

Output-Based Disbursements in Mexico: Transforming the Water Sector in Guanajuato

By Gustavo Saltiel and Cledan Mandri-Perrott

A project in the Mexican state of Guanajuato shows how tying disbursements to specific outputs can provide incentives for effective implementation of a water sector strategy. The disbursements, from pooled government and World Bank loan funds, are made against connections to safe and reliable water service and improvements in utilities' efficiency and wastewater treatment. This scheme has shifted the focus from inputs to performance standards. And it has put the burden of good design on the state government, requiring it to develop a clear strategy for the sector and a system for measuring results. The scheme has proved to be effective in improving sector performance, ensuring accountability by municipal utilities, and supporting medium- to long-term planning for better water and environmental management.

Project background

The Decentralized Infrastructure Reform and Development Project in the Mexican state of Guanajuato, approved by the World Bank (WB) in 2005, was the first multi-sector, infrastructure sector-wide approach (SWAp) funded by the WB in Latin America.¹ The WB financing, a US\$108 million investment loan, is supporting Guanajuato in achieving sustainable investment levels and efficient implementation of sector strategies for roads, low-income housing, and water and sanitation.² The project is piloting the use of a country's own systems for managing social and environmental risks in WB-funded projects. It also includes both an output-based disbursement (OBD) mechanism (see Box 1) and a currency conversion mechanism allowing disbursements in local currency. This note describes how the OBD scheme has helped improve performance in the water sector in Guanajuato.

Designing a sector strategy

Access to water and sanitation in Mexico has increased steadily in recent decades, reaching levels



© World Bank

significantly above the average for Latin American and other developing countries. About 90 percent of the population now has access to a water connection (either in the house or nearby) and sanitation,

¹ The SWAp design means that the rules governing project execution apply to all expenditures under the sector strategies regardless of the funding source—whether the WB loan, federal government transfers, state revenues, or municipal contributions.

² The WB channels the funds to the state through BANOBRAS, the Mexican Development Bank.

Gustavo Saltiel is Sector Leader for Mexico in the Sustainable Development Department, Latin America and the Caribbean Region of the World Bank. **Cledan Mandri-Perrott** is a Senior Infrastructure Specialist with the World Bank's Finance, Economics, and Urban Department.

Box 1: OBD and OBA

Output-based disbursement (OBD)* was developed specifically for high-capacity IBRD members in the middle-income countries (MIC) group, as well as for select IDA countries with reliable implementation capacity. Under an OBD approach, a government entity, operating on a non-commercial basis, undertakes or causes a third party to undertake the achievement of a pre-defined output by providing financing and technical assistance to that third party. After verification that the pre-defined output has been achieved, the government entity requests that the WB disburses the loan or grant resources (to the government entity). OBD is similar to output-based aid (OBA) in that both approaches always involve a pre-agreed payment for the delivery of a specified output. They differ in that an OBA approach is usually linked to the provision of basic services by a service provider. The service provider undertakes the achievement of pre-defined outputs, bearing the associated risk (e.g., pre-financing, quality of service), and upon completion the outputs are reimbursed through subsidies, provided that independent verification is satisfactory. The subsidies (typically capital subsidies) can be financed through donor funding, including WB loans and/or grants, which are then on-granted to the service provider by the government borrower/recipient.**

* For more information on OBD, see *Implementing Output-Based Disbursement Mechanisms for Investment Operations, Operational / Technical Guidance Note to Staff*, OPCS, April 2, 2007.

** In the case of projects funded by the WB-administered Global Partnership on Output-Based Aid (GPOBA), the grant agreement can be signed directly with the service provider or fiduciary agent.

but sharp differences remain between urban and rural areas. In the State of Guanajuato, overall coverage is 92 percent for water and 75 percent for sanitation, but in rural areas, where a third of the state’s 4.9 million people live, coverage is only 77 percent and 60 percent respectively.

Mexico’s water and wastewater sector faces many challenges. The share of municipal wastewater receiving treatment (30 percent) is more than twice the Latin American average (14 percent), but far below levels in OECD countries (CONAGUA 2008; World Bank 2005). Many treatment plants do not comply with basic standards for effluent discharge. Some 55 percent of households connected to the water distribution network experience interruptions to supply, a problem most acute in smaller municipalities and for the poor (World Bank 2005). And as measured by nonrevenue water, operating and collection efficiency in Mexico is well below the average for OECD countries.³

Compounding this inefficiency is the lack of a clear national policy framework for water and wastewater tariffs, subsidies, and cost-recovery goals. Moreover, the traditional focus on developing infrastructure has shifted attention away from increasing efficiency, improving the quality of service, and extending services to the poor.

To tackle problems like these, Guanajuato has developed a comprehensive water sector strategy to be implemented by the State Water Commission, directly or through municipalities or municipal utilities. The strategy is built on three main pillars:

- *Policy focus:* The State Water Commission is consolidating its role as a policy maker, process facilitator, implementing agency, and provider of technical assistance for municipal water utilities. In addition to streamlining tariff structures and improving managerial practices, the commission has recently updated the state water plan through a participatory process, strengthening the focus on gender, sustainability, equity, participation, and reversal of environmental degradation. The commission has also strengthened the focus on performance reporting by the water operators.
- *Integrated water resources management:* The State Water Commission seeks to integrate diverse disciplines. For example, the commission has supported the creation of groundwater committees that have an important say in water management issues. The commission also is supporting the construction of wastewater treatment plants to improve the quality of the state’s scarce water resources, ranking Guanajuato among the leading states in wastewater treatment coverage in Mexico.
- *Increase in service coverage:* The commission has been working toward sustainable solutions to rural water and sanitation needs by supporting the creation of rural water boards (community organizations in charge of the local water system) and making investments in rural communities a priority.

