OBApproaches June 2015 | Note Number 46

Output-Based Aid for Solid Waste Management Nepal and the West Bank

Photo courtesy of COWI

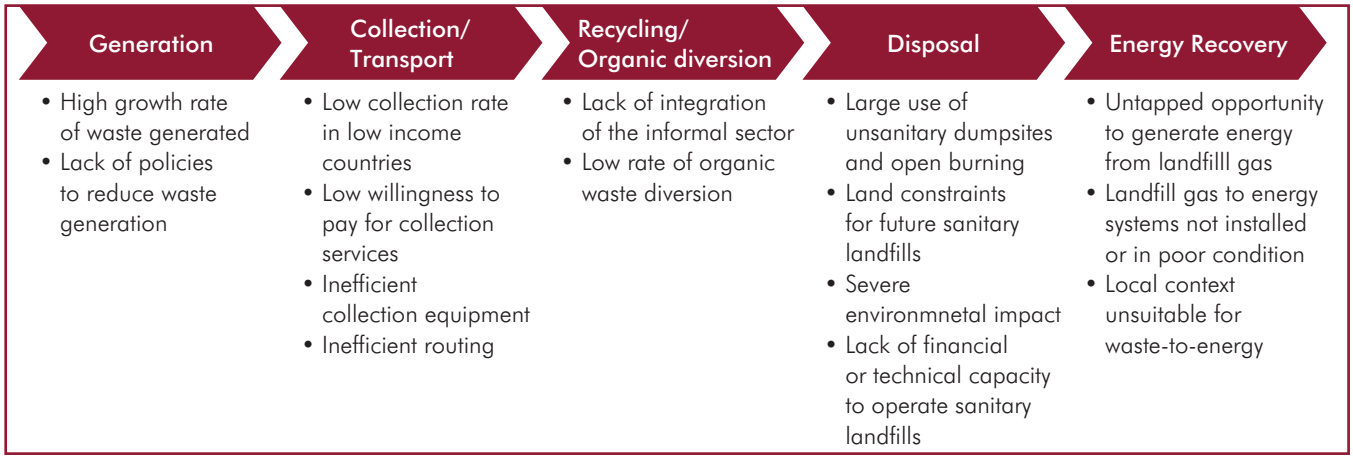
With rapid urbanization, population growth, and new economic activity, municipal solid waste is increasing at alarming rates, and is expected to almost triple in low and lower middle income countries by 2025.[1] At the same time, solid waste management (SWM) systems in most developing countries are underfunded and suffer from a lack of planning. Improving SWM requires intervention all along the supply chain (see figure 1). Such improvements do not necessarily require major financial investment. Low-cost interventions that utilize existing technical and human resources, combined with support for crucial behavior changes at individual and municipal level, can bring about significant enhancements in SWM. Output-based aid (OBA) is a results-based financing mechanism that ties the disbursement of funds to the achievement of specified outputs. This note examines the design of two projects—in Nepal and the West Bank—that use an OBA approach to SWM.

The Development Challenge

In low income countries, municipalities commonly spend 20–50 percent of their budgets on SWM. The vast majority of that expenditure (80–90 percent) is spent on waste collection, and the results are often incomplete. Only about half of what is collected is processed to minimum acceptable standards, with the rest being disposed of in unsanitary dumpsites and by open burning, with adverse effects on health and the environment. The urban poor tend to suffer the most, as they are more likely to live near improperly disposed solid waste or unsanitary dumpsites.

One of the major obstacles to improving SWM in poor countries is the lack of sustainable financing. Households and service providers are caught in a vicious cycle, with municipalities unable to improve services and expand their capacities unless they can increase fee collection rates, while residents are unwilling to pay for inadequate services. With a limited ability to collect fees, cities have

Figure 1. Municipal Solid Waste Value Chain



few or no incentives to improve their services or to innovate and increase efficiency.

Meanwhile, increasing urbanization has intensified pressure on available land, making it more difficult to find appropriate land for constructing sanitary landfills, and financial or technical capacity to operate such facilities is often limited. The absence of properly designed and operated landfills means that opportunities for generating energy from waste gas are lost, along with the chance to reduce greenhouse gas emissions.

