

Case Study— Mercado Regional Del Atlántico, Colombia

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Key Characteristics of Aggregation Case Study

Mercado Regional del Atlántico, Colombia	
Context	<ul style="list-style-type: none"> • Upper-middle-income country • Aggregation covering urban and rural areas • Low level of water supply and sanitation (WSS) performance
Purpose	Performance, professionalization, economic efficiency
Scope	WSS functions and services
Scale	<ul style="list-style-type: none"> • Administrative boundaries • Localities covered: 15 for water and 8 for wastewater • Population covered: 2,173,616 inhabitants for water and 1,945,277 for wastewater • Coverage: 99% for water and 88.6% for wastewater • Connections: 475,349 for water and 393,090 for wastewater
Process	Voluntary and incentivized
Governance	<ul style="list-style-type: none"> • Delegated • Public-private partnership (PPP) • Decision making: according to the PPP contract provision • Asset transfer: assets remain the property of municipalities and are transferred to the operator for the duration of the delegation contract • Liability: liabilities and debts from previous operators are not taken over by the private operator • Staff transfer: none • Clear entry and exit rules as stipulated in the PPP contract
Outcome	Positive, including lower marginal costs
Findings	Strong cooperation between municipalities and operator made easier by clear aggregation institutional arrangement (ownership, duties); good reputation and achievements of operator that contributed to acceptance from population, with new municipalities joining; accountability efforts (awareness campaigns, meetings w/social leaders, creation of social control committees); utility champion and governance leader

The MERCA (Mercado Regional del Atlántico) is the first regional scheme in Colombia to be granted the status of regional market by the Water and Sanitation Regulatory Commission. The aggregation of WSS services took place gradually, over two decades, as the private company Triple A signed 10 operations contracts with the 15 municipalities in the governorate. The regionalization, which was financially supported, acted as a Big Push and delivered some benefits in terms of service coverage, water quality, and continuity, as well as collection ratio. This outcome was made possible thanks to the stable support of a local champion, the existence of a large city acting as a regional nucleus, and strong accountability mechanisms.

An Aggregation Trend Supported by the Successive National Development Plans but with Limited Success

In Colombia, the water sector policy has set aggregation as one of the strategic paths to follow to improve service quality, given its potential to generate economies of scale through the aggregation of users. As a result, the last four National Development Plans (NDP) have all included references to aggregation. The 2002-06 NDP, which provides guidelines for the supply of public services, establishes for the first time that the government must create incentives for WSS utilities to invest in aggregation schemes. The 2006-10 NDP reinforces the WSS aggregation trend by linking it with the implementation of departmental water plans (*planes departamentales de agua, or PDA*) to achieve effective coordination between national, departmental, and municipal levels to improve service quality, achieve higher control of resource allocation, and allow more effective management of financing sources. The plan also allows the possibility for the General Participation System (Sistema General de Participaciones, or SGP) to directly transfer services to service providers, as an incentive to aggregate. The 2010-14 NDP continues to acknowledge the importance of aggregation by creating the possibility of implementing regional schemes for

service provision in municipalities of categories 4, 5, and 6,¹ including their rural areas, through exclusive service zones. Furthermore, it allows the definition of unified prices for regional markets of non-interconnected systems served by the same provider, under the supervision of the Water and Sanitation Regulatory Commission (Comisión de Regulación de Agua Potable y Saneamiento Básico, or CRA). The current NDP (2014-18) further develops the guidelines set by previous plans for implementing aggregation. It establishes that the national government and the departments will promote the creation not only of regional markets, but also of schemes of municipalities and metropolitan areas. It also establishes that the national government and the departments will strengthen regulation, monitoring, and control processes in the WSS sector where aggregation is applied, to generate incentives to increase productivity and efficient management of service providers. In addition, CONPES 3819 of 2014 (Policy to Consolidate a System of Cities in Colombia) has included, as one strategy of its action plan, the development of regulatory and legal instruments to incentivize aggregation and encourage mayors to create unique public service authorities at an intermunicipal level. As a result, CRA issued a resolution in 2013, in which it defines the concept of the regional market as “a set of users served by the same WSS service provider through non-interconnected, interconnected or mixed systems, in a specific geographical area larger than one municipality and within a department or bordering departments, whose joint provision allows for the improvement of the coverage, quality and continuity conditions in public services.”² To date, only one company has applied for and received approval to become a regional market, although there were 20 regional service providers in Colombia in 2013. The limited success of regional markets development can be explained by the lack of commercial attractiveness of loss-making water systems, by the difficulty for operators to meet stringent performance requirements at the beginning of the contract when they

are just starting to providing service in remote areas with low user payment capacity, and by the reluctance of municipal administration (a) to lose control over WSS provision and (b) to provide financial support to WSS operators.

