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OBA in Infrastructure: The Experience So Far

Introduction

Increasing access to basic infrastructure services is critical to reducing poverty and enabling poor and marginalized people to participate in and benefit from economic development. Too often, however, the gap between the cost of the initial service connection and a user's ability to pay for that connection prevents the poor from availing of basic services. Output-based aid (OBA), a form of results-based financing (RBF), addresses this gap, supporting poor people in accessing services such as household connections to the water supply or electricity grid, renewable energy systems, or solid waste management. By promoting the inclusion of people who may otherwise be left out of development gains, as well as encouraging utility sector reform, OBA supports the goal of universal access to basic services, one of the aims of the Sustainable Development Goals. This paper highlights the OBA experience in infrastructure so far and the results achieved.

How OBA Works

For more than a decade, the Global Partnership on Output-based Aid (GPOBA) has been piloting OBA projects and exploring RBF approaches to service delivery. GPOBA works with implementing partners, public and private, who receive a payment to partially defray the cost of setting up a connection. The service provider pre-finances outputs and services, and OBA payments are made only upon the delivery and verification of agreed-upon outputs. Independent verification agents (IVAs) are a core component of every OBA project; though they ultimately focus on outputs, they monitor implementation throughout the project cycle, so that obstacles can be identified and adjustments made before the point of final verification. By linking OBA payments with verified outputs, OBA passes the performance and financial risk to the service provider, thus ensuring quality and accountability and keeping the focus on measurable results.

Since GPOBA began implementing access projects in 2006, it has reached more than nine million people through 48 projects in six sectors. Of GPOBA's total portfolio of $239 million, $199 million is allocated for infrastructure projects, primarily in the energy and water/sanitation sectors, but also in solid waste management and telecoms; $123.2 million of this allocation has so far been disbursed, enabling OBA projects to support 7.5 million people in accessing services and to strengthen institutional capacities and financial markets in-country. For every dollar of infrastructure financing, GPOBA has leveraged $2.4 in additional financing from development partners, the public and private sectors, and user contributions.

How OBA Reaches the Poor

Although subsidized services are common in a number of infrastructure sectors, they don't always benefit poor households, which are often not connected to networks in the first place. Moreover, large infrastructure projects often don't extend services to poor communities due to lack of financial incentives for operators—users may be unable to pay the cost of connection, for instance, or populations are too geographically dispersed. In fragile and conflict-affected situations (FCS), this marginalization is exacerbated, as the poor suffer the effects of fragility disproportionately, and have little or no resources to fall back on.

Because OBA specifically targets poor populations, it ensures that the benefits of large infrastructure investment reach those most in need. Connection subsidies create the financial incentives necessary for providers to extend affordable services to low-income consumers. While most OBA subsidies cover capital costs, projects have also been piloted that support access in other ways. For instance, the OBA payment in an electricity project in Ethiopia covered interest on five-year loans extended to customers by the utility to pay for connection charges.

To ensure that aid reaches the desired populations, OBA carefully tailors targeting methodologies to the project, country, and context. Methodologies include geographic, means-tested, self-selection, poverty mapping, or a blend of these. Geographic targeting can be combined with criteria based on housing characteristics in order to better direct subsidies to low-income households. In the solid waste management sector, OBA subsidies are better targeted at municipalities with low average incomes than at individual households, as waste management is a community-based activity involving shared service provision.

Leveraging Private and Domestic Finance

Innovative financing mechanisms that can unlock private capital critical for infrastructure development are becoming increasingly important. OBA projects have mobilized

Table 1. Leveraged Finance in OBA Infrastructure Projects

Status	Infrastructure projects	Total GPOBA share leverage	Other sources of financing	Project beneficiaries
Closed	24 Projects $79.4m	$271m 29% GPOBA Leverage ratio 2.4m	12% Low-Income Users 30% Private Sector 7% Public Sector 23% Development Partners	5,343,257 63% Energy 28% Water/San 9% ICT
Ongoing	17 Projects $100.3m	$348 29% GPOBA Leverage ratio 2.5m	9% Low-Income Users 16% Private Sector 20% Public Sector 25% Development Partners	2,208,510 63% SWM 34% Energy 3% Water/San
Total	41 Projects $179.7m	$619m 29% GPOBA Leverage ratio 2.4m	10% Low-Income Users 22% Private Sector 14% Public Sector 24% Development Partners	7,551,767 55% Energy 20% Water/San 18% SWM 7% ICT

domestic resources, leveraging commercial financing (e.g., through PPPs, commercial lending, or community equity) to make pro-poor investments viable, and leveraged contributions from development partners, governments, and local service users. For every dollar of infrastructure investment, GPOBA has leveraged $2.4 in additional financing. The breakdown of leveraged finance is available in Table 1.

