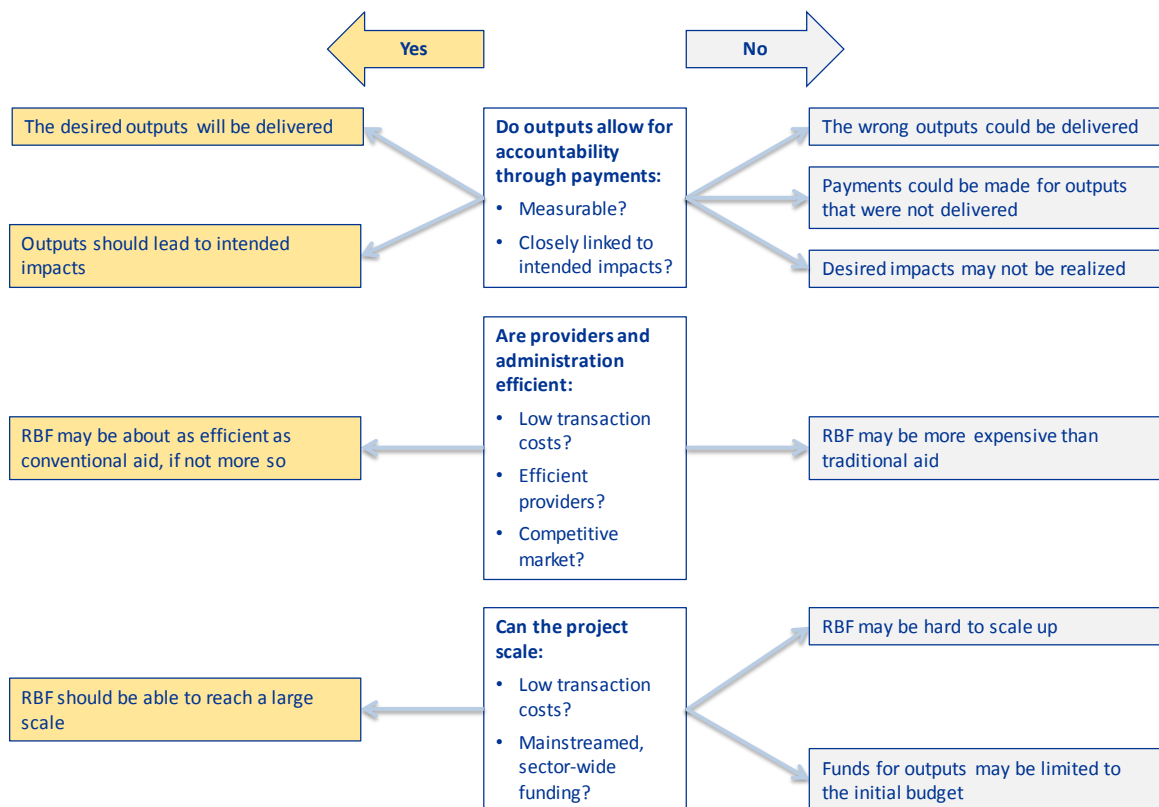
RBF projects with public providers are less common, and less clearly successful. Nonetheless, motivated and capable public providers that have sound finances can be effective under RBF. The rationale for using RBF with public providers is not clear *a priori*, since governments have other tools to direct public providers (such as coverage mandates), and public providers generally do not respond strongly to financial incentives.

One case where RBF with public providers should be strongly considered is fiscal transfers, in which a higher level of government is providing a lower level with resources to achieve particular service objectives. This allows a higher level of government to direct a lower level over which it does not have direct control. As decentralized services are increasingly common (for example, India, Indonesia, and Kenya), RBF for fiscal transfers could help expand WASH services in many places where an incumbent public provider must be used. The Indonesian Water Hibah is a successful example of such a program.

RBF projects that attempt to incentivize behavior change in sanitation have not yet been shown to work. To make them work it appears that accurate and continuing monitoring of private sanitation and hygiene behavior would be needed. Creating such systems is a work in progress. The attempt is worthwhile. However, it remains to be seen if it will succeed.

RBF is more likely to work well and scale if it meets certain basic conditions. These conditions, the benefits of meeting them, and the drawbacks of not meeting them, are shown Figure 15.1.

Figure 15.1: Where RBF Works



RBF works better when outputs are measurable, and clearly linked to the intended impacts. If this is not the case, then the wrong outputs may be delivered, payments may be wrongly issued for outputs that were not delivered, or the intended impacts may not be realized. RBF is more likely to be at least as efficient as conventional aid if there are low transaction costs, efficient service providers, and a competitive market. Lastly, RBF is more likely to scale up if there are low transaction costs, and if RBF is mainstreamed into a sector-wide plan.

