

Delivering Water Supply and Sanitation Services in Fragile States

Professionalizing Drinking Water Service Delivery in Small Towns of Haiti

Lessons from the Rural Water Supply and Sanitation Project in the Sud Region (EPAR-Sud)

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This document aims to share lessons learned from the implementation of the World Bank financed component of the Rural Water Supply and Sanitation Project in the Sud Region after its final evaluation.

ABOUT THE PROJECT

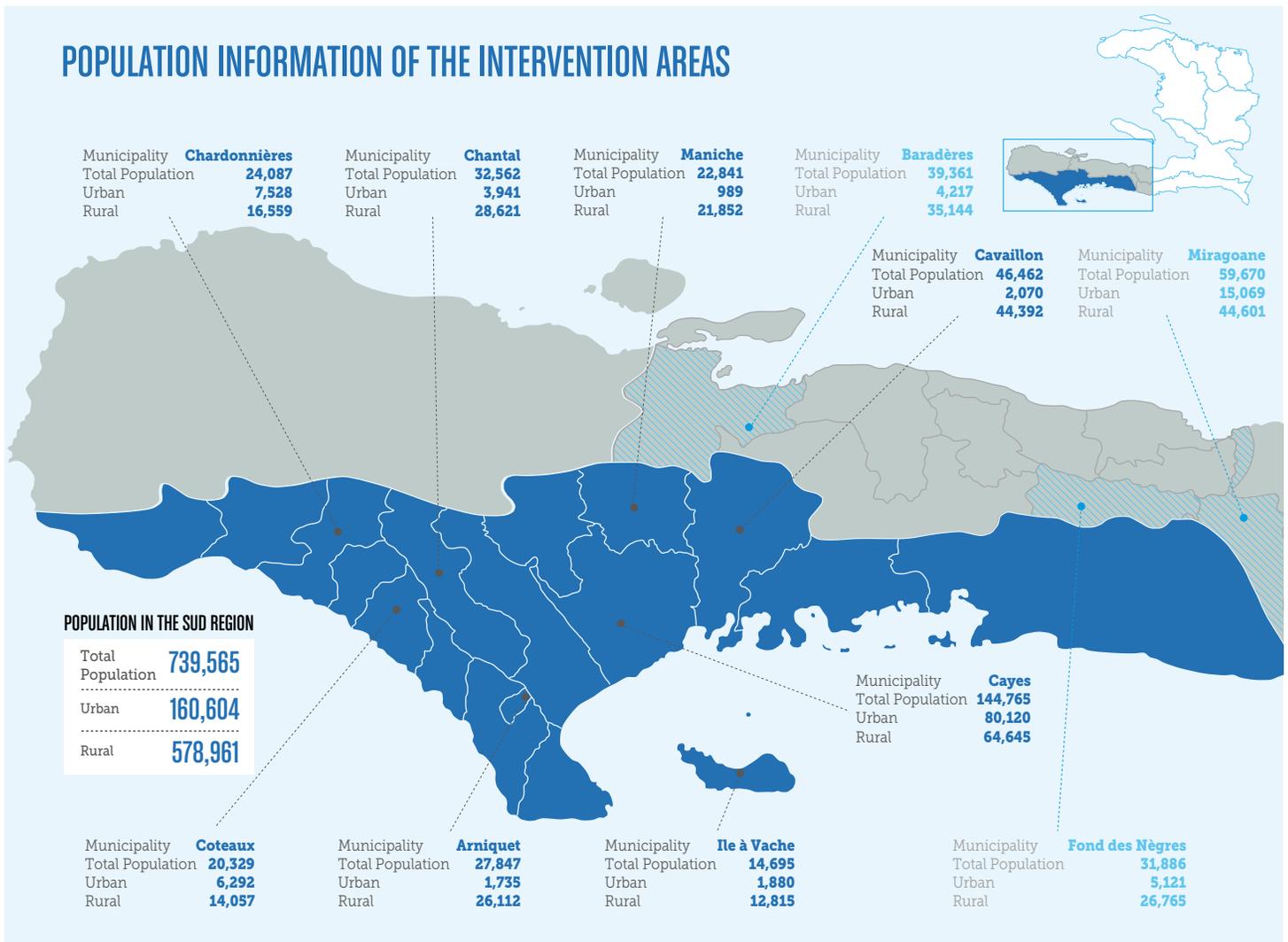
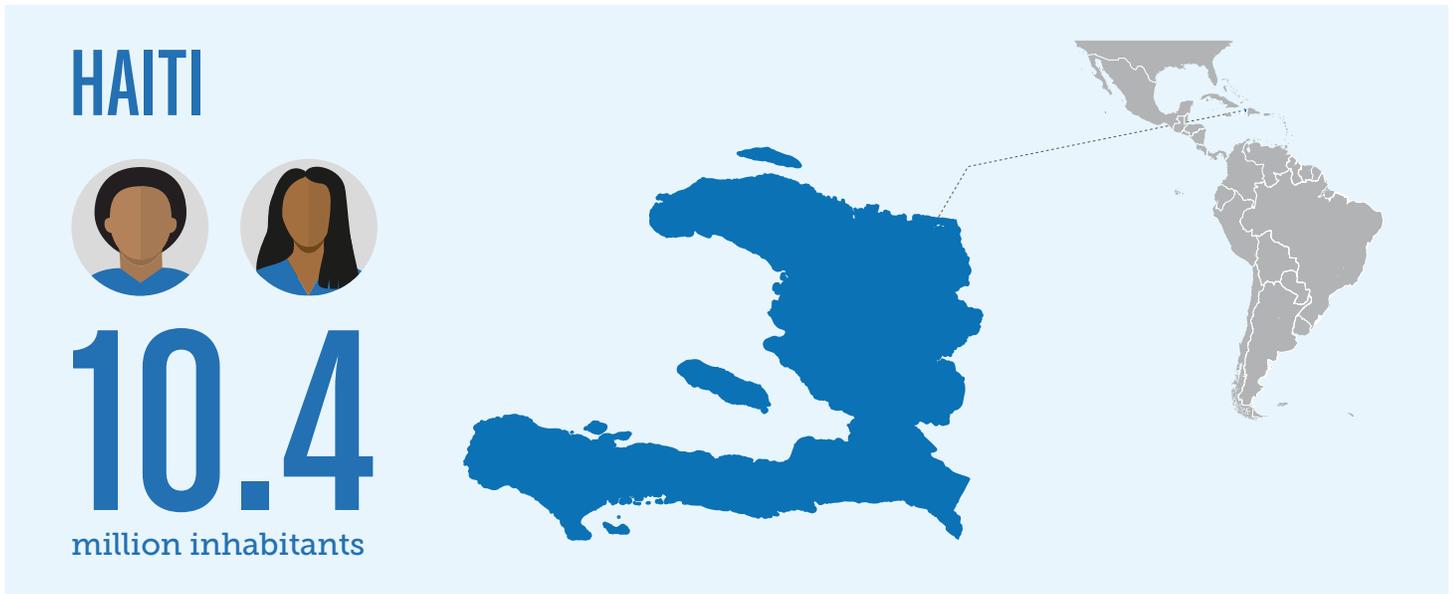
Leading the reform of the drinking water and sanitation sector in Haiti, the Rural Water Supply and Sanitation Project (EPAR by its initials in French) of the National Directorate of Drinking Water and Sanitation (DINEPA by its initials in French) involved the construction or rehabilitation of drinking water schemes in small towns with fewer than 10,000 inhabitants in the Sud region,

