



Work programme

# Increasing Financial Flows for Urban Sanitation

Case study

Bogota, Colombia

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## Part A: Brief introduction to Colombia

### 1. COLOMBIA'S SOCIAL, POLITICAL AND ECONOMIC SITUATION

Colombia has a surface area of 1,141,748 km<sup>2</sup>, being the seventh largest country in America and twenty-sixth in the world.

Politically it is a republic constituted in a unitary state (in contrast to a federal, social and democratic country) with a presidential government system. It has a congress composed of two legislative bodies (Chamber and Senate). The country is divided administratively and politically into 32 departments, which in turn are divided into 1,122 municipalities including Bogotá, the Capital District, and other 5 special districts<sup>1</sup>.

Departmental governments are led by the departmental governor (executive). Each department has its own departmental assembly<sup>2</sup> which issues mandatory ordinances in its department territorial jurisdiction.

Municipalities and districts are presided over by a mayor (executive). Each municipality has its own council (the administrative body that issues rules of municipal scope) made up of councilors.

The President of the Republic, Governors, Mayors, and members of Congress (senators and deputies), the departmental assemblies' members and the municipal councilors are elected by popular vote, for four-year terms. Neither mayors nor governors may be re-elected for successive terms. The presidential re-election was introduced in 2010 and abolished in 2015<sup>3</sup>.

According to official projections by the National Statistics Department (DANE), as of December 2016, Colombia has a population of 48.7 million inhabitants (living in 13.7 million homes), which places the country in 28th place (depending on its size) in the world.

The country is mainly urban, with 76.6%<sup>4</sup> of the population living in municipal capitals (administratively considered as urban). However, in addition to the municipal capitals (that are the areas statistically defined as an urban area), there are some highly consolidated rural populations, so that the population residing in urban areas of the country may be over 80%.

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<sup>1</sup> Second level territorial entities (municipalities) with an independent legal, political, fiscal and administrative regime, with special characteristics that make them stand out or differentiate them from others in terms of their economy, resources, culture or administrative and geographical role. To date they are Barranquilla, Buenaventura, Cartagena, Santa Marta and Riohacha.

<sup>2</sup> Public corporation with regional popular election that enjoys administrative autonomy and its own budget, made up of no less than 11 deputies nor more than 50, elected popularly for a period of 4 years.

<sup>3</sup> Two presidents enjoyed the reelection: Uribe (into which first period the reelection was introduced in National Constitution) and Santos (into which second period it was forbidden).

<sup>4</sup> [DANE-Projections](#) Estimates and projections of total national, departmental and municipal population by area 1985 - 2020

Table 1 Colombia Population, Houses and Households  
2016 (in thousands)

AREA	POPULATION	HOUSES	HOUSEHOLDS <sup>5</sup>
Urban	37,333	10,636	11,024
Rural	11,414	3,052	2,846
TOTAL	48,747	13,688	13,870

Source: Own elaboration based on DANE, Estimation, and projection of the national population, homes, and households 2016.

There are 63 municipalities greater than 100,000 inhabitants, of which 10 have more than 500,000 inhabitants. The country's five main cities, with their respective metropolitan areas, are home to more than 17.6 million inhabitants, 36% of the country total population and 47% of the urban population.

According to the 2016 Quality of Life Survey (ECV), 89.6% of Colombian households had regular (by mains) water service: 97.5% in urban areas and 60.1% in rural<sup>6</sup> areas. In turn, the sewerage service by networks (without taken in account septic tank or other alternatives) reached 77.5% of the country's households, with 93.6% in urban areas and 17.3% in rural areas

Table 2 Colombia Water and Sewerage Coverage 2016

AREA	WATER	SEWERAGE
Urban	97.5%	93.6%
Rural	60.1%	17.3%
TOTAL	89.6%	77.5%

Note: Network coverage only; does not include individual systems.

Source: Compilation based on DANE, Quality of Life Survey 2016.

According to the DANE bulletin on "Monetary and Multidimensional Poverty" 2016, poverty in Colombia has maintained a decreasing trend since 2010: it went from 30.4% at the beginning of the decade to 17.8% in 2016. This means that the country went from 13,719,000 people living in (multidimensional) poverty<sup>7</sup> in 2010 to 8,586,000 in 2016, that is a reduction of 5,133,000 people in that period.

<sup>5</sup> Households are groups of people who meet basic needs from a common budget, while households can group one or more households together.

<sup>6</sup> Classified as "urban" only the municipal capitals, that is to say where the municipal headquarters are located.

<sup>7</sup> The Multidimensional Poverty Index (MPI) is constructed on the basis of five dimensions:

In the municipal capitals, the percentage of people living in multidimensional poverty was 12.1% in 2016, and in population centers and scattered rural areas, the percentage of people living in multidimensional poverty was 37.6%. The analysis by region shows that the regions with the highest MPI are Pacific (not including Valle del Cauca) and the Caribbean:

Table 3 MPI by Region 2015 - 2016

REGIONS	2015	2016
Pacific	33.8%	33.2%
Caribbean	31.2%	26.4%
Central	22.1%	18.0%
Oriental	17.5%	16.8%
Antioquia	18.7%	15.1%
Valle del Cauca	15.7%	12.0%
Bogotá	4.7%	5.9%

Source: Own elaboration based on DANE, Monetary and multidimensional poverty in Colombia 2016.

Two of the variables analyzed for multidimensional poverty assessment are:

- ✓ Deprivation of access to improved water source: a person is considered private if he or she lives in a household does not have water service. In the case of rural households, that means water obtained from a well without a pump, rainwater, river, spring, tank car, water-tank or another source different to a main or a well with pump.
- ✓ Deprivation for adequate excreta disposal: a person is considered private if he or she lives in a household does not have a public sewer system. In the case of rural households, they do not have a flush toilet or low water sanitary service.

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educational conditions of the home, conditions of childhood and youth, health, work, and education.  
 access to household public services and housing conditions.

The results for these variables are presented below, both in the urban and rural areas, for the year 2016:

Table 4 Percentage of households with deprivation in public services 2016

VARIABLE	URBAN	RURAL	TOTAL
Without access to improved excreta disposal	6.4%	21.7%	9.6%
Without access to improved water source	2.5%	37.1%	9.8%

Source: Own elaboration based on DANE, Monetary and multidimensional poverty in Colombia 2016.

## 2. COLOMBIA'S POLITICAL AND ADMINISTRATIVE LEGAL FRAMEWORKS

Colombia is a democratic country; citizens elect governors by voting to represent them. The Political Constitution of 1991 determines all the rules, rights and duties of Colombians and the branches of public power, organized in three branches: executive, legislative and judicial, each of which fulfills different functions and acts independently but harmoniously:

- ✓ Legislative branch: it is in charge of creating the laws, it also has the attribute of modifying the existing ones. It is represented by the Congress of the Republic.
- ✓ Executive branch: responsible for enforcing the Constitution and laws. Its representatives are the president, vice-president, ministers, governors, mayors, and heads of administrative departments.
- ✓ The judicial branch is responsible for administering justice and resolving conflicts between the Colombian population, or between them and the State. Its representatives are the Supreme Court of Justice, the Constitutional Court, the State Council, the Superior Council of the Judiciary, the courts and judges.

### 2.1. Institutional framework

Municipalities are beholden to water and sewerage service in their jurisdiction. They are responsible for ensuring that those services are delivered to their inhabitants through public, private or mixed providers, and can only provide these services directly - that is, through a division of the municipality without administrative independence, rather than having a company - when the general interest so requires, provided that there are no companies interested in providing them.

Although ensuring the provision of public services is the responsibility of the State and, in the specific case of water and sewerage, of municipalities, in Colombia, unlike most countries, public services are provided in open competition, without any barriers, so that any interested party can do so, obtaining the corresponding environmental permits (water concession, discharge permit or landfill permits), which are granted by regional environmental authorities independent of the municipalities governments.



Table 5 Functions of government levels in water and sewerage services

Functions	Nation	Departments	Municipalities
Planning and Policy	MINVIVIENDA DNP	Governor. Units or management of public services	Mayoralties. Public service units or managers
Economic Regulation	CRA	No Competition	Mayoralties. Municipal Councils
Environmental Regulation	ANLA	Regional Autonomous Corporations (CAR)	Municipalities with more than 1 million inhabitants
Water Quality	MINSALUD	Secretaries of Health	No Competition
Surveillance and Control	SSPD, CGN, PGN	No Competition	Personalities
Benefit	No competition	Participation in regional companies	Municipal Public Enterprises. Mayoralties

Source: Own elaboration based on sectorial regulations.

Department' governments have only coordination and support functions in the water and sewerage services. They can provide technical, financial and administrative assistance to public owned service providers or municipalities whose are providing the service directly; coordinate service providers and promote associations of municipalities. Additionally, when a municipality is decertified<sup>8</sup>, departments are responsible for administering, on behalf of the municipality, the resources transferred from the nation to the water sector.

As in the case of other utility services, for water and sewer services, it is up to the Nation to define planning and sectoral policies, economic and environmental regulation and the control and monitoring of service providers. Planning and policies are directly linked to the Ministry of Housing, City, and Territory (MINVIVIENDA) and the National Planning Department (DNP). Economic regulation is exercised through the Drinking Water and Basic Sanitation Regulation Commission (CRA) and the monitoring and control through the Superintendence of Public Services (SSPD).

The Ministry of the Environment is responsible for environmental regulation, but the National Environmental Licensing Authority (ANLA) and the Regional Autonomous Corporations (CAR) are responsible for the environmental licensing the sector works require it, and the latter (Corporations) for monitoring and controlling compliance with environmental regulations by water and sewerage suppliers. Municipalities with more than 1,000,000 inhabitants and Metropolitan Areas have some environmental authority functions in their jurisdictions.

<sup>8</sup> The deficient performance of the municipality in matters such as stratification or the management of resources transferred by the National Government through the General Participation System, in accordance with clearly pre-established rules, may lead to the decertification of municipalities in the drinking water and sanitation sectors.

The Ministry of Health defines water quality rules to water providers but the control is carried out by the departmental health secretariats. Finally, control and supervision of water and sewerage provider is the responsibility of the Superintendence of Public Services.

The economic cost of the services is set directly by service providers in accordance with methodologies defined by CRA; in case of municipal direct provision (without a company) it is exclusively up to the Mayor of the municipality to those costs, but equally subject to the methodologies established by the CRA.

The Municipal Councils are in charge to set the number of contributions and subsidies that affect the economic cost in order to define the final tariffs to apply to service's users and have to define the municipal resources aimed to subsidize the lower strata users.

## 2.2. Legal framework of the drinking water and basic sanitation sector

### 2.2.1. LAW 142 OF 1994

Law 142 of 1994 or " Public Home Services Law " is the law that governs the provision of domestic public services in Colombia, understood as energy<sup>9</sup>, network gas, fixed telephony, drinking water and basic sanitation (sewerage and solid waste management). Although some reforms have been introduced since its enactment in July 1994, the main regulating rules for the water and sewerage sector remains the same.