Our guidance for RBF interventions is the following:

1. Where government or donors wish to provide people with WASH goods or services that they want, at below cost, and where private providers can supply those good or services, RBF is an excellent option to consider.
2. However, RBF should be weighed against conventional aid options. It will be worth asking the questions: (a) is there a simpler way to get providers to deliver the desired scheme? and (b) if a simple mechanism will not work, what is the reason to think RBF will improve things?
3. There are a number of by now fairly standard designs for OBA and voucher programs that can be drawn on. In designing such schemes, the following things should be born in mind
 - a. Outputs need to be clearly specified

- b. Monitoring should involve independent verification agents, who check that service has been sustained for a period (where relevant)
 - c. Targeting assistance to low income households may be achieved by targeting areas in which most people are poor, or using housing type or electricity bills as proxies for income. Whenever possible, formal demographic databases that identify poor households should be used for precise targeting—for example, Bangladesh, Cambodia, and India have such systems.
4. Success at scale may be most likely where:
 - a. The project meets a need that is a genuinely high priority for relevant government agencies
 - b. Government officials and stakeholders have been closely involved in design of the scheme, and believe that it will be a good way of meeting the need
 - c. Local systems and institutions are used as much as possible
 - d. The project is designed in a way that it can scale across multiple localities, and attract funding from government budgets and multiple donors.
 5. Practitioners should not assume that RBF will work well with government providers. Where the only viable providers are publicly owned, other funding and output verification mechanisms should be considered and compared to RBF. RBF should only be used where there are clear reasons to believe that it will work better than other, simpler mechanisms.
 6. Where providers lack the funds to provide outputs in advance of payment, practitioners should not rush to design bridge-financing mechanisms. Simpler ways of providing funds and encouraging performance—such as upfront grants with close monitoring, and future grants dependent on initial performance—should be considered instead. RBF should only be used when its incentives and risk transfer benefits are enough to outweigh the cost and complexity of any bridge-financing mechanism that is needed.
 7. RBF may well be a good choice for inter-governmental fiscal transfer schemes, in which a higher level of government is trying to provide resources and incentives for lower levels of governments to improve WASH services.⁵⁶
 8. In community sanitation schemes, RBF aimed at achieving behavior change should only be used where the behavior in question can be accurately monitored over a relevant period of time. This may be difficult to achieve.
 9. Donors and governments supporting WASH through RBF should do better monitoring, and should be more transparent about output targets, outputs achieved, costs, and impacts. Monitoring also needs to extend for longer periods of time, so that sustainability can be assessed (data on how well infrastructure functions over the long run would be very useful). Targets and results should be

⁵⁶ See the example of the Hibah project in Indonesia in Section 11.2.

published, for transparency and accountability. It may be useful to integrate RBF reporting in to the International Aid Transparency Initiative (IATI) standard.⁵⁷

The Gates Foundation, along with other donors interested in promoting good design and accountability in RBF schemes in WASH and other sectors, should consider creating a “Code of Practice” for RBF. This Code would mandate (a) participatory design and local ownership (in accordance with the Paris Principles), and (b) collecting and publishing at least the minimum information set specified in Table 12.1 and Table 12.2 of this report.

⁵⁷ <http://iatistandard.org/201/introduction/standards/>

16 Bibliography and Interview Sources

The section begins with bibliography ordered by author, and then presents a bibliography grouped by RBF projects in WASH.

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Appendix A: Definitions of Types of RBF from Various Sources

Table A.1 shows the sources used to create the definitions of types of RBF in Section 2.1.

Table A.1: Definitions of RBF Types from Various Sources

Type of RBF	Source	Definition
Output-Based Aid (OBA)	ToR	“[OBA projects provide] a subsidy payment that covers a funding gap to access basic services by the poor. OBA subsidies can be used to reduce capital investments required to deliver services, or to cover the difference between what users can afford to pay and what is required for complete cost recovery.”
	GPOBA*	“Under an OBA scheme, service delivery is contracted out to a third party—public or private—which receives a subsidy to complement or replace the required user contribution. The service provider is responsible for pre-financing the project, and is reimbursed only after the services or outputs have been delivered and fully verified by an independent verification agent (IVA). The subsidy is explicitly targeted to benefit the poor, which can be achieved through several means, depending on the context of the project and environment” (Global Partnership for Output-Based Aid, 2014).
Voucher Programs	ToR	“... redeemable vouchers [are distributed] to a targeted population, who use them to obtain specific goods or services from pre-selected providers.”
Conditional Cash Transfers (CCTs)	ToR	“[CCTs] provide cash payments to households that meet certain behavioral requirements, such as regarding children’s health care or education.”
	World Bank	“Conditional Cash Transfer programs provide cash payments to poor households that meet certain behavioral requirements, generally related to children’s health care and education” (World Bank, 2011).
Advance Market Commitments (AMCs)	ToR	“[AMCs] are mechanisms that seek to create sustained markets by ensuring future revenues for service providers (for a limited period of time).”
	World Bank	“An Advance Market Commitment (AMC) for vaccines is an innovative way to incentivize companies in creating and manufacturing vaccines primarily needed in low-income countries. ...Donor countries commit money to subsidize the price of vaccines required by developing countries. The approach offers the necessary financial incentives by way of donor commitments for suppliers to develop the vaccines including research and training staffs” (World Bank, 2013).