Innovative financing mechanisms are needed if cities are to begin to increase cost-recovery levels, improve service delivery, and address the environmental impacts of poor waste management.

Designing OBA Projects in SWM

OBA is one instrument that can benefit the SWM sector by ensuring that funds are used efficiently and transparently to produce verified results. Experience so far in designing OBA projects in SWM has made clear some key considerations.

As cities and municipalities have great variation in their practices, problems and capacities, SWM projects should focus on a set of results tailored to context-specific needs, with service providers and municipalities deciding which service-delivery models can best achieve results locally; these models should meet established environmental standards and be capable of achieving a level of financial viability that may lead to the sustainable provision of services.

SWM projects in low-capacity areas or in fragile and conflict-affected situations (FCS) need to incorporate significant technical assistance, with planning and resources for this included from a project's inception. As political and security environments are liable to change in FCS, projects should be designed for flexibility and adaptability. Simplicity in institutional arrangements, flow of funds, and verification mechanisms is important, particularly in unpredictable environments.

In Nepal and the West Bank, two OBA projects use subsidies to improve the financial sustainability of municipal solid waste services by increasing user fee collection while improving waste collection services. Both projects have a strong focus on behavior change throughout the waste-generation and waste-management chains.

Nepal

In Nepal, the country's municipal capacities are under immense pressure due to rapid urbanization (more than 3.5 percent per year) and struggle to deal with SWM. Of the 700,000 tons of waste generated each year in Nepal's cities, less than 50 percent is collected, and most of this waste is informally dumped. Only four out of Nepal's more than 50 official municipalities have sanitary landfill sites. Most municipalities do not earn any revenue from SWM services, yet SWM is a major contributor to municipal expenditure.

In 2013, a grant of $4,288,381 was approved for an OBA project in Nepal to expand SWM services over a four-year period. An estimated 800,000 people are expected to benefit. The project aims to improve access to high quality and financially sustainable waste management services in five participating municipalities (Tansen, Dhankuta, Lalitpur, Ghorahi, and Pokhara). Municipalities selected for the project were required to have access to an operational landfill, a basic functioning SWM system for collection and disposal, and a system to collect fees from residents for these services. The municipalities were also required to prepare a SWM strategy and action plan.

The OBA subsidy bridges the gap between the cost of delivering improved SWM services (capital costs, operations

and maintenance costs, and other expenses) and the revenues that municipalities can collect for these services. The amount of the subsidy is designed to decrease over time, as services improve and the increases in fee collection rates contribute to cost recovery. Implicit in the design is the assumption that as the quality of SWM services improves, residents' willingness to pay will grow, and municipalities will be able to gradually increase the fees charged.

To measure results, the project provides for two separate and independent stages of verification. The first stage addresses service provision, with an independent technical verification agent (ITVA) confirming that an acceptable standard of SWM services has been provided, as recorded by municipalities on a technical scorecard. Once this condition is met, an independent financial verification agent (IFVA) verifies the level of fees collected from beneficiaries, based on money deposited into the municipality's account for SWM services. This two-stage process encourages municipalities to focus first on instituting the basic requirements of a SWM system, and then focus on actual performance. Disbursement of subsidies occurs once both stages of verification have been completed, with verification taking place on an annual basis.

Implementation support to municipalities during the project includes technical assistance in the preparation of SWM service improvement plans; improvement of billing, revenue collection, and performance management systems; and design of contractual arrangements.

The West Bank

Hebron and Bethlehem, two of the poorest governorates in the West Bank, generate 34 percent of the 1.2 million tons of waste produced annually in the West Bank. The solid waste sector in these two governorates suffers from poor planning, high operations and maintenance costs, and limited financial resources. Although waste collection tends to be high (as much as 98%), in the absence of a sanitary landfill, collected waste is disposed of in 19 unsanitary dumpsites.