In article 2 of Law 142 establishes as one of the aims of state intervention in public services:

“... 2.2. Continued expansion of coverage through schemes to compensate for insufficient user capacity to pay.

... 2.3. Priority attention to unmet basic needs for drinking water and basic sanitation.

... 2.9. Establish a proportional tariff regime for low-income sectors in accordance with the precepts of equity and solidarity.

Article 5 established the competence of the municipalities with respect to the provision of public services, among which the following stand out:

“5.1. To ensure that its inhabitants are provided, in an efficient manner, the domestic services of water, sewerage, sanitation, electrical energy, and basic public telephone switched, by public utilities of official, private or mixed character, or directly by the central administration of the respective municipality...

... 5.3. Provide for the granting of subsidies to users with lower incomes, charged to the municipal budget, in accordance with the provisions of Law 60/93 and this Law.

... 5.4. Stratify residential properties according to the methodologies outlined by the National Government...”

Similarly, Article 7 indicates the competence of departments, as support and coordination functions:

“...7.2. To provide financial, technical and administrative support to public service companies operating in the Department or municipalities that have assumed direct services, as well as to companies organized with

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<sup>9</sup> In addition to Law 142 of 1994, there are sector-specific regulations contained in Law 143 of 1994.

the participation of the Nation or Departments to develop the functions of their competence in public services:

7.3. Organize coordination systems of the entities providing public services and promote, when technical and economic reasons make it advisable, the organization of associations of municipalities for the provision of public services, or the celebration of inter-administrative agreements for the same effect..."

Finally, Article 8 establishes the competence of the Nation to provide public services:

"...8.4. To provide financial, technical and administrative support to public service companies or municipalities that have assumed direct responsibility for direct provision, as well as to companies organized with the participation of the Nation or Departments to develop the functions of their competence in public services and to companies whose capital belongs mainly to one or more cooperatives or associative companies of a cooperative nature.

8.5. Ensure that those who provide public services comply with standards for protection, conservation or, when required, the recovery of natural or environmental resources that are used in the generation, production, transport and final disposal of such services.

8.6. To provide directly when the departments and municipalities do not have sufficient capacity, the services covered by this Law..."

#### 2.2.2. DEGREE 1077 OF 2015

"Through which the Single Regulatory Decree of the Housing, City and Territory Sector is issued". It is a decree compiling pre-existing regulatory standards.

By means of this decree, the government regulated the Water and Sanitation Program for Prosperity - Departmental Plans of Water for the Business Management of Water and Sanitation Services (PAP-PDA), which defines them as "A set of inter-institutional planning and coordination strategies formulated and executed with the aim of achieving the integral harmonization of resources and the implementation of efficient and sustainable schemes in the provision of domestic public services of drinking water and basic sanitation,"

The inter-institutional coordination of the PAP-PDAs member are: the department governor, the Municipalities and/or Districts mayors, the Ministry of Housing, City and Territory -MVCT, the Director of National Planning Department - DNP and the environmental authorities with jurisdiction in the municipalities and/or districts located in the territory of the respective department.

It is made up of a Steering Committee (responsible for approving planning and monitoring, incorporating an analysis of available resources, targets, and indicators) and the Manager (responsible for the management, implementation, monitoring of implementation and matters related to drinking water and basic sanitation in the department).

The resources available for the formulation and implementation of the PAP-PDAs may come from the National General Budget, General System of Participations, General System of Royalties, Environmental Authorities, territorial entities budget, investment resources that the Providers want to execute through the PDA, private sector resources

that are incorporated into the structuring and execution of projects within the framework of public-private partnerships.

### 2.2.3. [DECREE 1076 OF 2015](#)

“Through which the Single Regulatory Decree of the Environment and Sustainable Development Sector is issued”. It is also a decree compiling earlier regulations.

With regard to the environmental issue, the head of the country is the Ministry of Environment and Sustainable Development, is responsible for orienting and regulating the environmental planning of the territory and defining the policies and regulations to which the recovery, conservation, protection, regulation, management, use and sustainable exploitation of renewable natural resources and the environment of the Nation will be subject, in order to ensure sustainable development.

The Ministry of the environment is part of the National Environmental Licensing Authority - ANLA, which is responsible for ensuring that projects, works or activities subject to licensing, permit or environmental procedures comply with environmental regulations in a manner that contributes to the sustainable development of the country.

The Sustainable Development Regional Corporations are autonomous public bodies responsible for administering, within the area of their jurisdiction, the environment, and renewable natural resources and promoting sustainable development, in accordance with the legal provisions and policies of the Ministry of Environment and Sustainable Development.

Both ANLA and the corporations are competent authorities to grant or deny environmental licenses, such license is the authorization granted by the competent environmental authority for the execution of a project, work or activity, which according to the law and regulations, may produce serious deterioration of renewable natural resources or the environment or introduce significant or notorious modifications to the landscape.

The sewerage service provider must comply with discharge regulations rules and have the corresponding discharge permit and to have its wastewater treatment and Management Plan – PSMV. Furthermore, it has to control the compliance of non-residential users of the rules of discharge to public sewerage. When it is determined that a user is not complying with that regulation, it must inform the competent environmental authority, providing the pertinent information, so that it can initiate the sanctioning process.

Drains and effluents from industrial plants must be discharged through special networks built for this purpose, in a manner that facilitates the treatment of wastewater, according to the characteristics and classification of the receiving source. Industries may only be authorized to discharge their effluents into the public sewerage system, provided that they comply with the standard of punctual discharge into public sewerage systems.

Any building, concentration of buildings or urban development, tourist or industrial, located outside the coverage area of the public sewer system, must be equipped with systems for the collection and treatment of wastewater and must have the corresponding discharge permit.

Users whose properties or buildings require a special service by the wastewater provider, are required to comply with the current discharge standard and must submit to the service provider, the characterization of it, according to the frequency determined by the Ministry of Environment and Sustainable Development.

The users of the public sewerage service must give notice to the entity responsible for the operation of the waste treatment plant, when an occasional or accidental discharge may harm its operation.

Since more than 20 years the environmental authorities applied rates for use of water and for the direct and indirect use of water sources as a receiver of punctual discharge. For this last the norm defines:

“Remuneration rate for punctual discharges. This is that which will be charged by the competent environmental authority to users for the direct and indirect use of the water resource as a recipient of direct or indirect specific discharges and their harmful consequences, originating from human-or man-made anthropogenic activities and economic or service activities, whether profitable or not.

The remuneration rate for direct or indirect punctual discharges will be charged for the totality of the pollutant load discharged to the water resource. The levy shall apply even to pollution caused above permissible limits without prejudice to the imposition of preventive and punitive measures where appropriate.

The collection of the fee does not imply under any circumstances the legalization of the respective discharge.”

Up to 10% of the income from these environmental rates has to be used to co-financing of studies and designs associated with investment projects in decontamination and monitoring of the quality of the water resource, including elaboration and execution of Water Resources Management Plans, investments in interceptors, final emissaries and domestic wastewater treatment systems.

The proceeds from the remuneration levy for discharges to water are used for investment projects in water decontamination and monitoring of water quality.

To cover the costs of implementation and monitoring of the levy, the competent environmental authority may use up to 10% of the resources collected from the levy. For the above, the competent environmental authorities must make distributions in their budgets of income and expenses to guarantee the specific destination of the tax.

#### 2.2.4. THE TARIFF REGIME

In defining the tariff system, Article 87.3 of Law 142 of 1994 define the principle of solidarity as a basic principle:

“... 87.3 Solidarity and redistribution means that in implementing the tariff system, measures will be taken to allocate resources to Solidarity and Redistribution Funds so that upper-sector users and commercial and industrial users will help lower-sector users to pay for services that cover their basic needs.”

“Solidarity and Redistribution Funds” are budgetary accounts used for the National Government (in the case of energy, gas, and telephony) or municipalities (in the case of water, sewerage and basic sanitation) to allocates the resources to cover the deficits that arise between subsidies and contributions in the rates of utility services.

Law 142 (art. 89.1) established that for all utility services the maximum contribution factor could not exceed 20% of the economic cost of service and subsidies could not exceed 50% of the economic cost of service for stratum 1, 40% for stratum 2 and 15% for stratum 3.

Although the above percentages have been maintained for energy, gas and telephone services, in the case of water, sewerage and basic sanitation services they have undergone substantial changes by subsequent laws that left the contribution factor without limit, increased the maximum subsidy of stratum 1 to 70% and established that it is the responsibility of municipal councils to define (at least every five years) the specific percentages of both contributions and subsidies to be applied in their jurisdiction.

#### 2.2.5. THE STRATIFICATION REGIME

Colombian socioeconomic stratification is a classification of the households, based on the residential properties in which it lives<sup>10</sup>, into six groups or strata, based on the concept that quality and characteristics of the housing and its surroundings are a good determinant or reflection of its price and therefore of the family's ability to pay.

The stratification system, despite multiple legal and regulatory provisions to which it has been subjected, has undergone minimal methodological or conceptual variations since its initial formulation by Decree 2220 of 1993.

In practice, the vast majority of the rules that have been issued on this matter have only corroborated or clarified the existing rules, and in essence, have limited themselves to extending the deadline for mayors to adopt the new stratifications.

##### 2.2.5.1. RESPONSIBILITIES CONCERNING CLASSIFICATION

The user classifications in strata are the result of studies that must be carried out by municipal and district mayors.

Stratification studies can be carried out directly by the Municipality, or contracted with third entities, using methodologies designed and supplied by the National Planning Department (DNP) and further by the National Administrative Department of Statistics (DANE).

Stratification is not a methodology for classifying families or households but rather housing, reflecting the inhabit families' ability to pay.

In accordance with current regulations, stratification studies must be carried out every five years, but can be carried out outside of these limits when natural phenomena occur (floods, geological crack, landslides, earthquakes, etc.) or social (amongst those found, loss of study due to technological or systemic problems, change of local administration without connection, by assault of groups, etc.).

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<sup>10</sup> This mandate excludes indigenous settlements located in the rural areas of municipalities and districts, which must be classified according to their socio-economic conditions, taking into account their own cultural aspects.

2.2.5.2. PERMANENT UPDATING OF CLASSIFICATIONS AND THE ROLE OF HOME UTILITIES

During the five years of validity, it is necessary to keep the stratifications up to date to incorporate changes resulting from claims of users and owners or substantial changes in the urban or rural environment and to include new developments (residential real estate) with their respective strata.

Both, the studies and their updating, are co-financed locally in equal parts by the utility companies serving the municipal area and the local government.