*Global Partnership on Output-Based Aid

Appendix B: Simple Correlation Tests

Many factors did not strongly correlate with effectiveness or efficiency of RBF projects in simple correlation tests. The fact that a test did not show correlation does not prove that there is no correlation—it only means that the data available for this assignment did not show correlation. The tests with inconclusive results are shown in Table B.1.

Table B.1: Simple Correlation Tests with Inconclusive Results

Independent Variable	Dependent Variable
EFFECTIVENESS	
Presence of help with bridge financing	Proportion of target outputs delivered
Presence of help with bridge financing	Proportion of target households covered
Presence of help with bridge financing	Proportion of target population covered
Presence of advance payment	Proportion of target households served
Presence of advance payment	Proportion of target population covered
Presence of advance payment	Proportion of target outputs covered
Presence of RBF subsidy	Proportion of target outputs covered
Presence of RBF subsidy	Proportion of target household covered
Presence of RBF subsidy	Proportion of target population covered
Use of local systems	Proportion of target outputs delivered
EFFICIENCY	
Ratio of RBF payment to direct cost	Donor spending per output delivered
Ratio of RBF payment to direct cost	Donor spending per household
Ratio of RBF payment to direct cost	Donor spending per person
Ratio of RBF payment to direct cost	Cost per output delivered
Ratio of RBF payment to direct cost	Cost per household covered
Ratio of RBF payment to direct cost	Cost per person covered
Use of local systems	Donor spending per output delivered
Use of local systems	Donor spending per household covered
Use of local systems	Donor spending per person covered
Use of local systems	Total cost per unit of output
Use of local systems	Total cost per household covered
Use of local systems	Total cost per person covered
Presence of help with bridge financing	Donor spending per output delivered
Presence of help with bridge financing	Donor spending per household served
Presence of help with bridge financing	Donor spending per person served

Independent Variable	Dependent Variable
Presence of help with bridge financing	Total cost per output delivered
Presence of help with bridge financing	Total cost per household served
Presence of help with bridge financing	Total cost per person served
Public or private service provider	Donor spending per output delivered
Public or private service provider	Donor spending per household served
Public or private service provider	Donor spending per person served
Public or private service provider	Total cost per output delivered
Public or private service provider	Total cost per household served
Public or private service provider	Total cost per person served
Presence of advance payment	Donor spending per unit of output delivered
Presence of advance payment	Donor spending per household served
Presence of advance payment	Donor spending per person served
Presence of advance payment	Cost per unit of output delivered
Presence of advance payment	Cost per household served
Presence of advance payment	Cost per person served

Appendix C: Terms of Reference

I. Background

A. Results-Based Financing Schemes

Results-Based Financing (RBF) mechanisms, in the context of development assistance efforts, use performance-based incentives to enhance those programs' provision of access to, or delivery of, infrastructure and/or social services to at-need populations. Payment of financial incentives under RBF schemes are conditioned on the recipient achieving a pre-determined performance objective or delivering specified outputs. Recipients are typically given discretion in terms of how they choose to achieve the agreed outputs. Results are typically verified independently to ensure transparency and improve accountability.

Interest in RBF mechanisms is generated in part by the United Nations Millennium Development Goals (MDGs) whose 2015 deadline is fast approaching – yet progress towards a number of goals (including the sanitation portion of [Goal 7](#)) appears to be off track. Results-based financing (and related schemes) have been put forward as strategies that can help address structural problems found in more traditional aid programs. Another factor may be “aid fatigue”, or the perception that international assistance programs are failing to produce significant development results, and thus require stronger accountability mechanisms. Finally, RBF mechanisms allow funders to concentrate more on delivery of results, while enabling providers to identify the most effective ways of achieving these.

Proponents of RBF contend that the approach is much more likely to deliver the desired development objectives, with less waste and with in-built incentives encouraging innovation. Critics argue that RBF can undermine national development strategies; limit the pool of partners due to the need for pre-financing, and increase monitoring costs. Setting the performance incentives and the agreed price for results delivery at the correct levels is also challenging. Furthermore, there is a perception that RBF mechanisms are primarily favored by donors and have had limited acceptance from developing country governments.