specifically, in the regions of Sud and Nippes for the component financed by the World Bank and in the Grande-Anse region for the component financed by the Inter-American Development Bank.

The EPAR project -which ran from August 2007 to November 2013- managed to significantly increase access and improve sustainability of water services in benefiting communities by introducing a radical change in the way these services were provided, all while in a period marked by political instability, devastating hurricanes, the 2010 earthquake and the cholera outbreak.

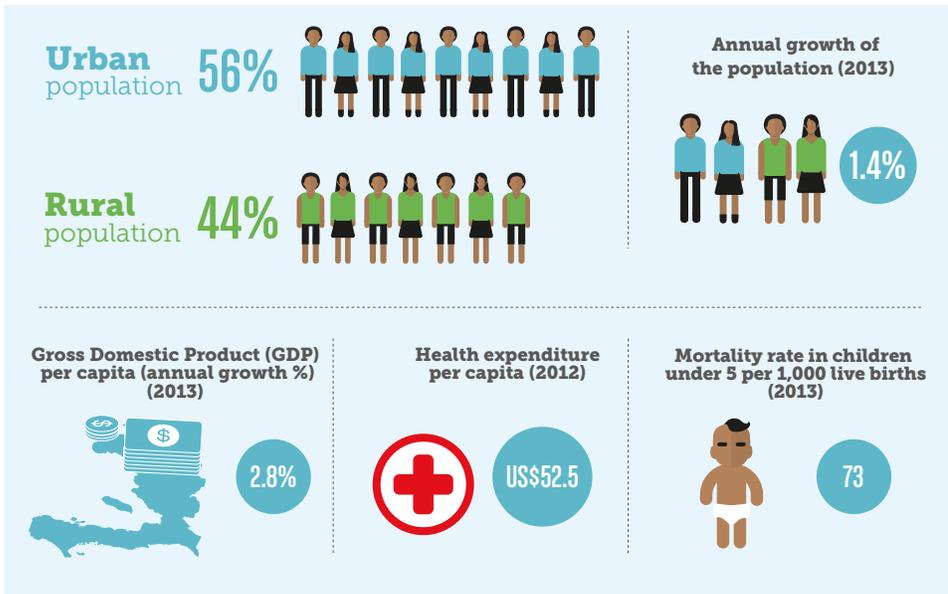


View of Chantal town, Les Cayes District, in the Sud Region, Haiti. Photo “Chantal” by Pandario (CC BY-NC-ND 3.0).



Source: Institut Haïtien de Statistique et D'Informatique. 2012.

Note: The cities shown in the present map are located in the Sud Region, with the exception of Fond Tortue, Fond des Nègres, and St. Michel/Dimizaine which are located in the Nippes Region.



Sources: World Development Indicators (database), World Bank, Washington, DC (accessed November 15, 2014), <http://databank.worldbank.org/>
 * United Nations Development Programme. 2014. Human Development Report 2014.

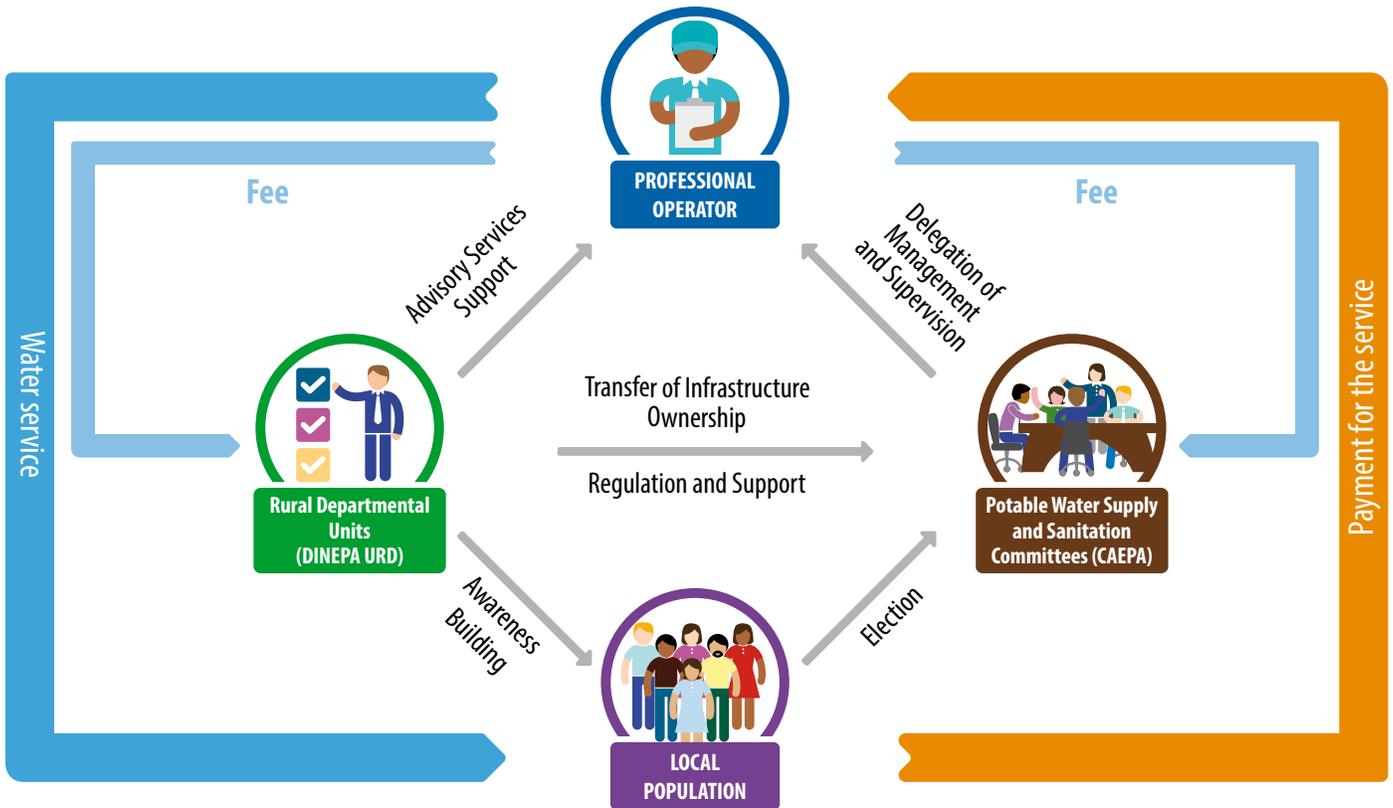
Water management reform in a context of impending crisis