3. WATER AND SANITATION SECTOR

For the development of this numeral, the information contained in the Single Information System - SUI<sup>11</sup> -, which is the official system of the domestic public services sector in the country that collects, stores, processes and publishes information reported by the provider companies and territorial entities, will be used mainly.

3.1. Coverage and results achieved

3.1.1. SUBSIDIARY AND CONTRIBUTORY SUBSCRIBERS

In 2016 of the 13.48 million subscribers of the water service reported by the providers, 10.36 million subscribers (households) belonging to strata 1, 2 and 3 that received subsidies, 1.69 million subscribers (households) of upper strata (5 and 6) charged with contribution and remaining 1.43 million are official or stratum 4 residential subscribers who do not receive subsidies nor pay contributions.

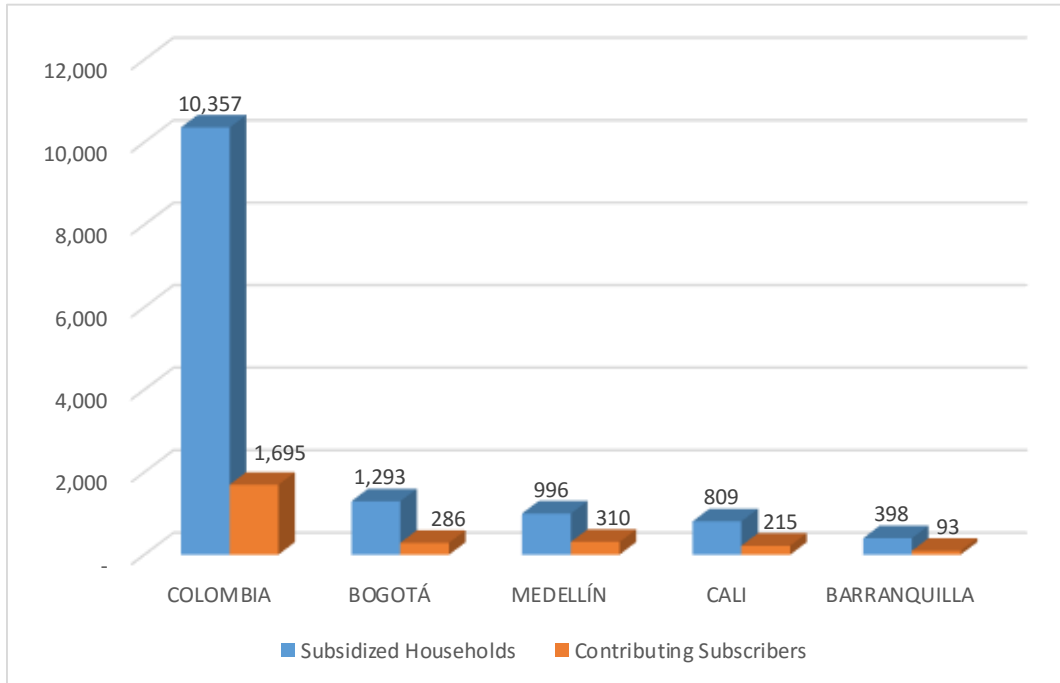
From figure 1, it can be observed that 12% of subsidized users are located in Bogotá, which has 17% of the total subscribers with contributions and the four main cities together host 34% of subsidized users in the country and 53% of users who pay contributions in the water service.

It should be noted that the subsidized users of the water service represent an average of 70% of the total number of users, both nationally and for each city, as shown in figure 2.

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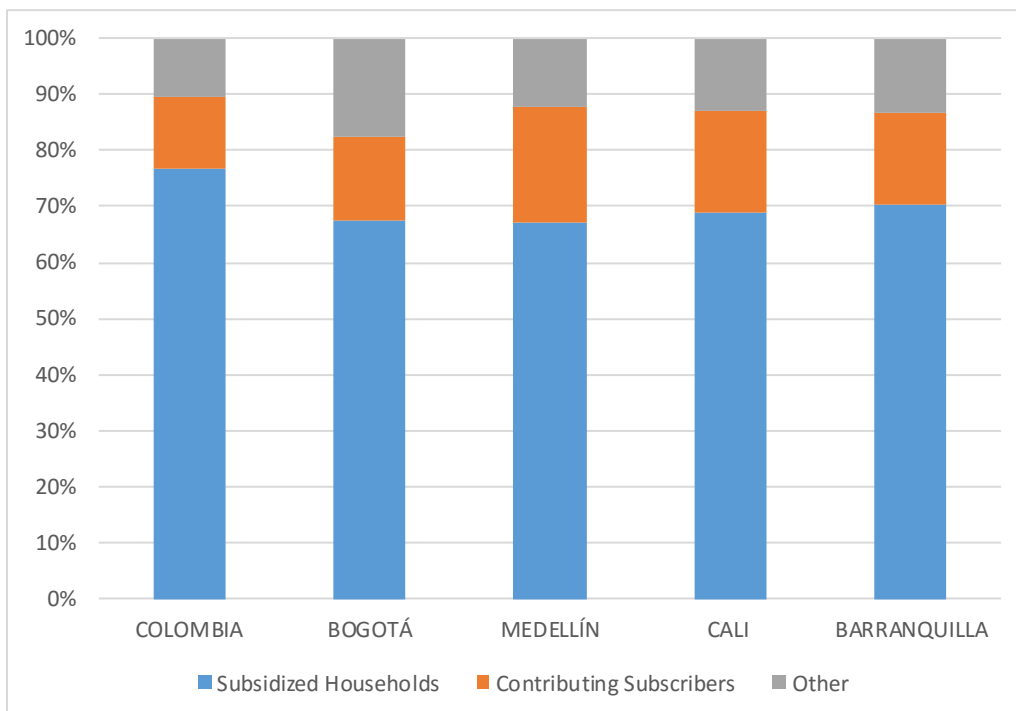
<sup>11</sup> <http://www.sui.gov.co>

Figure 1 Subsidized vs. Contributing Subscribers in the Water Service  
2016, Thousands of Subscribers



Source: Own elaboration based on SUI data.

Figure 2 Percentage of Subsidized vs. Contributing Subscribers in the Water Service  
2016 -%





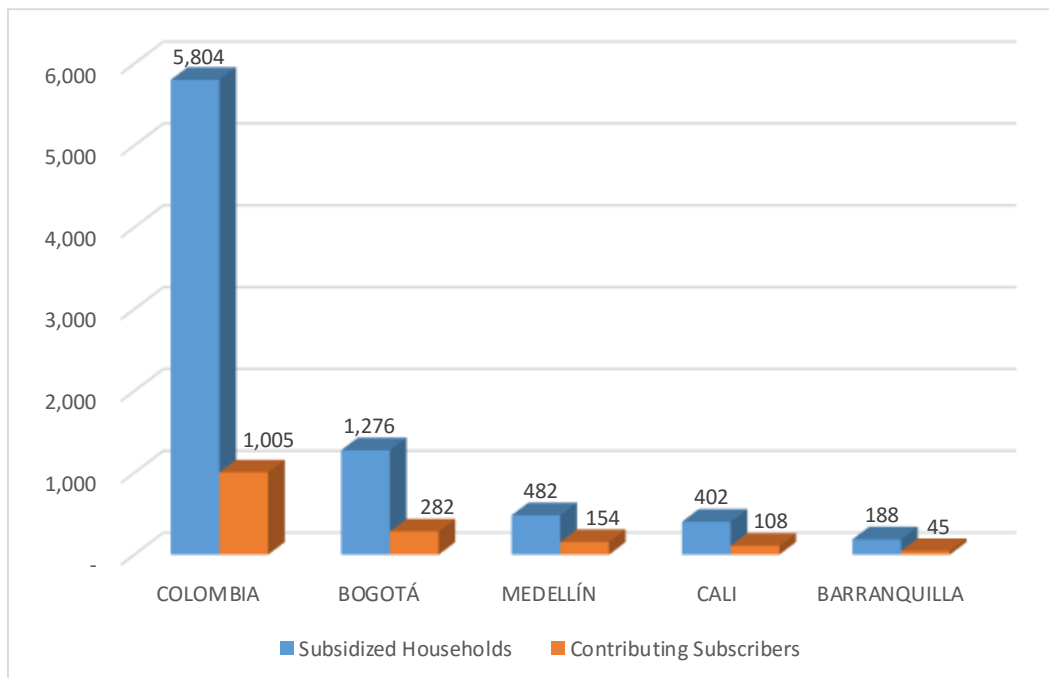
Source: Own elaboration based on SUI data.

For 2016 the providers reported a total of 7.71 million subscribers to the sewerage service, of which 5.8 million, belonging to strata 1, 2 and 3, benefited from the subsidy, while almost 1 million are upper strata (5 and 4) who are charged per contribution and 901,000 belonging to official sector or residential subscribers of stratum 4 whom, according to regulations, do not receive subsidies neither pay contributions.

Based on figure 3, it is observed that 22% of subsidized users are located in Bogotá, as well as 28% of the total subscribers who pay contributions. The four main cities in the country have a total of 40% of subsidized sewerage users in Colombia, and 59% of users who pay a contribution to this service.

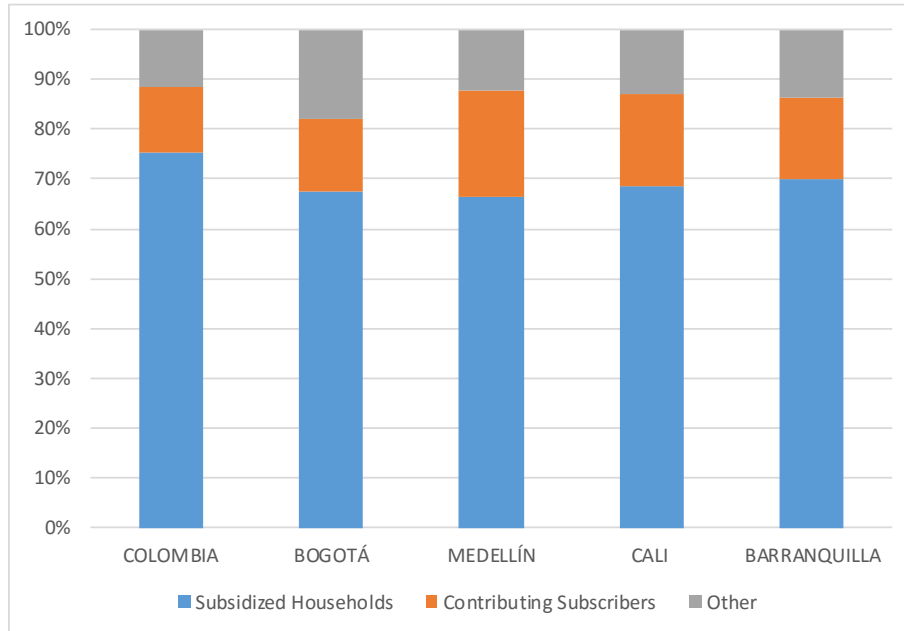
Similarly, it is worth noting that subsidized users represent an average of 70% of the total number of users, both nationally and for each city, as shown in figure 4.