RBF is part of a larger universe of mechanisms which link aid funds transfer to aid program outcomes.⁵⁸ The various types of RBF which will comprise the main focus of this investigation include:

- **Output-based Aid (OBA)**, wherein a subsidy payment covers a funding gap to access basic services by the poor. OBA subsidies can be used to reduce capital

⁵⁸ For example, see those listed in [Review of major Results Based Aid \(RBA\) and Results Based Financing \(RBF\) schemes](#) (DFID Human Development Resource Centre, 2010).

investments required to deliver services, or to cover the difference between what users can afford to pay and what is required for complete cost recovery.

- **Conditional Cash Transfers (CCTs)** provide cash payments to households that meet certain behavioral requirements, such as regarding children’s health care or education.
- **Advance Market Commitments (AMCs)** are mechanisms that seek to create sustained markets by ensuring future revenues for service providers (for a limited period of time).
- **Voucher Programs** distribute redeemable vouchers to a targeted population, who use them to obtain specific goods or services from pre-selected providers.
- **Other Approaches**, such as Performance Based Contracting, exist; however, most are either variations on the mechanisms cited above, or are basically identical and differ in name only.

Another class of mechanisms – those known as Results-Based Aid (RBA) schemes (which involve payments from funders to partner governments) – will be excluded from this investigation.

B. RBF in the Water, Sanitation, and Hygiene Context

RBF schemes in the health, education and energy sectors have received a considerable amount of attention, and several assessments of their effectiveness have already been conducted. There is no simple way to summarize the observations of these reports, as the overall approach is still relatively new and there are a number of uncontrolled variables involved in every context where RBF programs are carried out. As one commenter noted about health sector RBF schemes:

Of course there is no clear dichotomy between the skeptic and optimist... No one believes RBF is a panacea. No one believes it is doomed to fail either. Where there is a high degree of convergence among observers it centers on one thing: that RBF is worth a try. The evidence, it is true, is still limited. But the evidence we have clearly demonstrates that RBF can improve health, and in challenging contexts. The many positive spillover effects of RBF, like strengthened health systems, hold even more promise—that these improvements will be sustained over the long term.⁵⁹

RBF in the water, sanitation, and hygiene (WASH) sector is newer still and there have been no systematic studies published regarding its efficacy. The World Bank Water and Sanitation Program (WSP), with support from the Bill & Melinda Gates Foundation,

⁵⁹ From L. Morgan - review of *Performance Incentives in Global Health: Potential and Pitfalls* at https://www.rbfhealth.org/system/files/RBF_Feature_A_R3.pdf.

recently published a report which explores RBF's potential within the sanitation sector.³⁶⁰ The Global Partnership on Output-Based Aid ([GPOBA](#)), in collaboration with WSP, also published a similar review of OBA for the sanitation context.⁶¹ A recent review conducted for the UK Department for International Development (DFID) also summarized experience to date with payment by results mechanisms that include both RBF and RBA.⁶²

These reviews generally conclude that public financing is needed to advance the provision of sanitation services to the poor, but acknowledge that constraints on funding and the slow progress towards achieving MDGs will require an increase in the effectiveness of sanitation financing. Results-based financing is in turn recognized as an important tool to consider for the sanitation sector, and a number of promising examples are cited. The potential advantages of RBF (or OBA) schemes in sanitation are given as follows:

- OBA could help extend access to sanitation in a sustainable and more efficient manner;
- OBA could help target subsidies for sustainable sanitation to disadvantaged households and deliver trackable results from subsidies invested in the sector, ensuring minimum leakage;
- OBA could support the development and strengthening of sanitation service providers, whilst giving them incentives to serve areas of greatest need.

However, to date RBF is relatively uncommon in the WASH sector, particularly in sanitation. These reports also point out that this could be the result of various challenges facing RBF in its application in sanitation programming. These include:⁶³

- Public financing for the sanitation sector is relatively limited in most countries, compared with the existing needs;
- Political attention and commitment for sanitation are often lacking;

⁶⁰ Identifying the Potential for Results-Based Financing for Sanitation. S. Trémolet (2011) <http://www.wsp.org/sites/wsp.org/files/publications/WSP-Tremolet-Results-Based-Financing.pdf>.

⁶¹ Output-Based Aid for Sustainable Sanitation. S. Trémolet and B. Evans, 2010. http://www.wsp.org/sites/wsp.org/files/publications/OBA_Sanitation_Framework.pdf.

⁶² Winpenny J., 2013. The Evidence Base for Payment by Results in Water, Sanitation and Hygiene (WASH). A report prepared by the [Evidence on Demand](#) consortium for DFID.