A microfinance pilot in Kenya to increase access to water through investments in 35 community subprojects was particularly successful at catalyzing private sector lending, generating a demand for commercial loans to finance small piped-water systems and mobilizing community investment. Leveraging financial resources of a $2.6m grant, the project enabled commercial borrowing of $3.4 million from K-Rep Bank and mobilized $1.2 million in equity from communities for investment. The financing mechanism is being scaled up through two water and sanitation projects in Kenya; the water and sanitation project in Nairobi has leveraged considerable financial resources, including a $6 million local commercial loan obtained by Nairobi City Water and Sewerage Company. Three other utilities have borrowed $1.5 million, and a pipeline of $12 million is being appraised by commercial banks. In a water project in Honduras, OBA subsidies of $4 million leveraged $3 million from additional donors, municipalities, implementers, service providers, and communities, while in Morocco, a water and sanitation project leveraged $30 million from public and private sources from an initial $7 million grant.

In a solar home system (SHS) project in Ghana, $1.6 million in consumer loans was accessed through 12 rural banks, while an OBA scheme in Bangladesh—part of the larger Rural Electrification and Renewable Energy Development (RERED) project—leveraged the capacities of microfinance institutions and the private sector, installing almost 500,000 SHSs benefiting over 2.2 million people. An additional GPOBA grant of $15 million under RERED II helped to mobilize additional financing, including significant contributions from development partners and private sponsors, as well as $14 million from the implementing agency Infrastructure Development Company Limited (IDCOL).

Building Institutional and Technical Capacity

OBA infrastructure projects build capacity at the local level, partnering with institutions, governments, semi-state bodies, NGOs, public and private utilities, microfinance banks, and local consultants to create more efficient practices and operations that can extend beyond the lifespan of the project. One means of building capacity is through technical assistance (TA). In some cases—such as a gas and heating project in Armenia or a rural electricity access project in Bolivia—TA has preceded and led directly to the design and implementation of a subsidy project. But TA is also often embedded in OBA subsidy projects, enhancing the capacities of clients and service providers. Examples of strong capacity building in OBA projects are:

- **Kenya.** Collaboration between implementing the partner KPLC and the World Bank/GPOBA accelerated a surge in connections during the Kenya Electricity Expansion Project. GPOBA supported KPLC during a reorganization that saw management become fully engaged in tracking project progress, which helped improve performance and built trust between slum residents and KPLC staff.
- **Mali.** A PPP involving the Rural Electrification and Household Energy Services Agency (AMADER) supported access to mini-grids and SHSs in rural areas. During the recent conflict in Mali, AMADER lost in-house expertise, and GPOBA/World Bank worked with them to enhance technical, procurement, and monitoring capacities.

- **Nepal**. An OBA project expanding access to solid waste management services is building technical capacity in municipalities through careful design of verification processes. Strong TA is supporting preparation of municipalities' service improvement plans, along with related waste management systems.
- **Bangladesh**. In a PPP for renewable energy, TA included support for developing sub-project proposals, technical quality assurance, training, and outreach. Subsequently, the implementing partner, IDCOL, trained government technical staff from ten countries in project development.
- **Liberia**. Prior to the Willingness-to-Pay Analysis in Liberia, there was little information on uses of grid electricity in Liberia. The study increased understanding of the Liberia Electricity Corporation's potential for expansion, and provided background documentation for the Government's Least Cost Power Development Plan.

Developing Local Markets and SMEs

While OBA projects focus on helping the poor to access basic infrastructure, they have spin-off effects of strengthening local markets, improving the quality of products available, and supporting jobs and the development of small- and medium-sized enterprises (SMEs). A sanitation project in Senegal, for example, supported employment for artisans and local workers and saw firms boost their capacity to deliver work compliant with project standards, an improvement likely to attract additional private investment in the sector.

IDCOL, in Bangladesh, has been particularly effective in expanding its activities and the SHS market following the initial SHS project. The implementation since 2003 of RERED led to the growth of local renewable energy engineering expertise. IDCOL collaborated with local technical universities that customized training programs to align with market developments. This new local expertise has been instrumental in piloting other renewable energy technologies, thus expanding the domestic commercial market for clean energy in Bangladesh.