Figure 3 Subsidized vs. Contributing Subscribers in the Sewerage Service  
2016, Thousands of Subscribers



Source: Own elaboration based on SUI data.

Figure 4 Subsidized vs. Contributing Subscribers in the Sewerage Service  
2016, %



Source: Own elaboration based on SUI data.

### 3.1.2. VALUE OF SUBSIDIES AND CONTRIBUTIONS

The total value of demand subsidies granted for the water service in 2016 was US\$181.7 million, and the total collection of contributions amounted to US\$98.5 million. This shows that 54% of the subsidized value was covered by contributions, and a deficit of US\$83.2 million had to be covered with budgetary contributions from each of the municipalities where the deficits occurred.

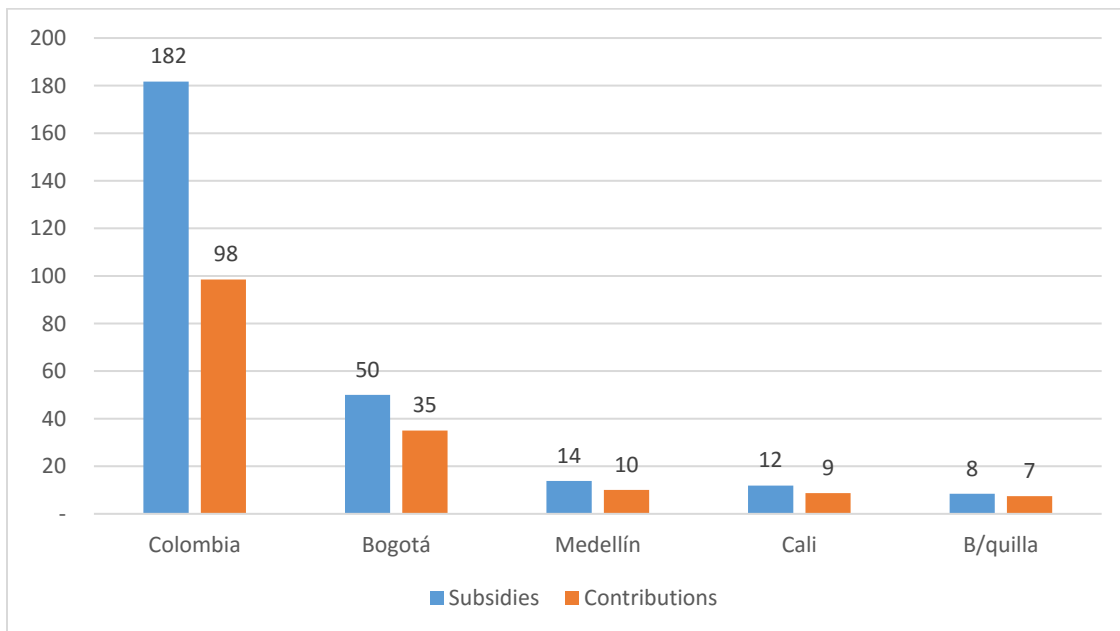
The city with the highest self-financing rate of the crossed subsidy scheme in water service in 2016 was Barranquilla, where contributions covered 88% of the subsidies and registered a deficit of only US\$ 992,000. On the other hand, Bogotá managed to cover with contributions only 70% of the subsidies granted, with a deficit of US\$ 15 million.

Table 6 Annual value of subsidies and contributions - water service  
USD 2016

	Subsidies	Contributions	Balance	% Covered
Colombia	181,725,628	98,480,867	-83,244,761	54.2%
Bogotá	50,017,133	35,014,419	-15,002,713	70.0%
Medellin	13,797,890	10,052,049	-3,745,841	72.9%
Cali	11,860,320	8,693,168	-3,167,152	73.3%
Barranquilla	8,426,384	7,434,235	-992,149	88.2%

Source: Own elaboration based on SUI data.

Figure 5 Value of subsidies vs Value contributions - Water Service  
Millions of USD, 2016



Source: Own elaboration based on SUI data.

The total value of subsidies granted in Colombia for sewerage service in 2016 was US\$119.7 million, and the total collection of contributions amounted to US\$73.7 million, which means 62% of the subsidies was covered by contributions, resulting in a deficit of US\$46 million, which is covered by municipal budget contributions.

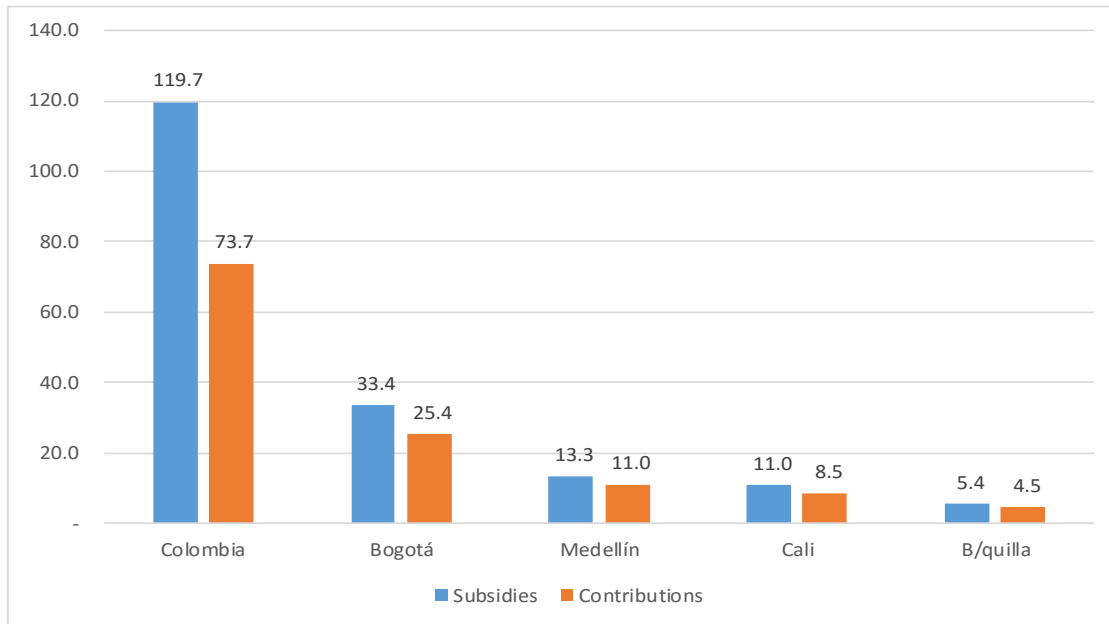
As for the water service, of the four largest cities in the country was Barranquilla in 2016, the city with the highest self-financing rate of the crossed subsidy scheme in the sewerage service, of which contributions covered 84% and left a deficit of only US\$ 842,000. Bogotá, meanwhile, financed with contributions 76% of the subsidies granted, resulting in a deficit of US\$ 8 million, which had to be covered by the municipal budget.

Table 7 Annual Value of Subsidies and contributions - sewerage service  
USD 2016

	Subsidies	Contributions	Balance	% Covered
Colombia	119,671,908	73,712,351	-45,959,557	61.6%
Bogotá	33,414,744	25,376,342	-8,038,402	75.9%
Medellin	13,253,378	11,039,189	-2,214,189	83.3%
Cali	10,965,148	8,526,793	-2,438,354	77.8%
Barranquilla	5,357,965	4,515,571	-842,395	84.3%

Source: Own elaboration based on SUI data.

Figure 6 Value of subsidies vs Value of Contributions- Sewerage Service  
Millions of USD 2016



Source: Own elaboration based on SUI data.

### 3.1.3. RESOURCES ALLOCATED BY THE STATE

The Constitution of Colombia establishes that the National Government, owner and collector of the country's main taxes (especially Value Added Tax -VAT-, income and wealth tax, international trade taxes and financial transactions taxes) must distribute, through the so-called General Participation System (SGP), among the country's departments and municipalities, 50% of their income for the financing of the sectors in charge of these territorial entities, basically education.

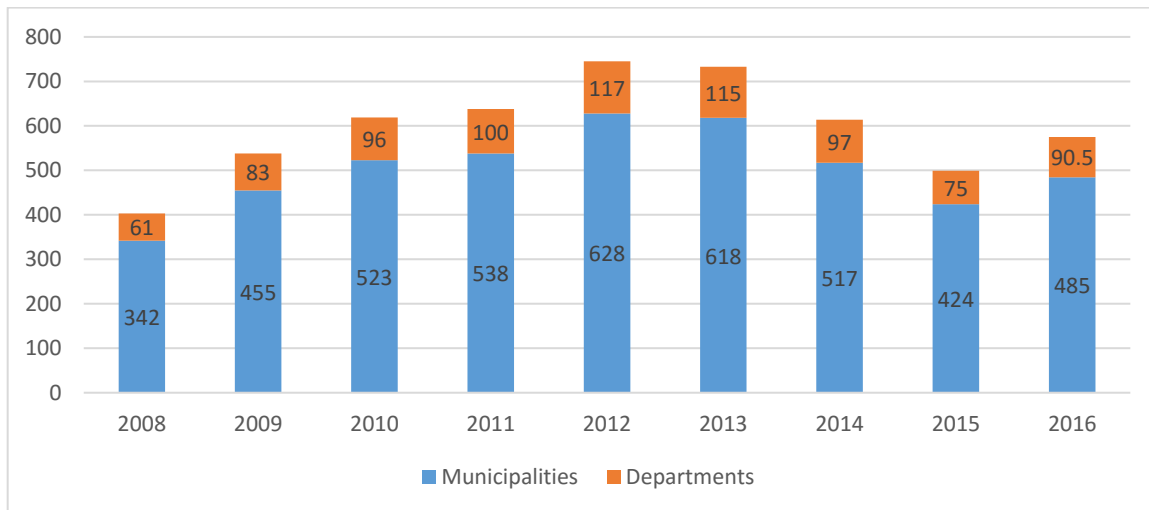
According to article 4 of Law 1176 of 2007, out of the resources granted by the Nation through the General Participation System, 5.4% must be allocated to the drinking water and basic sanitation sector in order to (i) guarantee universal coverage in the shortest possible time; (ii) achieve a more efficient execution of resources, through the definition of incentives that reward those territorial entities that increase coverage as well as quality; and (iii) articulate the quality of public services.

In 2016, that 5.4% represented US\$576 million, of which US\$91 million was for the departments and Capital District; and US\$485 million for the municipalities, to invest and to financing the deficit between subsidies and contributions in water, sewerage and basic sanitation services in their jurisdiction.

The following figure shows the historical values between 2008 and 2016 of SGP resources transferred by the Nation to the drinking water and basic sanitation sector. It should be noted that dollar values were calculated using the COP/USD market exchange rate<sup>12</sup> as of December 31 of each year.