Choosing output targets

After extensive debate among stakeholders, the project partners chose three key output indicators and es-

³ Nonrevenue water is the difference between water supplied and water sold as a percentage of water supplied.

Table 1. Unit values for output-based disbursements

Output indicator	Disbursement unit value	Target	Total (US\$)
Access to service	\$250 per rural or urban inhabitant	90,640 inhabitants	22,666,000
Overall efficiency	\$160,000 per utility that increases efficiency by 10%	64 utilities increasing efficiency by 10%	10,240,000
Wastewater treatment level	\$60,000 per 150 kilograms BOD removed	12,750 kilograms BOD	5,100,000
Total			38,000,000

established unit values for WB loan disbursements (see Table 1):

- The **overall efficiency indicator**, defined as revenues relative to the volume of water produced, aims to reward municipal utilities for increasing revenues and reducing water use and thus ultimately improve their financial standing. On the basis of historical data on efficiency improvements and associated costs, a unit value of \$160,000 was established for utilities demonstrating an efficiency increase of 10 percent or more.
- The **wastewater treatment indicator** aims to ensure that municipal utilities put wastewater connections and treatment on their agenda—a priority given the low levels of wastewater treatment in Guanaajuato. A value of \$60,000 for every 150 kilograms of biological oxygen demand (BOD) removed was established based on projected costs and treatment plant efficiencies.
- The **access-to-service indicator** was intended to ensure that each municipality targeted both urban and rural populations. A single value of \$250 was set for each inhabitant connected, rural or urban. Higher than the national average cost for new connections, this amount was expected to provide a clear incentive for expanding services to poor residents without access.

Lessons learned

Establishing *baseline data* was critical for measuring outputs. Data on household connections were taken from census data. Revenues relative to volume of water produced were derived from utilities' performance and cost accounts. Baseline data for the wastewater treatment indicator were determined on the basis of the plants in operation before the project began.

Picking the *output indicators* and setting the *unit values* proved to be complex. The value for the access-to-service indicator was set higher than the national average connection cost to promote greater coverage, while the value for the wastewater treatment indicator was set lower than actual costs to give improving treatment facilities less priority than increasing service coverage and efficiency. While the value for the efficiency improvement indicator was based on historical cost data, many efficiency improvements clearly require only small investments (such as changes in managerial practices). So the value chosen provides a clear incentive to allocate funding toward rehabilitating water systems, which should improve the quality and sustainability of service.

The *State Water Commission* played a crucial role in the project's success. Although the commission is a state agency, it can act as an arbiter between the state and municipalities if disputes arise; there is no conflict of interest because (unlike other water commissions in the country) it has no mandate to develop and construct projects. The commission is also an essential part of the payment mechanism, providing independent verification of the outputs achieved by each municipality.

Results of the OBD scheme

Tying pooled funds to specific outputs required a paradigm shift for both the WB (in its assistance approach) and the borrower country (in its mechanisms for disbursement and implementation). Under the OBD scheme, payments are not conditional on outputs alone: total outputs must be reconciled with eligible expenditures, i.e. expenditures procured under WB procurement rules. But flexibility in the project design allows for outputs and expenditures in

different categories as long as the total amounts disbursed under the two concepts match. For example, the State of Guanajuato can claim a disbursement on the basis of the results achieved in the wastewater treatment indicator and later “justify” the claim through eligible expenditures incurred in water or sewerage works. The burden of proof for expenditures is on the state.

In terms of the *output targets*, by April 2008 the project had surpassed the target for access to services, providing full access to more than 90,640 inhabitants, most of them living in poor areas. Similarly, more than 60 municipal utilities had shown an increase in overall efficiency of at least 10 percent. And treatment plants had made important progress on wastewater treatment (the state is now verifying their performance).

The output-based design encouraged *greater efficiency*. It was up to each municipality to contract the construction of physical works needed to make new connections and the construction or upgrading of wastewater treatment plants—and by using competition in the contracting process, they were able to realize significant savings. Similarly, it was up to utilities to decide how to improve efficiency, leaving them

free to focus their efforts where most effective. Thus, some improved their customer registers while others aggressively pursued delinquent customers, shortened collection times, increased tariffs, or reduced production costs.

Measuring outputs and results fostered *accountability and transparency*. Thus, the State Water Commission used loan resources to develop an auditable statistical methodology to measure implementation progress.

The OBD scheme improved *institutional arrangements*, leading to more transparency, better coordination and planning, and greater accountability. It also generated valuable information on the sector’s performance, providing inputs for budgetary decisions and the design of future programs.

References

- CONAGUA (National Water Commission). 2008. “Situación del Sub-Sector de Agua Potable, Alcantarillado y Saneamiento 2007.” (www.conagua.gob.mx)
- World Bank. 2005. “Mexico: Infrastructure Public Expenditure Review.” Latin America and the Caribbean Region, World Bank, Washington, DC.

About OBAApproaches

OBAApproaches is a forum for discussing and disseminating recent experiences and innovations for supporting the delivery of basic services to the poor. The series will focus 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 the GPOBA, World Bank, or the countries they represent.

To find out more, visit
www.gpoba.org

GPOBA
The Global Partnership on Output-Based Aid