Previous water supply investments in the Sud Region were limited and lacked monitoring from outside the communities. As a consequence water services in this area deteriorated rapidly and the practice of receiving water free of cost became deeply ingrained, compromising even further their sustainability.

Against this backdrop, a management model integrating domestic private sector participation -developed in Benin and Madagascar with the support of the World Bank- was adapted and implemented; the DINEPA established deconcentrated agencies to sustain and supervise service providers; and volumetric billing schemes were introduced. The introduction of this new approach posed major challenges, but demonstrated its potential as a solution for the provision of sustainable drinking water distribution services in small towns of Haiti.

The reform process launched in 2009 facilitated the continuous presence of DINEPA at the regional and local levels with the creation of the OREPAs (Water and Sanitation Regional Offices), the URDs (Rural Departmental Units) and the TEPACs (Community Water and Sanitation Technicians); and the formulation of a new policy in response to the limited results reached by the community-based management models for the provision of sustainable drinking water distribution services in small towns.

This paved the way for the development of a management model based on a user association —the Potable Water Supply and Sanitation Committees [Comité d’Approvisionnement en Eau Potable et Assainissement CAEPA]—; a professional water operator –the OP- contractually bound to the CAEPAs to operate the scheme and collect payments; and the URD, responsible for sustaining and supervising both the CAEPAs and the OPs.

Figure 1: Actors in the EPAR Project Management Model

The local professional operator, a solution for increasing access to sustainable drinking water services

The OPs were selected by a committee composed of representatives from DINEPA, technical assistance personnel from the project and the relevant CAEPA, with a view to ensuring that the OPs selected would be accepted by the users and that the selected candidate possessed the required entrepreneurial skills. The predefined selection criteria included, among other elements, being a native of the town and being able to submit an operating business plan. This process identified operators from the local population with diverse professional backgrounds, including teachers, lawyers, fishermen and public servants. Selected OPs received a basic technical and managerial training. As a result

most of them now demonstrate an adequate level of technical knowledge, but still require capacity building in finance and management.

The EPAR Project was the first of its kind with respect to integration of a private operator in rural areas of Haiti. As such, its implementation required ongoing adjustments. It became evident that operating a scheme can only be a supplementary activity of the OPs and will not be, in most of the cases, their main source of income. They work with half a dozen employees: plumbers, secretaries, kiosk vendors. They manage a customer base of 100 to 300 households with metered water connections, (although a flat rate is charged in some cases), and a number of kiosks where payment is made per number of purchased *bokit* (19 liter container).



Kiosks constructed by the EPAR project. Photo Jean-Martin Brault.

Improved access to water

Without a doubt, this project has improved access to drinking water in benefiting communities. First, it has laid the necessary foundation for regular chlorination of the water. The SIS-KLOR¹ monitoring program, which was established under the reform and has facilitated monitoring of residual chlorine over time, demonstrated that the OPs regularly perform chlorination. Ongoing provision of free chlorine by DINEPA and monitoring by the URD will help sustain this result over time.