Given that in 2013, and even more strongly in 2014 and 2015, there was a significant depreciation of the Colombian peso, the fall in dollars shown in those years is due exclusively to that effect, since the value in Colombian pesos increased in both nominal and real terms.

Figure 7 GSP resources allocated to the drinking water and sanitation sector  
2008-2016. Millions of USD



Source: Own elaboration based on DNP data.

#### 3.1.4. RESOURCES EARMARKED FOR SUBSIDY

In accordance with the provisions of article 7 of Law 1176 of 2007, the distribution formula of SGP resources for drinking water and basic sanitation between municipalities and districts is carried out according to the following criteria:

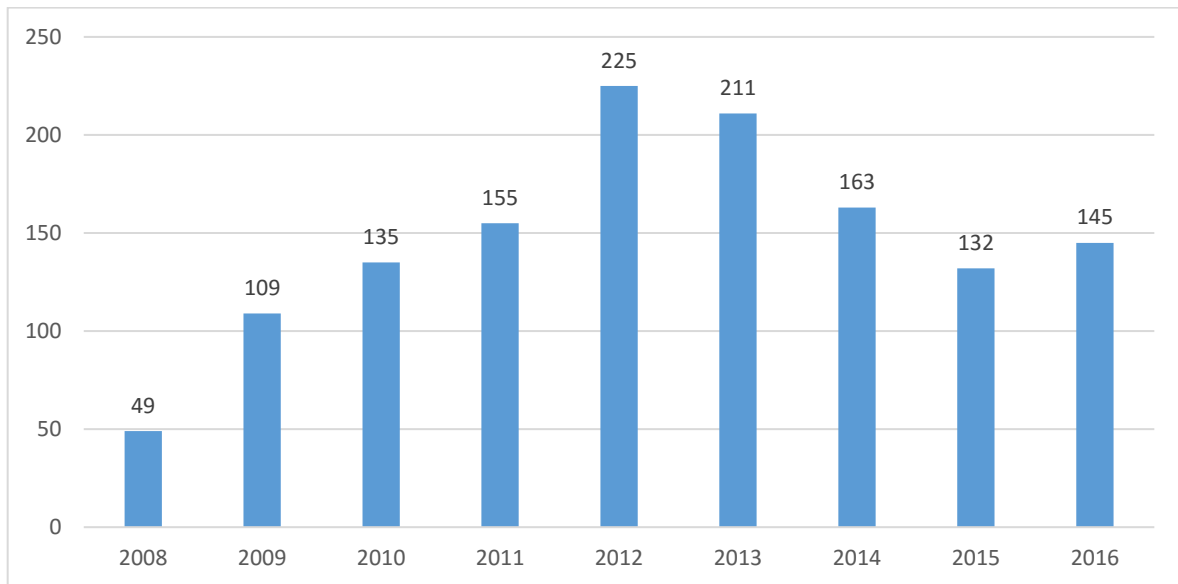
- i) 35% (US\$168.6 million in 2016) by a shortage of coverage calculated by SSPD.
- ii) 30% (US\$145.2 million in 2016) by population served and balance sheet of subsidies and contributions.
- iii) 5% (US\$24.2 million in 2016) by the territorial entity effort to increase coverage.
- iv) 20% (US\$93.3 million in 2016) by poverty level of the respective district or municipality.
- v) 10% (US\$48.4 million in 2016) by compliance with criteria of the fiscal and administrative efficiency of each territorial entity in sectorial budget management.

<sup>12</sup> Representative Market Rate (TRM)

The resources allocated to the departments (15%) are used to create a "bag" of resources in order to co-finance the investments made by the districts and municipalities to develop projects contemplated within the Departmental Plan for Drinking Water and Basic Sanitation.

The following is a historical evolution of the resources allocated to finance subsidies for demand in the drinking water and basic sanitation sector between 2008 and 2016. In order to express the values in dollars, the exchange rate was taken as of December 31 of each year.

Figure 8 Resources allocated to subsidies in the drinking water and sanitation sector  
2008-2014. Millions of USD



Source: Own elaboration based on DNP data.

### 3.1.5. SECTOR COMPOSITION

A total of 2,557 water and sewerage service providers are currently registered with the Superintendence of Public Services, of which 283 and 249, respectively, serve more than 2,500 users in urban headwaters. The remaining providers serve less than 2,500 users in urban headwaters and rural areas.

64% of small provider (those with less than 2,500 subscribers or accounts) have the form of direct provision by the municipality, 20% are state-owned public companies and 10% are corporations.

Providers reporting information to SUI had a total of 13.48 million of water service accounts at the close of 2016, of which 12.48 million are residential subscribers; in the sewerage service a total of 7.71 million subscribers, of which 7.1 million are residential.

In the urban areas for the 126 largest municipalities of Colombia (over 50,000 inhabitants) in which 33 million inhabitants are located, public enterprises owned by the municipality is the most common modality, serving 63.6% of the population of this group. These companies include Bogotá, Medellín and Cali, the three largest cities in the country.

Table 8 Modalities for providing water supply and sewerage services  
Municipalities with more than 50,000 inhabitants

Modality	Municipalities		Population	
	Number	%	Number	%
Municipal-owned public enterprises	69	54.8	21,091,182	63.6
Contracts with private operator	26	20.6	7,131,055	21.5
Joint venture with public majority	4	3.2	1,372,219	4.1
Regional or departmental public company	8	6.3	556,228	1.7
Public company from another municipality	17	13.5	2,866,610	8.6
Direct benefit by the municipality	2	1.6	126,890	0.4
Total	126	100.0	33,172,665	100.0

Source: Velez, Luis. G. (2013)

Contracts with private operators is used by 26 large municipalities (including 9 departmental capitals), serving 21.5% of the population of the 126 municipalities analyzed.

The principal cities served by a mix public-private companies, with a public majority, are Manizales, Pereira, Popayan, and Pasto.

The two largest regional water companies (both owned by the public sector) are:

- Acuavalle: with 157,757 water users and 124,772 sewerage users, it serves 15% of the department of Valle del Cauca with a total of 33 municipalities, of which 7 falls into the category of large (greater than 50,000 inhabitants).
- Empocaldas: with 77,993 users of waters and 70,965 sewerage users, it serves 20 municipalities in the department of Caldas, of which only La Dorada falls into the category of large.

Municipalities served from companies from another municipality area common in metropolitan areas such as Bogota, Medellin Cali, Barranquilla or Bucaramanga where the provider of the larger municipality serve nearby bordering municipalities.

#### 4. INSTITUTIONAL RESPONSIBILITY FOR SANITATION

See paragraph 2.1 of this document.

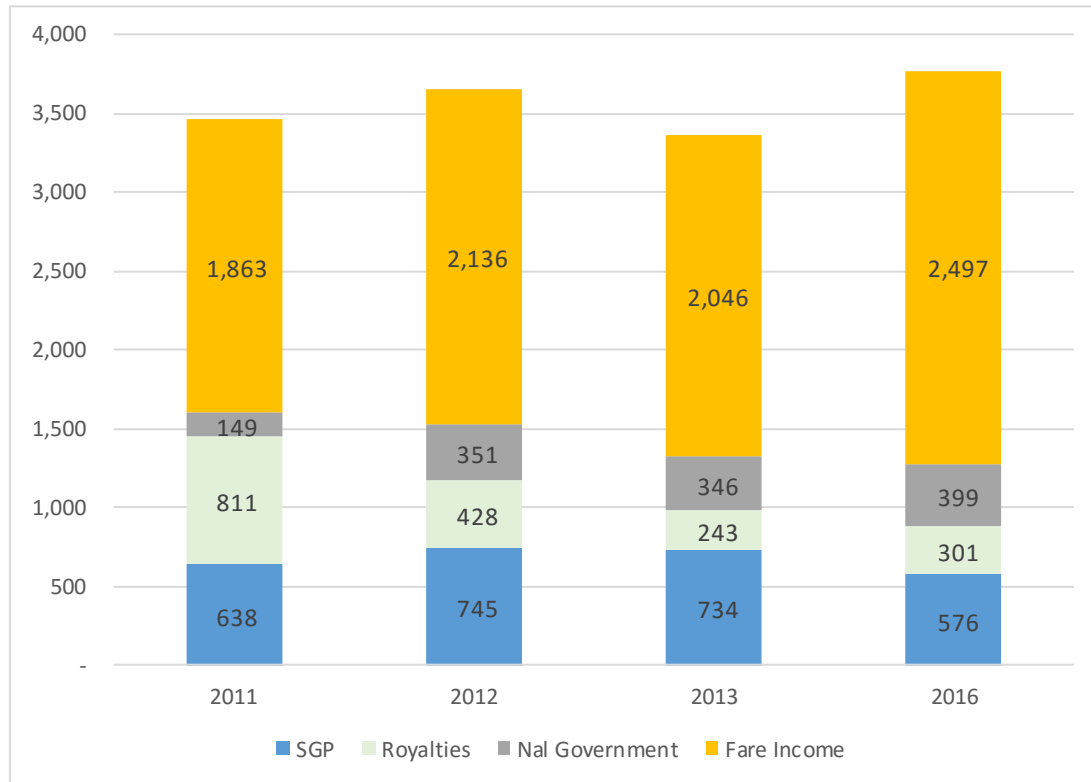
#### 5. NATIONAL FINANCING MECHANISMS FOR WATER AND SANITATION



### 5.1. Sector financing

The main sources of financing for the drinking water and sanitation sector in Colombia are: (a) user fees; (b) transfers from the National Government to municipalities and departments through the general system of participation (SGP); (c) royalties paid by mining operator to local and national governments; and (d) budgetary contributions (furthermore to SGP) from the National Government to investment projects in different regions of the country.

Figure 9 Primary resources of the sector  
Millions of USD



Source: Own elaboration based on information from the DNP and financial statements of companies.

The total primary resources of the sector (total revenues excluding indebtedness), were between \$3,500 and \$3,700 million dollars per year between 2011 and 2016, with a slight fluctuation caused mainly by changes in the exchange rate. In fact, in national currency it has growing slightly above inflation.

GSP resources are the most important and stable source of financing for the sector and are used to invest (offer-side) or cover the gap of the rate system (demand-side) subsidies. In most of the country's municipalities, providers depend on these resources for both the operation (via the payment of subsidies) and any investment they need.

Royalties are the payments to be made by companies that exploit minerals and hydrocarbons. Part of these resources are allocated to the municipalities and departments where the mine is located and where the ports from which it is exported are located; another part of these resources will form a national exchange that goes to the rest of the country's municipalities and a third is dedicated to funding projects that any public entity presents in the eligible sectors determined by law. Many of the municipalities and departments that receive royalties dedicate part of these resources to invest in water and sewerage. In addition, the Royalties National Fund annually finances numerous projects in these services.