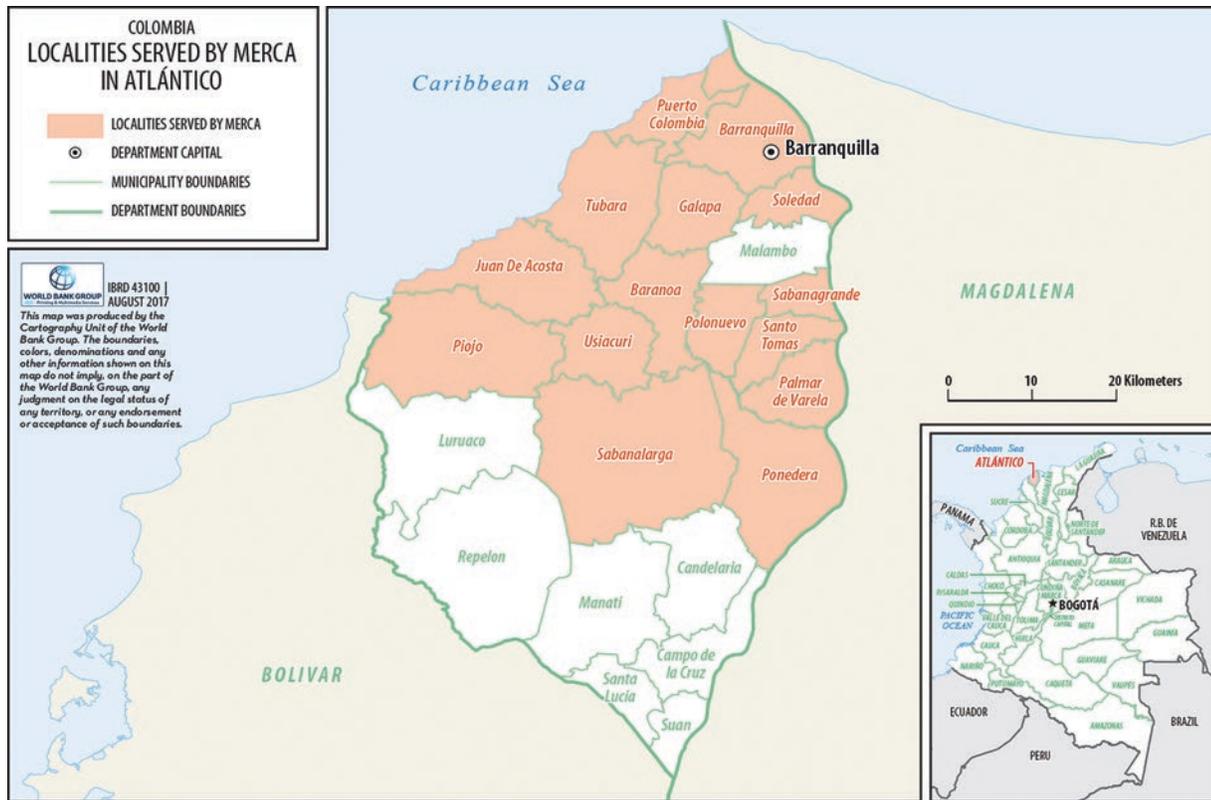
A Gradual Aggregation Strategy Supported Financially

The Mercado Regional del Atlántico (MERCA) is an aggregation initiative structured around a private WSS service provider, Triple A. The initiative gradually expanded its service area and currently supplies 15 municipalities with water services and 8 with sewage services, which makes it one of the largest aggregation schemes in Colombia. The regional market of MERCA is located in the Atlántico department and represents 2.2 million inhabitants. It encompasses the following

localities: Baranoa, Barranquilla, Galapa, Juan de Acosta, Palmar de Varela, Pioj6, Polonuevo, Ponedera, Puerto Colombia, Sabanagrande, Sabanalarga, Santo Tomás, Soledad, Tubará, and Usiacurí (map 1).

