

Wastewater: From Waste to Resource

The Case of PRODES, Brazil

Output-based financing in Brazil to increase wastewater coverage and improve water quality

Context

Water supply and sanitation is the responsibility of municipalities in Brazil. Some municipalities provide services through public operation, while others outsource to private operation. Many of the municipalities receive funding for these projects from the central government through loans from national or international institutions. Before 2001, the central government provided funding for sanitation projects through input subsidies to both private and public entities. These input subsidies aimed to pay for part of the costs of establishing and maintaining wastewater treatment plants (WWTPs). However, these input subsidies were failing to improve sanitation services at acceptable levels. Brazil was facing issues with underinvestment in infrastructure and utility inefficiency due to weak management in the sanitation sector. As a result of the issues in the sanitation sector, key river basins were overly polluted.

The Brazilian federal government sought to increase water quality in key river basins. Since earlier efforts to provide input subsidies were failing, the government decided to instead try to provide output-based grants tied to strict environmental and managerial performance standards set by regional management committees.

CHALLENGE

- Underinvestment, utility inefficiency, and poor management in the sanitation sector created unacceptable water pollution in rivers
- Increase investment in WWTPs
- Stimulate use of regional resource management instruments such as river basin committees

OBJECTIVE

Reduce the level of contamination of watersheds by untreated wastewaters and motivate integrated water resource management systems and programs by creating and empowering watershed regulatory bodies and introducing charges for water use and water resource management plan

Solution

In 2001, the Federal Government of Brazil created the Watershed Cleanup Program (Programa Descontaminación de Cuencas Hidrográficas [PRODES]) through the National Water Agency (Agencia Nacional de Aguas [ANA]). The PRODES program is based on the idea of results-based financing (RBF). RBF is an alternative type of development financing and assistance method. In contrast to conventional development financing that focuses on disbursement of inputs such as grants, loans, or guarantees to be used in construction of infrastructure, RBF focuses on providing funding and incentives for achieved development outcomes and outputs. RBF mechanisms can serve as alternatives to traditional financing that is typically disbursed in advance of delivery. Essentially, the federal government pays service providers for treating wastewater based on certified outputs, instead of financing inputs such as civil works.

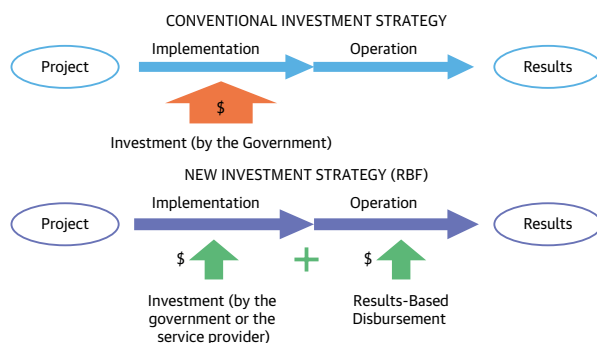
Under PRODES, the ANA agrees to a contract with an eligible WWTP owner, either public or private. Eligible WWTPs are located in river basins with legally established and operational river basin committees. Up to 50 percent of the investment costs for WWTPs can be reimbursed over five to seven years, provided that the quality of the wastewater discharged meets the norms. The sanitation service providers receive a quarterly payment through PRODES as long as treated

wastewater continuously meets certified standards established by the river basin committee, the municipality, and the service provider (all included in the contract agreement). PRODES contracts can go to new treatment facilities or to upgrades at existing facilities such as new processes or increased capacity.

Prodes details and contractual agreements

Eligible to PRODES are the following: (a) WWTPs in priority watersheds; (b) new WWTPs; and (c) capacity or efficiency improvement of existing WWTPs. PRODES contracts are available only to WWTPs in river basins that have existing and operational river basin committees. A project applies to PRODES through three stages. In the proposal registration, the service provider presents a proposal to invest in a treatment facility to the ANA. This proposal includes performance targets, and the river basin committees and municipalities are consulted in regard to the targets. The targets include quantitative targets such as environmental targets and removal efficiency, and qualitative targets such as management and maintenance issues. In the proposal evaluation, ANA decides if the project meets the requirements of PRODES eligibility. ANA also performs technical and financial feasibility due diligence. In the final proposal selection phase, ANA chooses specific projects to sign contracts based on a ranking system (see table 1). The contracts are (a) signed by ANA, the service provider, the river basin committee, and the municipality, (b) include an established amount of payment from ANA for the reimbursement grant, and (c) establish the agreed upon quantitative and qualitative performance standards.