In terms of access, the percentage of households connected to the water distribution system rose from 8 to 20 percent² in benefiting communities, while the average in small towns and rural areas of

the country in 2011 was 5 percent. If kiosk users (21 percent of households) and those purchasing water from neighbors with a household connection (10 percent) are added to this figure, the total population that have gained access to safe drinking water through a network managed by a professional operator would be 50,000 people. This rate will increase further once the new requests for connections recorded are met: 65 percent of kiosk client households have indicated that they are willing to connect.

The project provided access to water for an additional 10,000 persons living in communities where the water distribution system was not managed by an OP, which means that around 51 percent of the households located in the targeted communities are enjoying access to safe drinking water thanks to the EPAR project.

1 SIS-KLOR is a real-time monitoring initiative whereby mobile water testing teams are able to transmit by SMS back to DINEPA the results of their sampling in camps and communities

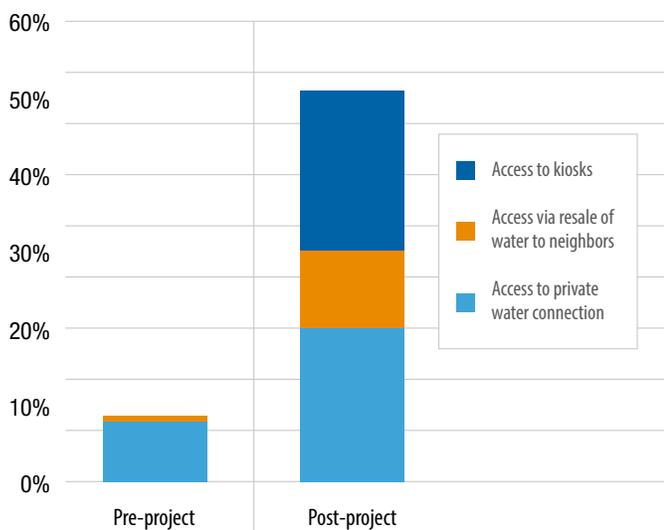
2 Percentages calculated based on the registry of household connections of the professional operators and CAEPAs running the systems during the execution of the project from August 2007 to November 2010.

The connection fee or water rate charged was not the main reason advanced by households for not requesting a household connection, which indicates that this increase in access was achieved while maintaining affordable rates for the communities.

The project improved access to water for 60,000 people, that is, 51 percent of the residents of this area.

However, kiosks were not used as frequently as originally anticipated, as it was expected that each kiosk would serve approximately 150 households, in accordance with expressed user demand. In fact, management of these facilities proved challenging for the operators, who gradually abandoned them. The operators were unable to provide uninterrupted service at each kiosk, and users who were unwilling to pay for the service, found an easy way to obtain water by forcing the abandoned kiosks open, without the operators having the means to persuade them to discontinue this practice. As a result, only 50 percent of the kiosks are being managed by the OPs, and it is estimated that 15 percent of the households are using the abandoned kiosks to obtain water.

Figure 2. Trends in water access following implementation of the EPAR-Sud project



Source: Opa Diallo and Raphaël Torquebiau, "L'évaluation de l'implication du secteur professionnel local dans la desserte en eau en milieu rural en Haïti et évaluation de l'adaptabilité de ce nouveau modèle de gestion et de la facturation au volume à l'échelle nationale. Haïti: 2013."

Professional, local, and cost-effective management

The operators have limited accounting skills, engage primarily in cash transactions that most often are not recorded and, when generated, financial statements are of very poor quality and usually limited to a cash balance. However the reconstruction of their financial statements demonstrated that they are achieving tangible results: with an average sales volume of US\$23 per year, per connected household or kiosk client, and US\$30 for the most efficient professional operators, their compensation is expected to account for 25 percent of receipts.

Table 1: Kiosks installed and rehabilitated in the Sud region

Scheme	Number of kiosks installed or rehabilitated	Number of kiosks functioning at project closure
St. Michel/Dimizaine	9	5
Cavaillon	33	10
Simon	2	1
Maniche	9	4
Chantal	13	13
Arniquet	6	2
Coteaux	22	5
Ile à Vache	6	0
Fond des Nègres	12	12
Chardonnières	11	3
Total	123	55

Source: Elizabeth Kleemeier, EPAR project Implementation Completion Report. Washington DC: World Bank, 2014.

*Note: All of the above schemes are located in the Sud Region, with the exception of Fond des Nègres, and St. Michel/Dimizaine which are located in the Nippes Region. Non-functioning kiosks have been closed mainly because of an insufficient number of paying customers to make service viable at these water points.