⁶³ From Trémolet and Evans, 2010.

- A lack of clarity on which aspects of the complex sanitation sector should be financed;
- A lack of clarity on which actors in the sanitation sector should be financed.

2. Objectives of the Assignment

This Assignment seeks to fill critical gaps in understanding of whether (and how) RBF schemes might be used to help accelerate the expansion of WASH sector services to achieve MDGs and (ultimately) universal access. The Assignment will therefore identify and assess relevant evidence from ongoing or completed projects to determine what the overall **effectiveness, efficiency, impact, and sustainability** of WASH RBF initiatives has been, their range of design features, and how such approaches compare to other financing mechanisms. The outcome of the Assignment should be a detailed rationale as to whether (and under what circumstances and with which design features⁶⁴) RBF can improve over other financing approaches.

The Foundation is seeking a skilled and experienced professional (Contractor) to design and lead an investigation of WASH RBF in order to address the higher-level objectives cited above, and to marshal evidence to answer the following questions regarding RBF (and how RBF compares with non- RBF project approaches).⁷

Note that this list of questions should be reviewed during project inception; any recommended revisions or prioritizations should be proposed to the Foundation in the Inception Report for consideration.

Effectiveness

1. How well do RBF projects perform in terms of delivering the intended *quantity* of results?
2. Have RBF projects been able to deliver at scale? Have projects achieved initial targets, or have targets often been revised during execution?
3. What is the *quality* of results from RBF projects? This should include examination of how well RBF schemes reach the lowest economic quintiles.
4. Are WASH RBF approaches compatible with relevant development principles such as the Paris Declaration?

⁶⁴ Such as triggers, payment schedule, types of output, risk mitigation measures, etc.

5. What are the conditions and design features linked to successful application of the RBF approach?
6. When should RBF approaches *not* be used?

Efficiency – including Monitoring and Verification

7. What are the various ways of incentivizing providers, and how well has each performed?
What is the attractiveness for implementers to engage?
8. What is the cost efficiency or value-for-money of specific types of RBF schemes?
9. How have RBF results been verified?
10. What are the unit costs of providing goods or services associated with various RBF approaches, and which approaches are the most cost-effective?
11. How have the risks of ‘gaming the system’ and other forms of corruption been managed under RBF projects?

Impact

12. What has been the overall impact of RBF projects?
13. What are the positive additional impacts or knock-on effects, if any, from RBF projects?
14. Have there been any unintentional negative consequences arising from RBF projects?
15. Do RBF projects or schemes tend to favour small-scale suppliers or large scale? Do RBF projects disadvantage those with limited (or extensive) working capital? What implications does RBF have for the range and number of service providers who might be able to engage in such schemes?

Sustainability

16. How have RBF schemes addressed market failures in the sanitation value chain?
17. What are the prospects for long-term *sustainability* of results under RBF?
18. How could RBF schemes be designed in the future to increase sustainability of the outputs and hence outcomes?

Scheme Design

19. What are the theories of change in WASH RBF projects? How do these theories differ among RBF schemes? From non-RBF projects?
20. How should RBF tools be adapted if used for delivering WASH products vs. WASH services?
For delivery of private vs. public goods? To achieve short-term vs. long-term outcomes and impact?
21. What are the key differences between water-focused RBF schemes vs. sanitation-focused

- RBF schemes, if any? Between rural-focused and urban-focused schemes?
22. How do RBF schemes targeting delivery of private (e.g., household level) goods and services differ from those targeting public goods and services?
 23. Have RBF schemes effectively transferred risk from funders to providers? What lessons can be learned about risk-allocations within RBF approaches? How have RBF targets and monitoring approaches been adapted for tracking the delivery of public goods?⁶⁵
 24. Are there recommended processes for designing RBF tools and targets? How have the roles of government agencies, donors and lenders, service providers, and beneficiaries played out during RBF scheme design?

Evidence Base and Knowledge Gaps

25. What is the RBF experience from other (non-WASH) sectors that can provide important in-sights for designing RBF tools for WASH programs?
26. What are the major remaining gaps in knowledge regarding WASH RBF approaches?
27. What research is needed to address these gaps, and how might that work be carried out? (E.g. suggest possible research designs).

The findings generated by answering these questions should be synthesized to extract key lessons about the best practices of RBF for the WASH sector. The Consultant will provide a detailed rationale for ***whether and how RBF may improve upon specific types of WASH interventions as compared to other available financing approaches.***

3. Methodology

The consultant will utilize two main forms of evidence: i) **reviewing available RBF case studies**; and ii) **conducting interviews** with RBF implementers and experts. The Consultant will propose a Sampling Plan in the Inception Report to identify the range and type of case studies available, and to propose an interview plan for the investigation. The interview plan should optimize the number of interviews among different types of schemes and organizations, in a manner which ensures collection of an adequate amount of information while minimizing any sampling bias.