The incorporation of these municipalities into the regional scheme happened gradually. In each instance, the municipality was incorporated to address a critical situation with regard to WSS services provision—most notably, a lack of infrastructure maintenance and a low quality of water. (See table 1.) Under the guidance of the governorate and considering infrastructure projects under a regional approach, municipalities decided to adjust their service provision scheme accordingly to allow improvements in terms of coverage, water quality, and continuity. Barranquilla joined in 1992; Puerto Colombia in 1997; Soledad and Galapa in 2002; Sabanalarga in 2004; Sabanagrande, Santo Tomás,

MAP 1. Localities Served by MERCA



Source: AAA.

TABLE 1. Service Provision Indicators Before the Aggregation Process

Municipality	Year operation started	Water coverage (%)	Sewage coverage (%)	Micrometering coverage (%)	Continuity (hours/day)	IANC (%)	Water quality	Collection rate (%)
Puerto Colombia	1997	50	N/A	0	N/A	70	N/A	N/A
Soledad	2002	43	41	0	N/A	N/A	N/A	N/A
Galapa	2002	N/A	0	0	N/A	43	N/A	N/A
Sabanalarga	2004	39	30	0	1	N/A	N/A	N/A
Baranoa	2005	62	0	0	6.5	66	N/A	N/A
Polonuevo	2005	68	0	0	9.6	N/A	N/A	N/A
Sabanagrande	2005	69	66	0	18	77	N/A	N/A
Santo Tomás	2005	45	40	0	2	N/A	N/A	N/A
Juan de Acosta	2008	77	0	94	N/A	63	0.84	35
Tubará	2008	80	0	N/A	N/A	82	0.57	32
Usiacurí	2008	80	0	98	N/A	80	3.87	16
Piojó	2009	100	0	99	N/A	68	N/A	28
Palmar de Varela	2013	85	0	0	N/A	76	N/A	30
Ponedera	2014	100	0	32	N/A	69	0.86	N/A

Source: Triple A.

Note: IANC = El Índice de Agua No Contabilizada (Nonrevenue Water Index); N/A = not available.

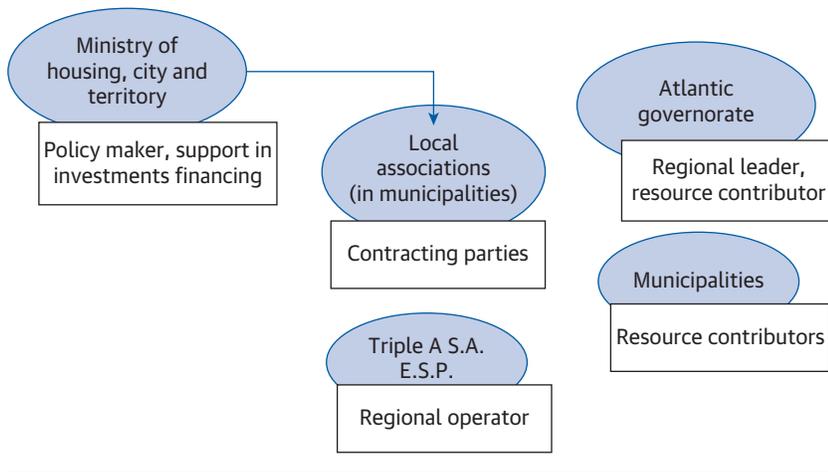
Baranoa, and Polonuevo in 2005; Tubará, Juan de Acosta, Usiacurí, and Piojó in 2008; Palmar de Varela in 2013; and Ponedera in 2014.