Standpipe rehabilitated by the EPAR project. Photo Jean-Martin Brault.

These resources are used primarily to cover staff costs (41 percent), which still appear to represent an area for potential savings relative to actual operational requirements. However, 8 percent of the costs relate to infrastructure work, a significant improvement relative to the pre-project situation when almost no maintenance work was ever done on the schemes by the CAEPAs. Although these works most often entail repairs and no actual maintenance program is in place, the operators have the necessary potential to become proactive in infrastructure management.

The operators have also demonstrated their capacity to provide new household connections and further increase access to water services. However, this materialized as a result of the free provision of a batch of meters under the project. The price of the water meters in Haiti –above USD 100–, the short contractual period that the OP have to recover their investments –3 years– and the lack of support they receive from the CAEPAs and the URDs to reduce the delinquency rate, are preventing professional operators to further increase their client base. A long-term solution will have to be proposed by DINEPA to overcome this barrier, for example extending the duration of the management contract and/or leasing this equipment or through subsidized procurement.

The operators attained the break-even point and have the resources to improve sustainability and develop their services.

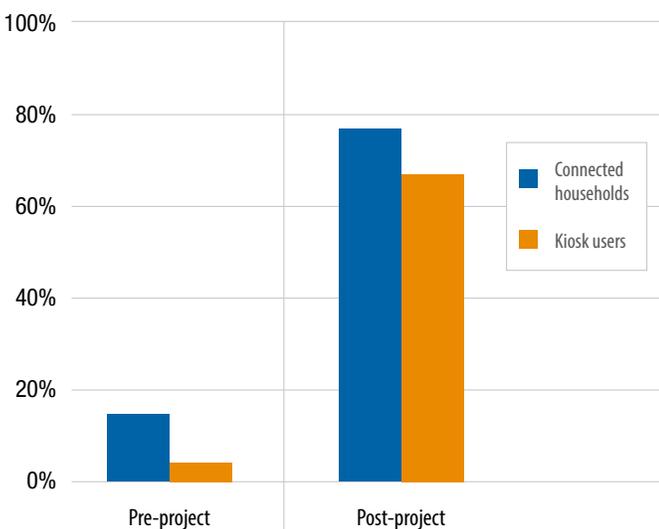
According to their contractual obligations, the OPs must also pay a fee equivalent to 15 percent and 4 percent of their monthly sales to the concerned CAEPA (to cover their operation costs and for the creation of a renewal fund) and to the OREPA (to cover the expenses related to the URD's sustained supervision effort) respectively. Nonetheless, the OREPAs have yet to open the required bank account to receive these funds and payments to the CAEPAs, which are not made systematically, and are calculated as a percentage of the collected invoices instead of the invoiced water volume. Moreover, these payments, when done, are usually made in cash and not registered in the accounting books of the CAEPAs.

All told, the results of the evaluation show reasons to believe in the potential of the new management model introduced: Professional operators have been able to cover their operating cost, make some profit and finance corrective maintenance investments for around three years, while increasing the access to safe water through household connections. Moreover, they are providing the service to the satisfaction of the benefiting population.

In this sense, field surveys show that users in the towns that piloted this solution are very satisfied. In addition to the very high level of user confidence in the quality of the water, users overwhelmingly support the professional operator management model, including in towns where the operator's contract has been terminated and management responsibilities have been assumed by the CAEPA.

80 percent of customers of professional operators expressed their satisfaction with the service.

Figure 3: Percentage of people satisfied with the quality of water



Source: Opa Diallo and Raphaël Torquebiau, "L'évaluation de l'implication du secteur professionnel local dans la desserte en eau en milieu rural en Haïti et évaluation de l'adaptabilité de ce nouveau modèle de gestion et de la facturation au volume à l'échelle nationale. Haïti: 2013."

Challenges in achieving sustainability

Access to water services through individual household connections was expanded through the widespread installation of meters to facilitate volumetric billing. However, volume-based payment schemes could not be mandatorily applied across the board. Rehabilitated schemes posed the first challenge, as a number of former users refused to have meters installed. Having successfully blocked this initiative, they managed to prevail upon the CAEPAs and the other users to join their cause. As a result, the users served by some water schemes are not being billed based on volume of water used, despite prior commitments made by the communities

and the general agreement among the surveyed population about the benefits of volumetric billing in terms of fairness and ability to reduce water wastage.