Evidence gathered the interviews and case study reviews shall be critically reviewed to assess the design and performance of RBF schemes. Note that the main focus of the Assignment is the use of RBF in the delivery of *WASH services*. RBF schemes used to advance *WASH technologies* should be acknowledged in the report's bibliography of references, but need not be analyzed for this Assignment.

⁶⁵ Especially in schemes where there may be significant lag times before impacts are seen, and/or where results are costly to track.

The Consultant will examine:

1. WASH RBF projects with documented results. How were those 'results' defined, and how well did the RBF schemes achieve them?
2. Ongoing WASH RBF projects. Are these results defined any differently than those above? (Has there been any adaptation of approach or results targets based on previous experience?)
3. RBF projects in other sectors (e.g., health, education, and energy). What are the key lessons learned and their implications for WASH sector?⁶⁶

Though it should be possible to assess the results of various WASH RBF schemes, it may prove challenging to draw conclusions about how such RBF schemes would have compared with other financing mechanisms. The consultant should therefore pay particular attention to those RBF studies where a counter-factual was included or can be established. In cases where the project design included a counter-factual, how was the counter-factual chosen, and how rigorously was the comparison made?

4. Outputs of the Assignment

The Consultant will provide the following, based on the Assignment's research findings:

1. **Inception Report** including a prioritized list of research questions, a Sampling Plan, key RBF scheme features, and any other information relevant to how the research will be conducted. The Inception Report must be reviewed and agreed upon before moving onto succeeding steps.
2. **Detailed narrative report** outlining the research methodology, findings, conclusions, data gaps, and recommendations (including areas for future evidence gathering).
3. **Glossary and proposed taxonomy** of relevant RBF terms.
4. **Database** of past, ongoing and planned RBF initiatives to ensure completeness of the review, and to help ensure that new evidence can be tracked and obtained as it emerges.
5. **Bibliography** in an agreed reference management software.
6. **Annotated Table of Contents** (approximately 5 pages) for a proposed Guidance Document on implementing RBF schemes in the WASH sector.⁶⁷

⁶⁶ For non-WASH sector RBF projects/schemes, the Consultant may utilize recently-conducted RBF reviews and will not be expected to review original documentation.

⁶⁷ The Consultant should advise on the readiness to draft this document, based on existing state of knowledge in RBF. What additional evidence would be required to prepare such a guidance document?

Appendix D Studies on RBF in Health and Electricity

Researchers reviewed the following studies on RBF in health and electricity. Relevant findings from these studies were mentioned in the appropriate sections of this report (for example, Section 11.1.1 draws on a report on vouchers in health to make recommendations for vouchers in WASH). The reports that were cited appear also appear in the Bibliography (Section 16).

Basinga, P., Gertler, P., Binagwaho, A., Soucat, A., Sturdy, J., & Vermeersch, C. (2011). Effect on Maternal and Child Health Services in Rwanda of Payment to Primary Health Care Providers for Performance: an Impact Evaluation. *Lancet*, 1421-28.

Borghi, J., Gorter, A., Sandiford, P., & Segura, Z. (2005). *The COst-Effectiveness of a Competitive Voucher Scheme to Reduce Sexually Transmitted Infections in High-Risk Groups in Nicaragua*. Oxford, UK: Oxford University Press.

Dalberg Global Development Advisors. (2013). *The Advance Market Commitment for Pneumococcal Vaccines: Process and Design Evaluation*. Washington, DC: Dalberg Global Development Advisors.

Energy Sector Management Assistance Program. (2013). *Results-Based Financing in the Energy Sector: Incentives and Sustainability*. Washington, DC: World Bank.

Energy Sector Management Assistance Program. (2013). *Results-Based Financing in the Energy Sector: An Analytical Guide*. Washington, DC: World Bank.

Gertler, P., & Vermeerch, C. (2013). *Using Performance Incentives to Improve Medical Care Productivity and Health Outcomes*. Berkeley, CA: Institute for Research on Labor and Employment.

Global Development Incubator. (2014). *Innovative Financing for Development: Scalable Business Models that Produce Economic, Social, and Environmental Outcomes*. Washington, DC: Global Development Incubator.

Grewal, S., Venkataraman, S., Bayking, J., Guzman, A., & O'Connor, S. (2006). *Output-Based Aid in the Philippines: Improving Electricity Supply on Remote Islands*. Washington, DC: Global Partnership on Output-Based Aid.

Ireland, M., Paul, E., & Dujardin, B. (2011). Can Performance-Based Financing Be Used to Reform Health Systems in Developing Countries? *Bulletin of the World Health Organization*, 695-698.