Once the project has a signed contract and is off the ground, a certifying process occurs to ensure that performance targets are being met. The certification is done by self-reporting sent by the service provider and regular audits by ANA to validate in situ the agreed criteria and confirm the results of the



Source: ANA, 2017

TABLE 1. PRODES Selection Criteria, 2015

Criterion	Maximum score
Population served and treatment efficiency	50
Existence of Basin Committee in operation	5
Location of the development in priority basin	15
Municipalities prioritized in the Atlas Brazil	5
Allocation of resources to PRODES by committees	10
Planned development in water resource plans, investment programs, etc.	5
Project situated in municipalities with criticality criterion 1 and 2 of Portaria O62 / ANA, and listed in Annex IV of Res. 601, dated May 28, 2015	10
Total maximum points	100

self-reporting; if the standards are not met in one trimester, a warning is issued. If they are not met in the following trimester, the payment is suspended. If the norms are still not met in the next trimester, the service provider is excluded from the program. This provides strong incentives to properly operate and maintain plants.

The conditional payments linked to the achievement of environmental and managerial performance in PRODES contracts provides a strong incentive for

utilities to increase efficiency and improve environmental outcomes. The project sponsors have a strong incentive to adopt least-cost methods of wastewater treatment. The arrangement encourages a transition from often poorly managed capital-intensive projects to more economical alternatives.

Following the signature of the contract, construction, and operationalization of the WWTP, the PRODES program paying quarterly payments until the agreed amount of construction costs are fully refunded.

Benefits

For the public entity	For the public and the environment
<ul style="list-style-type: none"> Total contribution by ANA through contracts valued over R\$400 million, which has mobilized over R\$1,597 million of investment by service providers 82 projects under contract since 2001 Operational risk is assigned to the service provider The requirement to have legal and operating river basin organizations incentivizes sound regional regulatory management by emphasizing the role of river basin committees and water agencies and devolving the implementation of water management systems to the state level. 	<ul style="list-style-type: none"> Increased provision of wastewater treatment—reduced pollution 7.49 million people are estimated to have benefited from improved water quality Improved sanitation services with higher likelihood of meeting standards In 2007, the federal government estimated that the program had abated 100,000 kilograms of biochemical oxygen demand (BOD) per day The government also estimated that between 2001 and 2007, reduction in pollution had led to a 15 percent decrease in hospitalizations due to water-related diseases in areas impacted by the program.
<p>For the private partner</p> <ul style="list-style-type: none"> Enhances the financial viability of utilities and increases ability to access commercial or development credit Partial payment for cost of construction 	

Key factors for success

- Strict connection between results and financial aid encourages service providers to overcome difficulties related to operational monitoring, maintenance, and staff training.
- To be eligible for funding, the utility must be located within a river basin that has an operating river basin committee. This requirement allows the central government to guide a transition toward a regional perspective of water resources management.
- Strong assistance from the ANA during the certifying process helps providers create high-quality plans.

Lessons learned

By focusing on sound governance and strict output based performance metrics, the Brazilian government was able to improve performance in the sanitation sector. Faced with low investment

in infrastructure, utility inefficiency and poor sectorial management the government created a new approach. In 2001, the government shifted from an input-based development finance model, which emphasized financing and grants for the construction phase of infrastructure, to an output-based model, which provides grants for construction costs only after results are certified to meet rigorous standards. The standards are set cooperatively with the municipalities, river basin organizations, and the prospective service providers, and include both environmental and managerial elements. The final funding comes from the central government and can be terminated if performance falls below standards for an extended period of time. The program has effectively leveraged private financing and improved management and efficiency in the sanitation sector in Brazil.

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PROFILE

NAME

Programa Descontaminación de Cuencas Hidrograficas de la Agencia Nacional de Aguas (PRODES)

LOCATION

Brazil

MAIN INNOVATIONS

Output Based Financing or Results Based Financing

Size

82 projects under contract since 2001



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