In 2013, a grant of $8,256,623 was approved for an OBA project in Hebron and Bethlehem to increase access to municipal solid waste services and improve financial sustainability. It is estimated that 840,000 residents will benefit. The OBA project is part of the larger Southern West Bank Solid Waste Management Project, funded by the World Bank Group and other donors, which was undertaken to assist the Palestinian Authority in upgrading the entire SWM system in Hebron and Bethlehem governorates. The overall project included the construction of a new landfill at Al Minya. The International Finance Corporation (IFC) worked with the Joint Services Council of Hebron and Bethlehem (JSC-H&B) to design and tender a public-private partnership (PPP) for the operations and maintenance of the Al Minya landfill.

Photo courtesy of Sintana Vergara

The OBA subsidy is funded by the IFC through GPOBA. It is disbursed over a four-year period to service providers to partially support increased costs associated with waste disposal at Al Minya, thus allowing providers to focus resources on improving services at other points on the SWM chain. The subsidy is designed to decrease over time as fee collection increases, providing an incentive for councils to strengthen efforts to collect solid waste fees. The achievement of specific service improvement targets (cleanliness of areas; total waste managed; the development of a SWM strategy for waste treatment and an information management system) is verified by an IVA. As in Nepal, this first stage of verification focuses on implementation and monitoring systems as a prerequisite to the second stage, which concerns performance of service delivery and fee collection. A technical scorecard is used in the verification process, which is comprised of indicators for service quality and financial performance of SWM operations. Verification occurs on a semi-annual basis, and subsidy payments are triggered upon satisfactory verification in both stages.

Lessons Learned

- **Improving SWM services does not always require more staff, vehicles or equipment, or bigger landfill space.** Projects can support the use of available technical and human resources by utilizing designs of simple, robust, and affordable systems that can be easily managed and maintained by existing staff. In Nepal, for instance, the project will capitalize on ongoing plans that the municipalities had already set in motion to support SWM system improvement. It will aim to make the most out of current landfill space while improving practices related to management of that space.
- **Because SWM is a community-based activity, OBA subsidies in the SWM sector are better targeted at municipalities rather than individual households.** In

sectors such as water or energy, subsidies can be easily targeted to individual households; however, SWM involves shared service provision. In the West Bank, for example, the Hebron and Bethlehem governorates were selected as grant recipients based on average mean income criteria, which is very low, rather than the further identification of poor households or poor neighborhoods within these already poor governorates.

- **OBA can be an effective tool to attract the private sector and support PPPs, particularly in fragile situations.** The West Bank is a highly risky environment for international private sector investors, even for those companies with the advanced technology and experience to operate an SWM facility to required standards. The West Bank project has, however, attracted an international firm to operate the Al Minya landfill, in part due to the OBA component of the project. Under the PPP designed by IFC, the firm is paid a portion of the final disposal bill on behalf of the councils. This payment, subsidized in part by OBA funds, helps to minimize risk for the private operator. The OBA subsidies, based on specific service improvements and financial targets, provide additional comfort to the operator.
- **Supplementing financial subsidies with educational outreach provides greater leverage for SWM projects.** The introduction of new or increased fees for waste management, especially when service quality has been low in the past, requires outreach in order to gain public acceptance. Any outreach activities should aim to ensure that important stakeholders, such as municipality staff, see the long-term value of strengthened institutions and capacities, and that residents understand that improvements in service are directly linked to the payment of fees.
- **Simplicity, flexibility and effectiveness must be balanced in project design.** Institutional arrangements and flow of funds should be simply presented and easily understood by the implementing agency, residents, and IVAs. In the Nepal project, the diagrammatic representation of institutional arrangements and flow of funds was complex and difficult to explain. Verification mechanisms should likewise use clear, straightforward protocols that are easy for all parties to understand and that are not so cumbersome as to incur excessive transaction costs or discourage use.

Conclusion

Addressing solid waste challenges requires a holistic approach, with support provided all along the SWM chain. Any interventions in the sector should take into account the country's broader solid-waste context, and should make realistic allowances for the time needed to bring about lasting changes in behavior, which are key to the improvement of SWM. The West Bank and Nepal projects demonstrate that OBA approaches are flexible enough to be applied in FCS and can jump-start SWM services in low-income countries where service delivery is poor or non-existent or where fee collection to support waste services is a major challenge.

[1] Results-Based Financing for Municipal Solid Waste (World Bank, Urban Development Series, July 2014).

About OBApproaches

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