Johannes, L., Mullen, P., Okwero, P., & Schneidman, M. (2008). *Performance-Based Contracting in Health: The Experience of Three Projects in Africa*. Washington, DC: Global Partnership On Output-Based Aid.

Kumar, G., & Mumssen, Y. (2010, November). Output-Based Aid and Energy: What Have We Learned So Far? *OBApproaches*.

Lagarde, M., Haines, A., & Palmer, N. (2009). The Impact of Conditional Cash Transfers on Health Outcomes and Use of Health Services in Low and Middle Income Countries (review). *The Cochrane Collaboration*.

- Meesen, B., & Soucat, A. (2010). Performance-Based Financing: Just a Donor Fad or a Catalyst Towards Comprehensive Health-Care Reform? *Bulletin of the World Health Organization*, 153-156.
- Renaud, A. (2013). *Verification of Performance in Results-Based Financing (RBF): The Case of Burundi*. Washington, DC: The World Bank.
- Snyder, C. M., Begor, W., & Berndt, E. R. (2011). Economic Perspectives on the Advance Market Commitment for Pneumococcal Vaccines. *Health Affairs*, 1508-1517.
- The World Bank. (2013). *Connection Charges and Electricity Access in Sub-Saharan Africa*. Washington, DC: World Bank.
- Van de Poel, E., Flores, G., Ir, P., O'Donnell, O., & Van Doorslaer, E. (n.d.). Can Vouchers Deliver? An Evaluation of Subsidies for Maternal Health Care in Cambodia .
- Water and Sanitation Program. (2013). *Private Sector Participation in the Ugandan Water Sector: A Review of 10 years of Private Management of Small Town Water Systems*. Washington, DC: World Bank.
- World Bank. (2009). *Argentina: Provincial Maternal and Child Health Insurance: A results-Based Financing Project at Work*. Washington, DC: World Bank.
- World Bank. (2010). *Rwanda: Performance-Based Financing in Schematics*. Washington, DC: World Bank.
- World Bank. (2013). *Implementation Completion and Results Report for Decentralized Electricity for Universal Access Project*. Washington, DC: World Bank.

Appendix E: Sample of Projects Selected for Analysis

The 30 projects in the research sample are shown in Table E.1.. The projects were selected through stratified sampling to ensure the report looked at all types of RBF. The 11 projects that were chosen for interviews are shaded orange in the table.