In Ghana, the solar photovoltaic (PV) market was nascent. Because providers did not have standardized products, installations were exorbitantly priced, and the industry remained undeveloped. OBA subsidies contributed to rapid development of the market for PV systems and increased the interest of PV vendors in rural markets.

In Kenya, every dollar spent on a community water project realized $3 to $6 of economic benefits, including promotion of small-scale enterprises. Water was used for productive purposes like small animal husbandry and vegetable gardening for profit. Energy projects have also supported household income-generation, as people are able to keep their shops open in the evenings or continue activities, such as sewing, after dark.

Cross-cutting Impacts

Several co-benefits result from OBA projects, such as contributions to climate change mitigation, improvements in quality of life and social welfare for the poor, and positive outcomes for women. Renewable energy solutions such as SHSs not only reduce environmental degradation and strengthen natural resource management, but—as is true of grid electrification—particularly benefit women and children.

The electrification project in Ethiopia and the SHS project in Bangladesh both reported health improvements and labor savings. Women spent less time gathering wood fuels, freeing up time for educational activities, recreation, and productive work. The replacement of kerosene and other smoke-emitting fuels with grid or renewable energy reduced indoor pollution and improved lighting, resulting in lower incidence of respiratory illnesses and improved study conditions for children.

Piped water projects can significantly reduce the time women spend collecting water, as was reported in a project in Andhra Pradesh (India), which also saw an 85 percent drop in water-borne diseases.

Looking Ahead

OBA has proven itself strategically relevant for infrastructure sectors and economic development in poor communities. OBA approaches have been scaled up and/or applied across multiple sectors in several countries, and projects have catalyzed the mainstreaming of OBA into broader sector frameworks. With demand for OBA and other results-based approaches strong, GPOBA is developing projects that include other finance instruments, and leveraging more private sector equity and expertise. GPOBA will continue strategic engagements advising government, community, bilateral, multilateral, and development-partner initiatives on RBF approaches, so that poor and marginalized communities can access the basic services they need to improve their livelihoods, health, and quality of life.

OBA in Infrastructure: The Results So Far

Water & Sanitation	
Piped solutions	
Honduras Water and Sanitation	14,642 yard taps
Indonesia Water (Jakarta/Surabaya)	18,515 house/yard connections
Kenya Microfinance for Community Water	17,500 connections
Morocco Sanitation	12,426 toilets (and water taps)
Uganda Small Towns	2,416 yard taps
Cameroon Water Affermage	25,254 household connections
Mozambique Coverage Expansion	33,407 household connections
Philippines Metro Manila	28,562 household connections
Vietnam Service Expansion	35,344 household connections
At-source and on-site solutions	
India UV Filtered Water (Andhra Pradesh)	25 distribution centers
Senegal Sanitation	11,495 toilets
Uganda (Kampala)	7,524 (yard taps/public water points)
Energy	
Grid-based	
Colombia Gas	34,138 household connections
Armenia Heating	5,847 household connections
Ethiopia Electrification	60,000 household connections
India Mumbai Slums Electrification	15 household connections
Uganda OBA Facility	36,864 household connections
Liberia Improved Access	16,739 household connections
Off-grid/on-site solutions	
Bangladesh Rural Mini Grid	2,184 (mini-grid/solar water pumps)
Bangladesh SHS	497,613 Solar Home Systems
Bolivia Decentralized Electricity	11,755 (SHSs/Pico-PV systems)
Ghana Rural Energy Access	16,822 (SHSs/solar lanterns)
Nepal Biogas	26,363 bio-digesters
Telecoms	
Indonesia Expanding Telecommunications	222 internet access locations
Mongolia Universal Access	3 telephone networks (1 public access/2 wireless)

About OBApproaches

OBApproaches is a forum for discussing and disseminating recent experiences and innovations in supporting the delivery of basic services to the poor. The series focuses on the provision of water, energy, telecommunications, transport, health, and education in developing countries, in particular through output- or performance-based approaches. The case studies have been chosen and presented by the authors in agreement with the GPOBA management team and are not to be attributed to GPOBA's donors, the World Bank, or any other affiliated organizations. Nor do any of the conclusions represent official policy of GPOBA, the World Bank, or the countries they represent.

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