In 2004, the new governor of the Atlántico department set the improvement of the WSS sector as one of his main objectives. He then created a position of water and sanitation secretary within the governorate; the secretary was supported by a multidisciplinary team hired specifically for that purpose. The governorate supported contract assignment from the existing operators to Triple A. Similarly, the governor approached Triple A and its business group to persuade them to get involved in service operation with guaranteed financial support from the governorate to fund necessary investments. That financial support acted as a Big Push that helped WSS services escape the low-level equilibrium trap. The following governor maintained the same policy and continued supporting the development of the regional scheme, thus providing long-term

stability and leadership to the process. Municipalities were incorporated into the regional scheme in response to specific situations. (See figure 1.)

In light of the operation difficulties it was facing, the operator of aqueduct and sewage services in Sabanalarga offered to assign its existing contract with the municipality to Triple A. The agreement, in which the municipality acted as the contracting party, was signed in June 2004. It included operation and investments in WSS infrastructure as well as some complementary activities. Its term was expanded from 20 to 30 years. Eighty-five percent of the investment funds would come from municipalities through a trust fund. The national government and the governorate would also fund 75,000 million Col\$ to be leveraged by the department for a new water source with a regional approach. That water source would supply not only Sabanalarga, but also the municipality of Ponedera (which would sign a

FIGURE 1. Institutional Framework for Service Provision



Source: Author's elaboration.

20-year contract with Triple A in 2014). Gradual improvement targets were established with regard to micrometering, the nonrevenue water index (IANC), and collection.

In Sabanagrande and Santo Tomás, WSS services were provided by an association supported by the governorate. According to the supervising public authorities, this association did not have the capacity to provide adequate services: resources were managed without planning or compliance with financial and accounting regulations. In that context, in 2005, municipalities signed a 19-year contract with Triple A to improve the distribution network infrastructure and service continuity with the support of the Atlántico governorate. Provision costs that were not recovered through billing collection would be paid by municipalities. The national government committed to fund 66,861 million Col\$, and the department 2,930 million Col\$.

In 2005, because of its inability to provide adequate services, the Sociedad Aguas del Norte, which was the WSS operator of the municipalities of Baranoa and Polonuevo, assigned the service provision contract to Triple A. The national government pledged to contribute 9,638 million Col\$ to the WSS infrastructure investment over four years.

ARCOS, the regional WSS service provider of the municipalities of Tubará, Juan de Acosta, Usiacurí and Piojó, opened a public bid to contract with an operator for the operation of and investment in the WSS services. The Ministry allocated 8,146 million Col\$ for the integral aggregation project of WSS services in the four municipalities under a constructor-operator scheme. Mayors pledged financial resources to subsidize investment over 15 years. In 2006, Triple A signed the contract and became the WSS operator for Juan de Acosta and

Usiacurí. Operation started in June 2008 in Tubará and in May 2009 in Piojó. The term of the contract was 16 years, and the time of execution of the works was 9 months.

The municipality of Palmar de Varela joined the regional scheme in 2013 after a public bid for a 20-year contract for WSS services operation and investment. Provision of the water supply started in March 2013, and sewage service provision started in March 2015.

The Creation of the First Regional Market in Colombia

In 2011, the National Development Plan established the possibility for providers supplying regional markets with non-interconnected WSS services to define unified or integrated provision costs according to the tariffs methodology issued by CRA. Considering such a possibility, Triple A applied for a regional market status before CRA, and the application was approved in 2014. As such, the Mercado Regional del Atlántico (MERCA) became the first official regional market in Colombia and was granted this status for a period of 29 years. However, if the number of municipalities under MERCA changes, Triple A is to submit a new

request to CRA for the declaration of a new regional market. The status of regional market entitles the operator to establish a regional user charge, which allows cross-subsidies that will help the operator take on the challenge of developing water supply systems in small municipalities. In the future, Triple A plans to supply rural areas of the municipalities currently forming the regional scheme and to expand its service to other municipalities in the department. The regional scheme status also allows Triple A to benefit from economies of scale with regard to energy and chemical costs, and it facilitates access to qualified personnel, better technology, and better laboratory supplies.