Table E.1: Sample Set, with Projects Selected for Interviews Highlighted

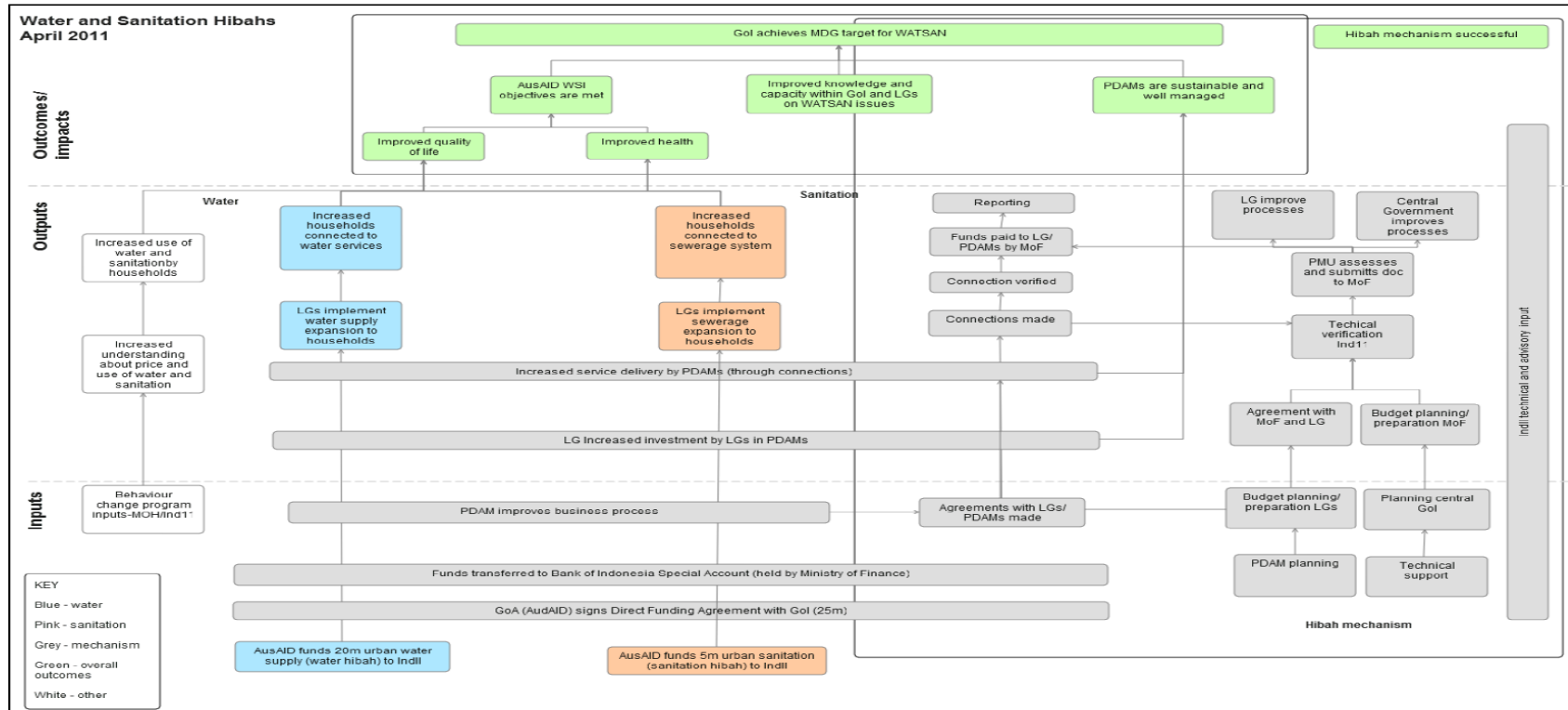
Project Name	RBF Type	Type of Good	Sector	Location
Bangladesh: Social Investment Program (World Bank)	OBA	Private	Water	Urban and Rural
Cameroon: Affermage (GPOBA)	OBA	Private	Water	Urban
Guinea: Water Supply (02) (World Bank)	OBA	Private	Water	Urban and Rural
India: Andhra Pradesh Rural Water (GPOBA)	OBA	Private	Water	Rural
Indonesia: PAMSIMAS (World Bank)	OBA	Private	Water	Peri-urban and rural
Indonesia: Second Generation	OBA	Private	Water	Rural
Indonesia: Surabaya Water (GPOBA)	OBA	Private	Water	Urban
Kenya: Microfinance for Community Water Projects (GPOBA)	OBA	Private	Water	Peri-urban and rural
Mozambique: Water Private Sector Contracts (GPOBA)	OBA	Private	Water	Urban
Paraguay: Fourth Rural WSS (World Bank)	OBA	Private	Water	Rural
Philippines: Manila Water (GPOBA)	OBA	Private	Water	Urban
Uganda: Small Town and Rural Water (GPOBA)	OBA	Private	Water	Rural
Uganda: Water for the Poor (GPOBA)	OBA	Private	Water	Urban
Brazil: PRODES	OBA	Mixed public and private	Sanitation	Rural
Mozambique: PLM	OBA	Mixed public and private	Sanitation	Urban
Senegal: On-Site Sanitation (GPOBA)	OBA	Mixed public and private	Sanitation	Peri-urban
Senegal: PAQPUD (World Bank)	OBA	Mixed public and private	Sanitation	Peri-urban

Project Name	RBF Type	Type of Good	Sector	Location
Uruguay: OSE Modernization (World Bank)	OBA	Mixed public and private	Sanitation	Rural
Honduras: Extension of Water and Sanitation (GPOBA)	OBA	Mixed public and private	Water and Sanitation	Peri-urban and rural
Mexico: Decentralized Loan (World Bank)	OBA	Mixed public and private	Water and Sanitation	Urban and Rural
Indonesia: Hibah	OBA	Mixed public and private	Water and Sanitation	Urban and Rural
Morocco: Improved Access (GPOBA)	OBA	Mixed public and private	Water and Sanitation	Peri-urban and rural
Australia: Water Payment Assistance (PAS)	Voucher	Private	Water	Urban
Somalia: WASH Cluster	Voucher	Private	Water	Rural
Bangladesh: BRAC WASH Vouchers	Voucher	Mixed public and private	Sanitation	Rural
Haiti: Oxfam Hygiene Vouchers	Voucher	Mixed public and private	Water and Sanitation	Urban
Bangladesh: DISHARI	CCT	Public	Sanitation	Rural
India: Nirmal Gram Puraskar	CCT	Public	Sanitation	Rural
Cambodia: East Meets West Toilet Rebate	CCT -rebate	Public	Sanitation	Rural
Vietnam: East Meets West Toilet Rebate	CCT -rebate	Public	Sanitation	Rural

Appendix F: Theory of Change for the Hibah

AusAID's Theory of Change for the Hibah is shown in Figure F.1.

Figure F.1: Theory of Change for the Hibah



Source: Averill, Scally-Irvine, Nordiawan, Howard, & Gouy, 2011



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