In comparison, in light of the infrequent use of the kiosks and the low revenue collection levels for services provided via individual household connections, the practice of reselling water to neighbors should be reexamined. Some 37 percent of households with a connection sell water to their neighbors, and the prices are similar to the ones charged for use of the kiosks. This practice, which had not been formally included in the project's policy, provides 10 percent of households in targeted communities with access to potable water.

The revenue collection rate for professional operators has reached an average of 50 percent, up to 66 percent in the best of the cases, a rate that is still too low to ensure that water management can suffice as the OPs sole source of income. Moreover, this rate is enough for the OPs to make some profit thanks to the provision of free inputs such as chlorine or an initial batch of meters by DINEPA.

The success or failure of the professional operators is largely dependent on the CAEPAs, organizations to which they are bound by an operating agreement and are legal entities elected to manage the constructed water distribution systems. In fact, these committees have often sided with users against the professional operators, not only in particular with respect to the rejection of a payment system based on volume used, but also with regard to cases of illegal connections or issues unrelated to the service. This is because the CAEPAs see themselves more like a user association responsible for defending interests of the clients of the OP than as the organization responsible for the provision of sustainable safe water distribution services in the long run through a delegation agreement with a professional operator.

The operators need firm support from the authorities in the areas of training and regulation. This is one of the goals of the reform with the creation of the URDs, which should provide specific training to the professional operators on technical and management aspects, and act as an independent mediation agent between the CAEPAs and the OPs. However, while the operators welcomed this support, it could not address all their shortcomings. The training needs of the CAEPAs also remain unmet. Furthermore, owing to the lack of human and logistical resources, the URD was unable to assume its role as regulator in the most contentious cases where the CAEPAs had imposed their will. The appropriate role of these three stakeholders still needs to be adjusted and their relations better formalized. In one case, a CAEPA stripped one of the professional operators of his functions without the URD's knowledge. All the other professional operators are seeking clarification regarding the conditions governing disconnection or possible imposition of fines on customers.



Professional Operators' Team in Arniquet. Photo Jean-Martin Brault.

Availability of Water Resources

Assumptions made with respect to available water resources were inaccurate. Two sources that supply water to the schemes experienced longer low-flow periods than anticipated, thus leaving the schemes with an inadequate supply for three months. This situation will worsen with the expected increase in demand. Ongoing monitoring of the flow from the sources instead of the provision of a mere inventory of levels or separate measurements is necessary. Furthermore, no effective measure for protecting the sources was put in place, despite the emphasis placed on water quality by the project.

CONCLUSIONS AND LESSONS LEARNED

- As a result of the project, there will be a real and sustainable increase in the water supply to Haiti's populations of benefitting communities of the Sud Region, thus providing improved access for most households.
- The public-private partnership model used can be considered a success, even though more time is needed to assess its sustainability and prove that the operators can provide a service in a challenging environment.
- The operators do not yet have sufficient contractual security to allow them to engage in long-term planning in terms of business activities or infrastructure maintenance.
- Although the users overwhelmingly support the private operator model, these operators expend a lot of energy negotiating with them to obtain payment for connections or usage and manage local political interference.
- Increasing the number of kiosks was not the appropriate solution for increasing access, and a large number of them have gradually been abandoned by the operator. However, despite not being included in the project, the practice of reselling water to neighbors has the potential to achieve the same objectives.
- While the recruitment process paved the way for the introduction of operators who were viewed as legitimate by the users, it could not attract candidates with the requisite financial and management skills. The URD needs time to provide the support required to ensure that these operators improve their skills sufficiently.
- The conflicts that arose on the ground between the professional operators and the CAEPAs or other local actors could not be resolved through the intervention of the URD, which lacks the resources and an adequate regulatory structure to allow it to fully assume its role as regulator. The appropriate role of these three stakeholders still needs to be adjusted and their relations better formalized.
- The assumptions made regarding available water resources were inaccurate, and several towns experienced unexpected periods of water shortage. This situation underscores the need to go beyond merely providing an inventory of resources by conducting ongoing measurements of their available flow, and to identify effective methods for protecting the sources.
- A long-term solution must be implemented in order to make the meters more affordable to the operators and thus enable them to continue expanding their customer base.



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