A Successful Aggregation That Faced Several Difficulties

Triple A brought significant improvements to the coverage of WSS services in the Barranquilla district. When

TABLE 2. Evolution of the Coverage Indicator for WSS Services

	Water coverage (%)		Sewage coverage (%)	
	Before aggregation	2015	Before aggregation	2015
Barranquilla	60	100	50	100
Soledad	43	100	41	75
Sabanalarga	39	74	30	61
Puerto Colombia	50	100	N/A	100
Baranoa	62	92	0	32
Galapa	N/A	93	0	48
Sabanagrande	69	96	66	85
Santo Tomás	45	100	40	80
Palmar de Varela	85	100	0	34
Juan de Acosta	77	99	0	N/A
Ponedera	100	70	0	N/A
Polonuevo	68	93	0	N/A
Tubará	80	98	0	18
Usiacurí	80	95	0	N/A
Piojó	N/A	100	N/A	N/A

Source: Triple A.

Note: N/A = not available.

operation started in Sabanagrande and Santo Tomás, collection ratios were low. However, after water quality and continuity improved, the collection ratio increased; it is currently 90 percent. The operator's reputation and management helped Triple A obtain resources to make the required investments to improve and expand infrastructure—which, added to the improvement of operation, social work with communities, and optimization of the commercial scheme, allowed the company to accomplish significant and positive changes in the provision of services. The evolution of quality and coverage indicators for the past years shows evidence of this improvement (tables 2 and 3).

TABLE 3. Evolution of the Water Quality Indicator

Municipality	Water quality (IRCA, %) ^a		Continuity (hours/day)	
	Before aggregation	2015	Before aggregation	2015
Barranquilla	N/A	0.11	N/A	N/A
Soledad	N/A	0.10	N/A	N/A
Sabanalarga	N/A	0.03	1	23.72
Puerto Colombia	N/A	0.16	N/A	N/A
Baranoa	N/A	0.14	6.5	23.08
Galapa	N/A	0.16	N/A	23.7
Sabanagrande	N/A	0.16	18	23.57
Santo Tomás	N/A	0.14	2	23.65
Palmar de Varela	N/A	0.04	N/A	24
Juan de Acosta	0.84	0.18	N/A	N/A
Ponedera	0.86	0.32	N/A	24
Polonuevo	N/A	0.18	9.6	23.89
Tubará	0.57	0.15	N/A	N/A
Usiacurí	3.87	0.11	N/A	N/A
Piojó	N/A	0.38	N/A	N/A

Source: Triple A.

Note: N/A = not available.