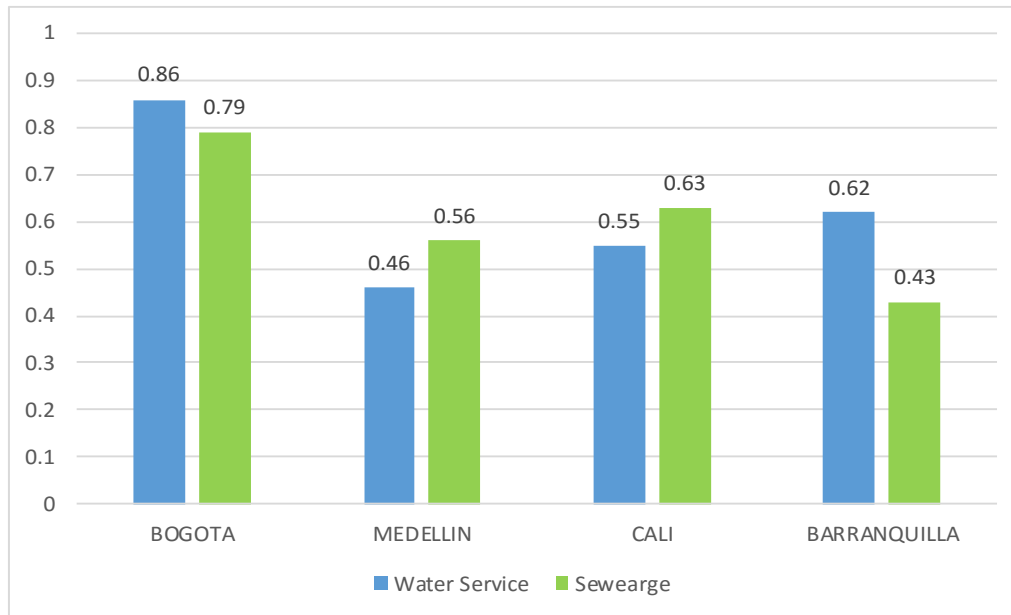
Within the annual debate of the National General Budget, resources to invest in water and sewerage services are always included, either at the initiative of the Government to attend to programs defined by the Ministry of the Sector (Ministry of Housing, City and Territory) or at the initiative of parliamentarians to meet specific regional demands.

The 26 largest companies in the country (for which we have reliable information from their financial statements), by 2016 recorded 8.4 million accounts, serving approximate 29 million urban inhabitants, and had operational income between US\$1,863 million (in 2011) and US\$2,046 million (in 2013), representing between 54% and 60% of the total primary income of the sector. Based on the lowest average tariff of this group of companies, it can be estimated that the operating income of the rest of the companies operating in the urban sector of the country could be around US\$600 million.

Although the tariff revenues of most companies are mainly used to cover administration, operation, and maintenance costs, the largest companies in the country cover the investment requirements with their tariffs and only sporadically receive non-refundable resources from the National Government, more for political reasons than for real financial need.

In 2016, Bogotá had an average water plus sewerage rate of US\$1.65 per cubic meter, the highest average rate among all large Latin American cities.

Figure 10 Average rate water and sewerage 2014  
in the 4 main Colombian cities USD/m<sup>3</sup>



Source: Own elaboration based on commercial and financial information of the companies.

## 5.2. Characteristics of the cross-subsidy scheme

Cross-subsidies as well as direct demand-side subsidies, are granted using socio-economic stratification.

As mentioned above, the main objective of stratification is to allow differential rates - by strata - of residential consumption of public services, but it is also used by local governments to collect differential tariffs or taxes associated with real estate (such as property tax and valorization tax) and to allocate subsidies in some social programs (such as the price of university tuition fees at public universities) and is even used voluntarily by some companies to apply prices.

The subsidy scheme adopted in Colombia is a combination of the three forms of subsidies: cross-subsidies and direct subsidies to demand, plus direct subsidies to supply. We can summarize the scheme like this:

- Cross-subsidies are applied through a scheme in which upper-sector residential subscribers and non-residential users pay surcharges to finance subsidies to lower (strata 1 2 and 3) residential users.
- Since in most of the country's municipalities, the combination of types of users means that the surcharges applied are not sufficient to finance the subsidies granted, the scheme is complemented by direct subsidies to demand, transferring public municipal resources to W&S companies to cover the lack of subsidies.
- Finally, the municipal governments, with their own resources or with transfers from the departmental or national level, make investments in different components of the services (collections, tanks, networks, PTAP and PTAR and even water distribution network programs), whose value is not transmitted to tariffs, so they are really a subsidy to supply.

The clearest benefits and attractiveness of the Colombian system is the cross-subsidy component, since although its effectiveness (in almost achieving the financial balance between subsidies and contributions) is limited to large cities, as the financial dependence of public resources providers diminishes sharply, it significantly reduces the administrative procedures (and corruption risks) associated with achieving the effective transfer of state resources.

### 5.2.1. CROSS-SUBSIDIES

Since the beginning of the 1970s in Colombia, for redistributive (not very clearly defined) purposes, differential tariffs have been applied to public water and basic sanitation services<sup>13</sup>, taxing non-residential properties and upper-sector housing (richer families) at higher rates and lower-sector housing (poorer families) at lower rates.

The dwellings are classified into six layers. The poorest dwellings belong to stratum 1 and the richest dwellings belong to stratum 6.

The unifying methodologies were issued in the mid-1990s by the National Department of Planning and have been applied by the vast majority of municipalities in the country, ultimately achieving that the classification of each housing is unique, defined by municipal decree and welcomed by all companies that provide public services in the municipality.

Currently, according to the regulations in force in this regard (Law 142 of 1994), subsidies are granted to residential users of strata 1, 2 and 3. Both strata 5 and 6, as well as the commercial and industrial categories, make contributions to finance low-sector subsidies. Finally, users of stratum 4 and official users do not receive any subsidies, but no contributions are charged to them.

The subsidy is granted exclusively on the portion of the invoice corresponding to the volume of water (and sewerage) defined as basic consumption and the corresponding fixed charge. Monthly household consumption above the volume defined as basic is billed at the economic cost of the service to users in strata 1 to 4. For users of strata 5 and 6, and for industrial and commercial users, all volume consumed and fixed charges are taxed with a contribution.

In Colombia, consumption defined as "basic" was fixed at 20 m<sup>3</sup>/account/month for the whole country, since the early 1990s. However, Resolution 750 of 2016 orders its gradual reduction in the next 4 semesters according to the altitude of the area served, as well:

Table 9 Consumption range reduction timeline  
m<sup>3</sup>/connection/month

Locations less than 1,000 m.a.s.l.

CONSUMPTION	may-16	jan-17	jul-17	jan-18
BASIC	0-19m <sup>3</sup>	0-18m <sup>3</sup>	0-17m <sup>3</sup>	0-16m <sup>3</sup>
COMPLEMENTARY	>19m <sup>3</sup> <32m <sup>3</sup>	>18m <sup>3</sup> <32m <sup>3</sup>	>17m <sup>3</sup> <32m <sup>3</sup>	>16m <sup>3</sup> <32m <sup>3</sup>
SUMPTUARY	>32m <sup>3</sup>	>32m <sup>3</sup>	>32m <sup>3</sup>	>32 m <sup>3</sup>

Location between 1,000 and 2000 m.a.s.l.

<sup>13</sup> And also in energy, fixed telephony, gas and solid waste disposal services.

CONSUMPTION	may-16	jan-17	jul-17	jan-18
BASIC	0-18m3	0-16m3	0-14m3	0-13m3
COMPLEMENTARY	>18m3<26m3	>16m3<26m3	>14m3 <26m3	>13m3 <26m3
SUMPTUARY	>26m3	>26m3	>26m3	>26 m3

Locations greater than 2,000 m.a.s.l.

CONSUMPTION	may-16	jan-17	jul-17	jan-18
BASIC	0-17m3	0-15m3	0-13m3	0-11m3
COMPLEMENTARY	>17m3<22m3	>15m3<22m3	>13m3 <22m3	>11m3 <22m3
SUMPTUARY	>22m3	>22m3	>22m3	>22 m3

Source: Own elaboration based on Resolution CRA 750 of 2016.

In practically all municipalities in the country, the total value of contributions collected is less than the total given subsidies, with the deficit being financed by municipal budgets using resources from the transfer of the General Participation System to drinking water and sanitation. Those providers that present surplus in the crossing between subsidies and contributions must transfer it to the municipalities (and specifically to the fund of solidarity and income redistribution) to finance other providers of the same territorial entity, in the same service, and if there are still resources, they must be assigned to bordering territorial entities that present deficits in the same services.

Solidarity and income redistribution funds are created by municipal councils to channel budgetary resources to finance loss-making providers at the crossroads between subsidies and contributions or to receive the resources of surplus providers at that crossroads.

The subsidy and contribution factors are established by the municipal councils, within the limits (maximum and minimum) established by law. Currently, Law 1450 of 2011 set maximum limits on the subsidy factors for each of the lower strata (1, 2 and 3); it also sets minimum limits on the contribution factors charged to the upper strata (5 and 6) and to the users of commercial and industrial categories, as well:

Table 10 Limits on subsidy and contribution factors for the W&S Sector  
Laws 142/94 and 1450/2011

	Maximum subsidy	Minimum contribution
Stratum 1	70%	N/A
Stratum 2	40%	N/A
Stratum 3	15%	N/A
Stratum 4	N/A	N/A
Stratum 5	N/A	50%
Stratum 6	N/A	60%
Commercial	N/A	50%
Industrial	N/A	30%

Source: Own elaboration based on Ley 142 of 1994 and Ley 1450 of 2011.

Respecting the above limits, the Municipal Councils set the subsidies to be applied, which can be different between services (water supply and sewerage) and differences between the fixed charge and basic consumption. In fact, in some municipalities of the country, there are no subsidies for fixed charges.

It is up to the providers to calculate their economic reference costs, both fixed charge (\$/user/month) and consumption (\$/m<sup>3</sup>) of each service (water and sewerage) according to the tariff methodologies defined by the Water Supply and Basic Sanitation Regulatory Commission (CRA). At present (November 2016) there is a methodology that began to be applied in July 2016 for locations with more than 5,000 subscribers, contained in Resolution CRA 688/2014 and a temporary methodology (while issuing the definitive one) contained in Resolution CRA 287 of 2014<sup>14</sup> of application in locations with fewer than 5,000 subscribers.