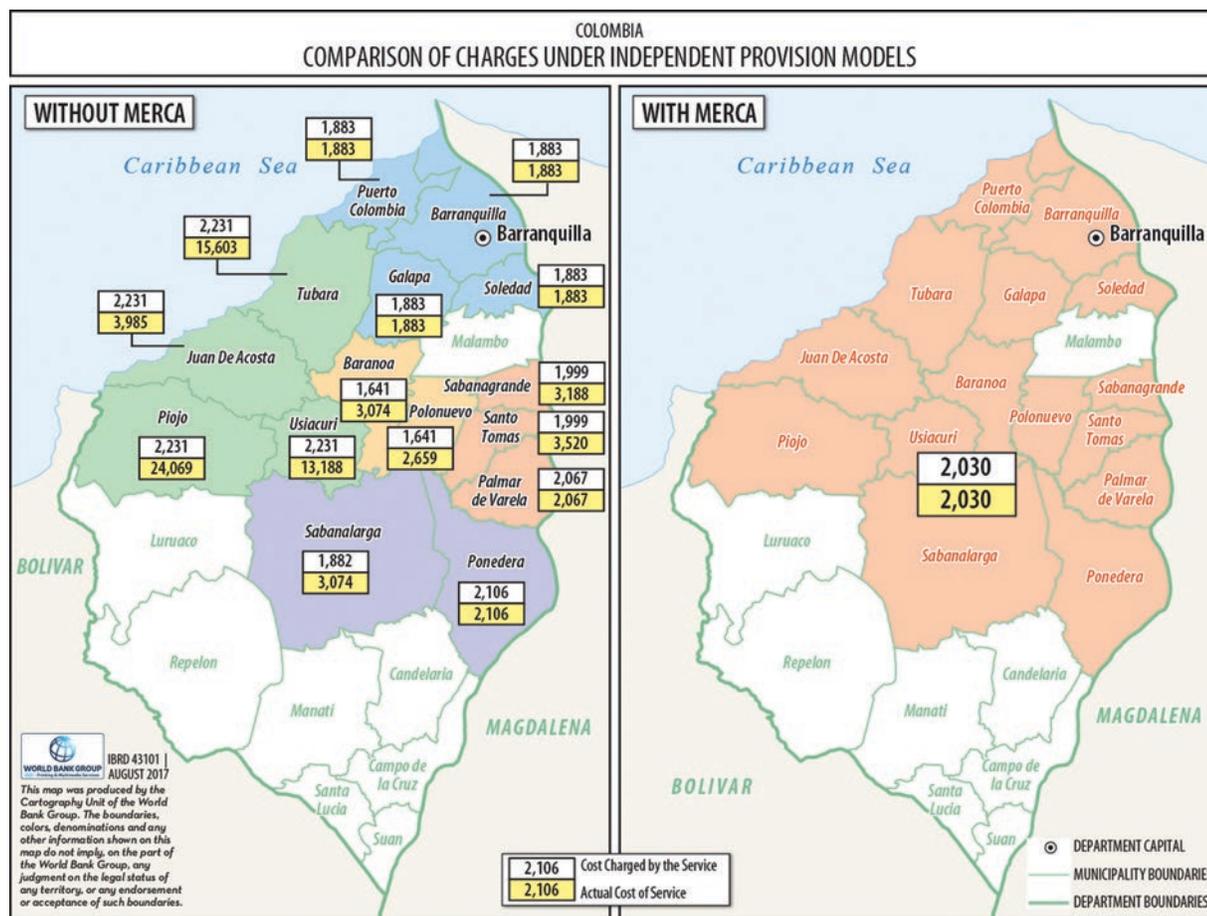
a. IRCA (Índice de Riesgo de la Calidad del Agua para Consumo Humano) is a water quality indicator that combines physical, chemical, and biological variables. It ranges between 0 and 100 according to the following ranges: 0%-5%: Water out of risk; 5.01%-14%: Low risk; 14.01%-35%: Medium risk; 35.01%-80%: High risk; 80.01%-100%: Unfit for health.

Thanks to cross-subsidies implementation under the regional market, small municipalities that face high service provision costs could achieve lower user charges through the aggregation. As a result, the regionalization process was successful in achieving improved equity and economic efficiency. (See map 2.)

The positive outcome of Triple A's aggregation process is based on a number of factors. The operator has demonstrated a strong financial and technical capacity. It succeeded in reducing marginal costs of chemicals, electrical energy, and other goods, allowing tariff reduction mainly in small municipalities. In the contracts signed with the contracting parties

(municipalities, associations of municipalities, municipal utilities), rights, responsibilities, and duties of all parties were clearly established, thus lowering conflict risks. Triple A has developed a strong social policy, which helped build good relationships with communities through well-established accountability mechanisms. Before arriving in a new municipality, Triple A would carry out a demographic characterization to identify the social and security situation and to have a baseline to start with. Before starting service provision and installing meters, the operator would implement awareness campaigns with communities, focusing on topics such as the importance of saving water and of paying water invoices in a timely

MAP 2. Comparison of Charges under Independent Provision Models



Source: Triple A.

manner, how metering works, and other relevant topics. Triple A also carried out annual health brigades and held meetings with social leaders to explain how the company operates, how the WSS systems work, what the company's contractual obligations are, and how utility bills are calculated, among other things. Community leaders are considered allies and act as speakers in some areas. The aggregation also benefited from the existence of a nucleus (a large city—in this case, Barranquilla), which is a development hub and which allows for horizontal cooperation, economies of scale, and cross-subsidies with smaller municipalities.

Despite these positive results, aggregation also triggered some political and economic difficulties during the execution of the various contracts. The operator faced political difficulties related to changes in municipal administrations. In many such cases, incoming mayors request revision of contracts, which involves changes in the initial provisions and creates an additional administrative burden. In addition, when the aggregation process started, municipalities did not transfer financial resources they had committed to, which jeopardized the investments. But with the increasing community acceptance and the improvement in service provision, the municipalities began to do so. Triple A also faced economic difficulties related to municipal tax policy, which were not planned and thus not integrated in the business plan of the company. As such, these tax policy decisions burdened the operator's economic balance.