Providers must calculate the tariffs to be applied to each type of user, both for fixed charge and for consumption charge, in each service, affecting the economic reference costs resulting from applying the methodology, with the subsidy and surcharge percentages defined by the Municipal Council of each locality. Annually the providers have

<sup>14</sup> Resolution 287 of 2004 contains the methodology that has been applied since January 2006 to all providers in the country, but Resolution 688 of 2014 established that this resolution (the 287) would be used only by Service Delivery Areas under 5,000 subscribers while the new methodology was issued for this group.

to report to the Municipality Secretariat of Finance the deficit that will be generated for the next year and that must be covered with resources from the municipal budget, in order for it to program the corresponding contributions and/or define with the local council the changes in subsidies and surcharges levels to be in order the balance between subsidies, surcharges and municipal contributions be achieved.

#### 5.2.2. DIRECT SUBSIDIES

The tariff and cross-subsidy scheme contained in Law 142 of 1994 is conceptually designed to ensure the financial self-sufficiency of domestic public services. However, the existence in most municipalities of the country of a larger proportion of the population with right to receive subsidies (strata 1, 2 and 3) and minimal or non-existent users who pay contributions (strata 5 and 6 and non-residential users), means that the balance between subsidies and contributions - despite severely limiting subsidies and applying exorbitant contributions<sup>15</sup> - does not achieve its equilibrium.

Thus, in Colombia, we have to apply two types of direct subsidies in drinking water and sanitation services. The former, direct subsidies to demand, are represented by the contributions of municipal budgets to cover the deficit that occurs in most municipalities of the country between subsidies and contributions. The second, direct subsidies to the supply, are represented by the budgetary contributions of the municipalities, departments and the nation for investments in the provision of public water and sewerage services in different municipalities of the country.

Of the resources allocated annually to municipalities and departments for the drinking water and sanitation sector through the SGP, previously presented, the municipalities allocated direct subsidies to demand, i.e. to cover the deficit between subsidies and surcharges in the water and sewerage sector, around 25%. The toilet service is provided by about 5% and the rest was dedicated to direct investment by municipalities, i.e. direct subsidies to the supply.

The remaining budgetary contributions to the sector from the national budget, some departments' budgets, and royalties are entirely devoted to supply-side subsidies.

For the allocation of the Nation's resources, there is a project presentation and qualification scheme in the sectorial Ministry (currently the Ministry of Housing, City and Territory) known as the "Single Window", which can be accessed by all territorial entities (or companies in conjunction with a territorial entity). Through an evaluation and scoring system, resources are allocated to requesting departments and municipalities, but the resources are turned over and executed through fiduciary or similar contracts with direct payment to contractors. The works are normally agreed between the municipalities or departments with the service providers, but in some cases conflicts arise (mainly political) and work is carried out that do not require or cannot be operated by the providers (such as building a sewerage system in a district not yet interconnected to the main network of the municipality).

In the case of royalty resources, two schemes operate: in the case of royalties paid to municipalities and departments, they freely decide what portion to allocate each year to the water and sanitation sector, since this is an eligible sector.

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<sup>15</sup> For example, in many municipalities only consumption subsidies (basic) are granted for strata 1 and 2, eliminating subsidies for fixed charges and subsidies for stratum 3. And in some municipalities, the contributions applied to the upper strata reach up to 200%.

The works to be executed are freely selected by each territorial entity, most of the time in common agreement with the providers. In the case of the National Royalties Fund, there is a rather complex system of regional distribution of resources and responsibilities for selecting the projects to be financed: the projects are submitted by the territorial authorities (municipalities and departments) to each of the "Collegiate Bodies of Administration and Decision" - OCAD, which "are responsible for defining the investment projects submitted for their consideration, which will be financed with resources from the General System of Royalties, as well as for evaluating, making feasible, approving and prioritizing the convenience and opportunity of financing them and designating their executor."

### 5.3. The circular economy in Colombia

Although Colombia has not begun to work massively in relation to the circular economy, this is a concept that has been gaining increasing strength from the academy<sup>16</sup> and the intention of the national government to take a first step on the subject, placing Green growth ", which "requires the circular economy as a cornerstone to contribute to the country's competitiveness, to generate less waste and more business, more green jobs ".<sup>17</sup>

According to data from the District Secretariat of Habitat, Bogotá currently recycles 17% of its solid waste, which leads to 189,238 tons of waste entering the landfill each month.

Colombia has taken some steps towards productive processes that take up aspects of the circular economy. The first case is that of 540 Colombian companies that have joined post-consumer programs of the National Association of Industrialists - ANDI, to better manage the useful life of batteries, tires, lamps, computers, and packaging of pesticides and pharmaceuticals.

It also operates the largest national network for the recovery of plastic (PET) and glass containers, which end up in more OI-Peldar or "ecopet" containers for bottlers, or as an input for Enka fibres used in clothing or tires. 200 tons of used oil has been collected annually from restaurants thanks to the alliance with Ecográs. The collected product is used as an input for manufacturers of soaps or biodiesel.

Another example is companies such as Cementos Argos whom sells and takes sacks filled with cement to their building customers and collects the empty ones, crushes them and serves as an input for fibro-cement for companies that manufacture roof tiles.

All this has led to the conclusion that the Government has an outstanding task in terms of identifying better incentives for the productive sector: rewarding energy efficiency and the use of alternative sources with tax exemptions, and paying more for the one that pollutes the most. This would help to make the circular economy a reality for Colombia, as it already is in developed countries.

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<sup>16</sup> <http://www.andi.com.co/ForoEconomiaCircular2017/Paginas/ejes.html>

<sup>17</sup> Quote by Carlos Herrera Santos, Vice President of Sustainability of the Association of Businessmen of Colombia (Andi) in article <http://www.elcolombiano.com/negocios/innovacion/economia-circular-en-colombia-es-negocio-HH3081090>



Last October, Colombia was visited by a group of more than 60 businessmen, academics, and European experts, led by the European Union's director general for the environment, with the aim of motivating an exchange between Europeans and Colombians on their experiences and challenges related to the practices of the circular economy.

However, the concept of circular economy remains out of the sanitation sector. Although the country is taken steps toward achieves a greater level of wastewater treatment, there are not project oriented to make excreta a commercial product such as biogas, solid fuel, fertilizer, chemicals, treated water. In fact, actual regulation need to be relaxed in order the sludges coming from waste water treatment plant can be used as fertilizing the agriculture sector.

## Part B: Brief introduction to Bogota

### 6. BOGOTA'S SOCIAL, POLITICAL AND ECONOMIC SITUATION

Bogotá D. C., is the capital of Colombia; having 8,080,734 inhabitants at December 2016. It is administered as the Capital District, and enjoys autonomy - since 1954 - to manage its interests within the limits of the Constitution and the law. Unlike the other Colombian municipal district, Bogotá is a territorial entity that has the administrative powers that the law confers to the departments and municipalities, simultaneously. It is made up of 20 localities<sup>18</sup> and is the political, administrative and economic epicenter of the country.

It is the third highest capital of South America (after La Paz and Quito), as it is having an average of 2,625 meters above sea level. It is located in the center of Colombia, in a region known as the savannah of Bogota, which is part of the Cundiboyacense plateau, a formation located in the Andean Eastern Cordillera.

The city is driven by the Mayor, elected by citizen vote by a four years periods. The Mayor can be reelected but not for continues. In fact, 2016-2020 is the second period for the actual city Mayor (Enrique Peñalosa) whom was Mayor in the period 1998-2000.

The administrative branches of the city are its district secretariats (health, mobility, education, among others) and the Environment Secretariat.

The city council is responsible for approve annually the city and city's owned companies budget and exercising political control over city Mayor; it is made up by 45 councilors (democratically elected every four years) representing the twenty city localities.

The judicial power in the city is made up of different judges and magistrates. As the capital of the country, all jurisdictional hierarchies can be found, such as at the national level: the Supreme Court of Justice, the State Council, the Constitutional Court and the Superior Council of the Judiciary. At the district level, the Superior Court of Bogotá with its different Decision Chambers, which is composed of 9 members and divided into four chambers, each of which sits with three Magistrates as follows: Civil, Agrarian and Family Decision Chamber, Labor Decision Chamber, Criminal Decision Chamber and Administrative Decision Chamber. Finally, at the basic level there are the Circuit Courts and the Municipal Courts in their different specialties (Civil, Criminal, Labor, etc.). In addition, the Superior

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<sup>18</sup> These include more than 1900 neighborhoods in the urban area, except for Sumapaz, which is a rural area.

Court of Bogotá also serves as a guarantee control court for those processes that follow the high officials of the state before the Supreme Court of Justice in a single instance.

According to "The Economist", Bogotá stands out for its economic strength associated with the size of its production, the facilities to create companies and to do business, financial maturity, the attraction of global companies and the quality of its human capital. It is the main market of Colombia and the Andean Region, and the first destination of foreign direct investment reaching Colombia (70 %).

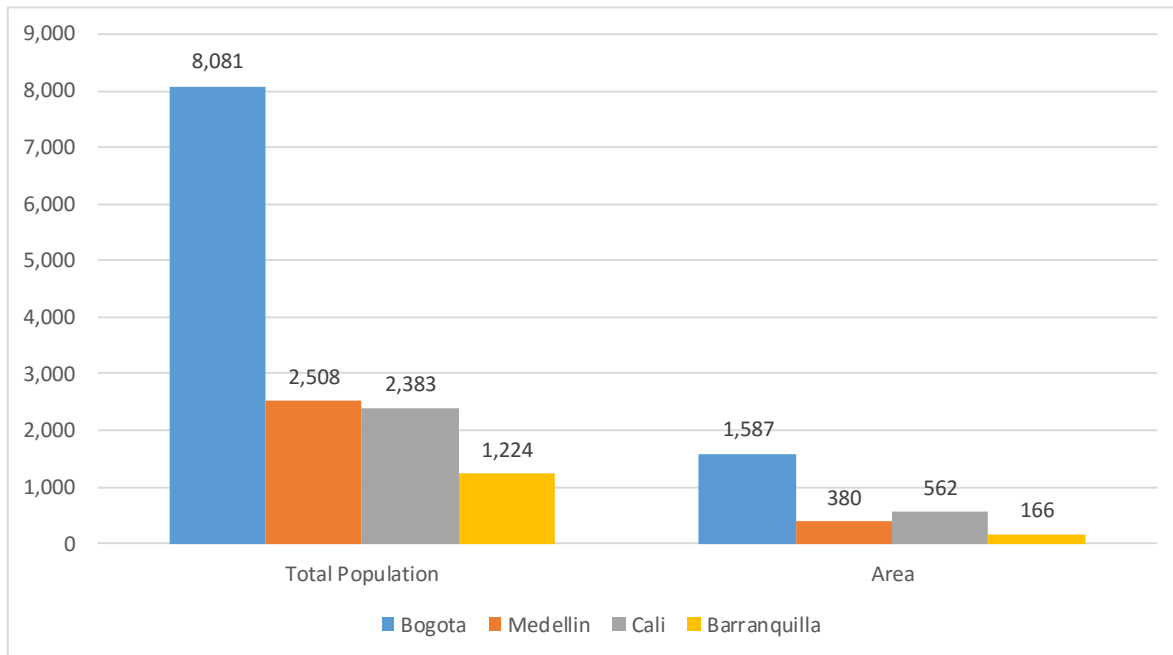
6.1. [General features of Bogota](#)

6.1.1. [POPULATION](#)

Bogotá has 8 million inhabitants, three times the population of Medellin or Cali (second and third Colombian populated cities) and six times the population of Barranquilla (fourth populated city), counting for 17% of the Colombian population. In the Bogotá rural area lives only 0.2% of its population, while 1.1% (of the city's total population) in Medellin, 1.5% in Cali and 0.3% in Barranquilla.