Aggregation Case Study at a Glance

Key Lessons Learned from the Aggregation Case Study

Lesson 1: Having a Stable Champion throughout the Aggregation Often Improves the Likelihood of Success

In some case studies, aggregation has proven successful because of the presence of a local stakeholder acting as a champion among the aggregating service providers. This is especially true where this champion

helped overcome political resistance. In Colombia, the structuring of the regional aggregation Mercado Regional del Atlántico, which provided services in a large city as well as in small surrounding municipalities, was eased by the involvement of a political leader who facilitated the negotiation with mayors and other political actors. He also encouraged those individuals to fully comply with their responsibilities, such as transferring all resources agreed upon in due time. As a result, the operator—Triple A—has received strong political support from the successive governors of the Atlántico region during the past 12 years, leading to a successful aggregation.

Lesson 2: Aggregation Takes Time to Show Results; Gradual Improvement Strategies With Consequent Focus on Results are Particularly Successful

Both the design and the implementation of aggregation take time; in particular, implementation is a continuous process that can spread over decades. As a result, aggregation benefits also take time to materialize. A gradual improvement strategy with regard to the main purpose of the aggregation has proven successful in many cases because such a strategy spreads over time the efforts and changes to be made, thus not burdening utilities with having to do too much too quickly. It also can allow a greater focus on tracking and achieving concrete results. In Colombia, the operator Triple A was assigned gradual improvement targets in terms of micrometering level, water quality, and billing collection ratio. When operation started in 2004, billing collection levels were very low, but after quality and continuity improvements, the operator was able to increase invoice collection, which is currently 90 percent.

Lesson 3: Having a Large Utility as Nucleus can Work, but Aggregation of Similar-Sized Small Utilities can also be Successful

Most case studies display aggregation examples that group urban and rural settlements. In such configurations, larger urban utilities act as the nuclei around which less-populated, less-profitable, and less

well-performing service providers aggregate. The nuclei help surrounding service providers improve. In Colombia, the presence of a large city in the regional scheme of Atlántico, which is a development hub, allows for horizontal cooperation and economies of scale. It also allows the implementation of cross-subsidies among settlements and thus the balancing of differences among water systems that do not have the same production costs. In small and economically depressed towns, most users have low incomes and purchasing power that would not allow them to access public services otherwise.

Lesson 4: Financial Support and Incentives (A Big Push) are Important to Help Services Escape the Low-Level Equilibrium Trap

To boost the success of an aggregation reform, national and external stakeholders can provide financial support to aggregating utilities to help them achieve the reform's goal. In most cases, those subsidies are used to fund investment programs, thus acting as a Big Push, which helps WSS service providers escape the low-level equilibrium trap. In Colombia, the operator Triple A benefited from investment programs to expand supply capacity that were funded by central and regional governments, representing up to US\$ 50 million. On top of this funding, the financial incentives also took the form of a tax alleviation that was granted to public services companies during the

period in which the law was in force. This tax discount could represent up to 40 percent of the investment amount.

Lesson 5: Strong Citizen Engagement and Clear Accountability Mechanisms Should be Put in Place in Parallel with the Aggregation

In Colombia, the water operator Triple A built a strong social and communication policy with communities before and during the aggregation process. Awareness campaigns were organized before starting service provision and before installing metering. These campaigns focused on water-saving behaviors, appropriate water use, timely payment of utility bills, and other matters. Triple A also carried out annual health brigades and supported training for local social committees. The operator also organized meetings with social leaders to explain how the company operates, how the service provision systems work, what the company's contractual obligations are, how utility bills are calculated, and so on. Meetings with mayors, council members, and active members of the administration were also held.

Notes

1. Law 617 of 2000 establishes that all municipalities must be classified under a category, from 1 to 6, according to their population and their current level of income; categories 4, 5 and 6 correspond to smaller and poorer municipalities.
2. CRA, Resolution No. 628 of 2013.



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