Although Cali is relative less dense (population/km) than the other 3 great cities, the area occupied by each/ city is proportional to its population.

Figure 11 Population (Thousands of inhabitants) and Area (Km2)



Source: Own elaboration with information from DANE

As a characteristic feature, it has been observed that urbanization and urban economic activities have consolidated over the period 2005 and 2016, as these cities, as well as other intermediate cities, have been gaining importance

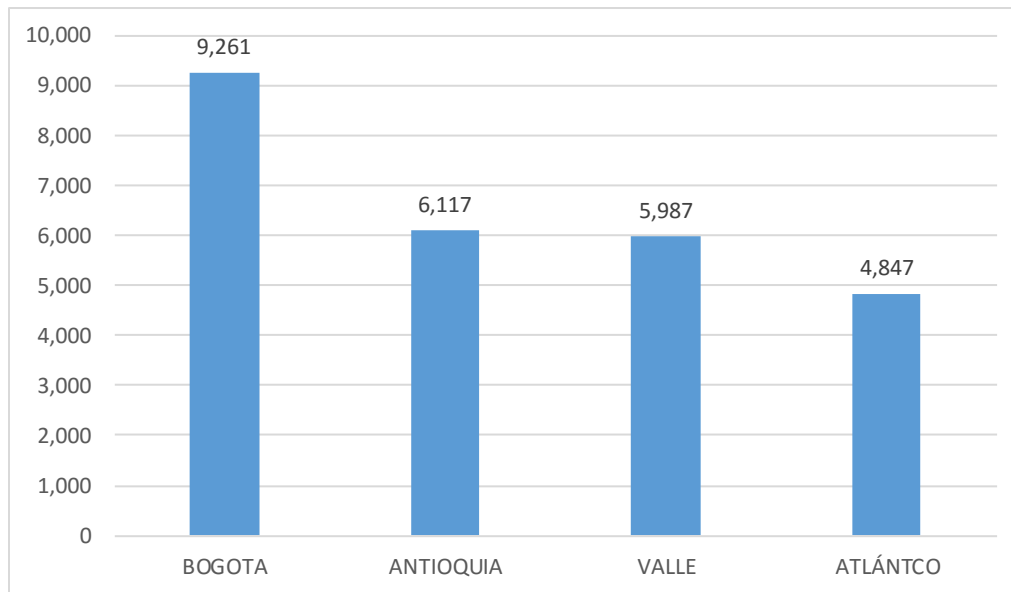
and exerting strategic leadership at regional and national levels, which allows them to have more political and economic power in the country.

#### 6.1.2. PER CAPITA INCOME

Bogotá, with about US\$ 106,678 million total GDP, and US\$ 9,260 per capita GDP, has the highest both total and per capita GDP in the country, representing 25.7% of the national GDP in 2016; it is the sixth largest city by GDP in Latin America and it is also the largest business platform in Colombia where most high-impact ventures occur.

Since there are no GDP figures per city, the data are presented by department. The participation in the National GDP by 2016 in the departments of Antioquia, Valle and Atlántico was 13.9%, 9.7% and 4.2%, respectively.

Figure 12 GDP per capita USD 2016



Source: Own elaboration with information from DANE

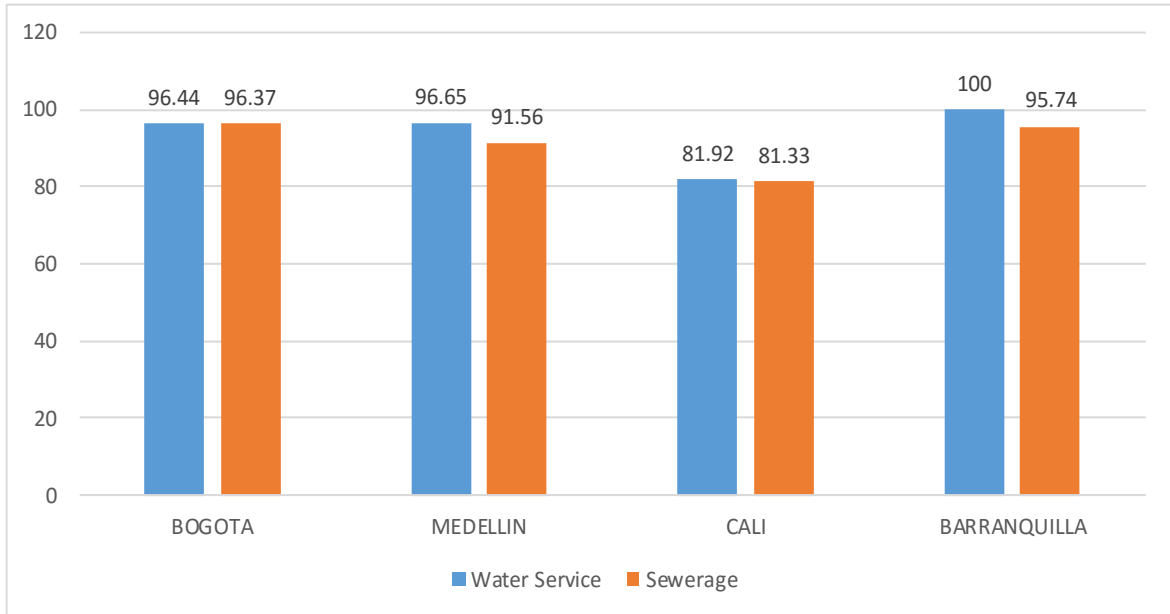
#### 6.1.3. PUBLIC SERVICE COVERAGE

Coverage is an indicator that reflects progress in development policies and infrastructure investment by local and national governments aimed at meeting the primary need for access to safe drinking water and basic sanitation. Thus, increasing coverage and facilitating access to water and sewerage services is the main priority when it comes to investment projects to be carried out in the sector.

In places where 100% coverage is not yet reached, there are difficulties in providing the service to the entire population due to climatic, environmental, topographical conditions and the installed capacity of the infrastructure that the companies have.

With regard to sewerage services, the sector's policy has focused on improving coverage, separating rainwater from sanitary water<sup>19</sup>, and increasing the treated flow of domestic wastewater.

Figure 13 Water and sewerage service coverage 2016 (%)



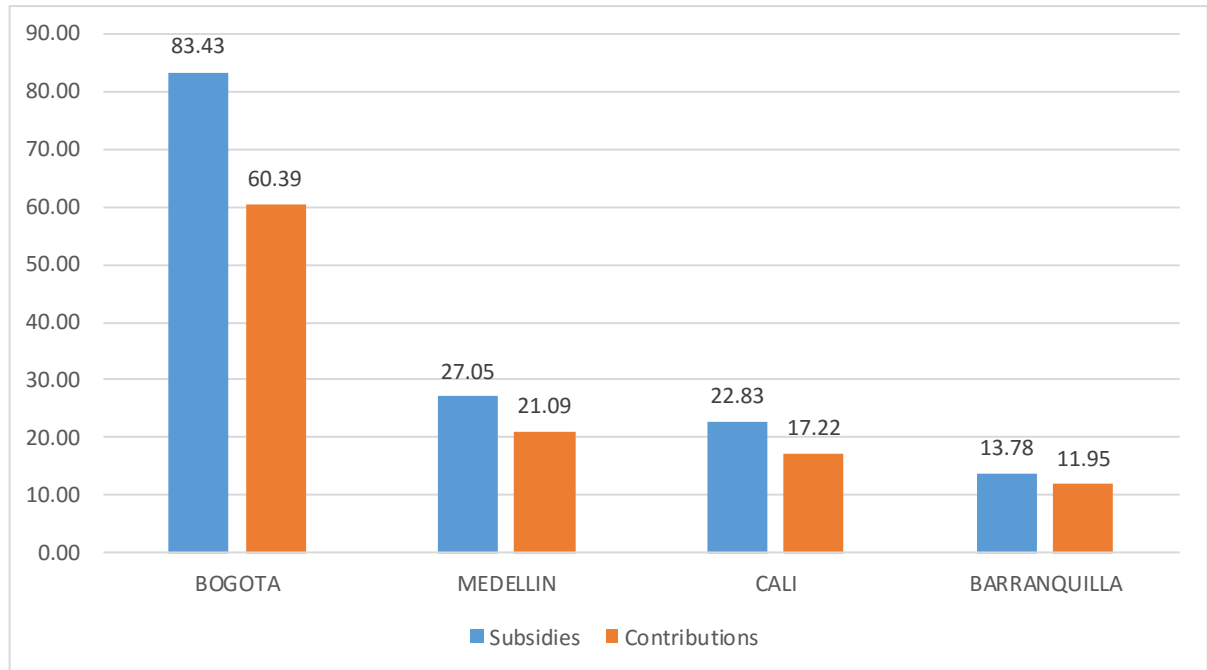
Source: Own elaboration based on SUI data.

<sup>19</sup> Combined Sewerage Systems: In the country the vast majority of wastewater collection systems are combined, which generates during heavy rainfall, significant changes in the flows transported to treatment systems.

6.1.4. SUBSIDIES AND CONTRIBUTIONS

In Bogotá, contributions cover 72% of subsidies, in Medellín 78%, in Cali 75% and in Barranquilla 87%.

Figure 14 Subsidies vs. Contributions Water Service and Sewerage  
million USD 2016



Source: Own elaboration based on SUI data.

According to the information reported by the W&S provider companies in the cities mentioned above, stratum 1 has average subsidies of 53% and 63% in water service and sewerage respectively, with a maximum allowed by the Law of 70%; while stratum 2 is granted average subsidies of 28% in water service supply and 35% in sewerage, with a maximum allowed by the law of 40%.

In terms of contributions, stratum 5 with an average contribution of 56% in water service and 54% in sewerage, with a minimum established by law of 50%. Stratum 6 has 65% and 63% contributions, with a minimum of 60% by law. Industrial use with averages of 42% and 40%, with a minimum of 30% by law. And commercial use with contributions averaging 55% and 52% with a minimum of 50% by law.

It should be noted that, unlike the other cities in Bogotá, there is a considerably higher surcharge on fixed charges for strata 5 and 6 of water services (99% and 136% respectively), as well as for sewerage services (149% and 246% respectively).

6.1.5. WASTEWATER TREATMENT

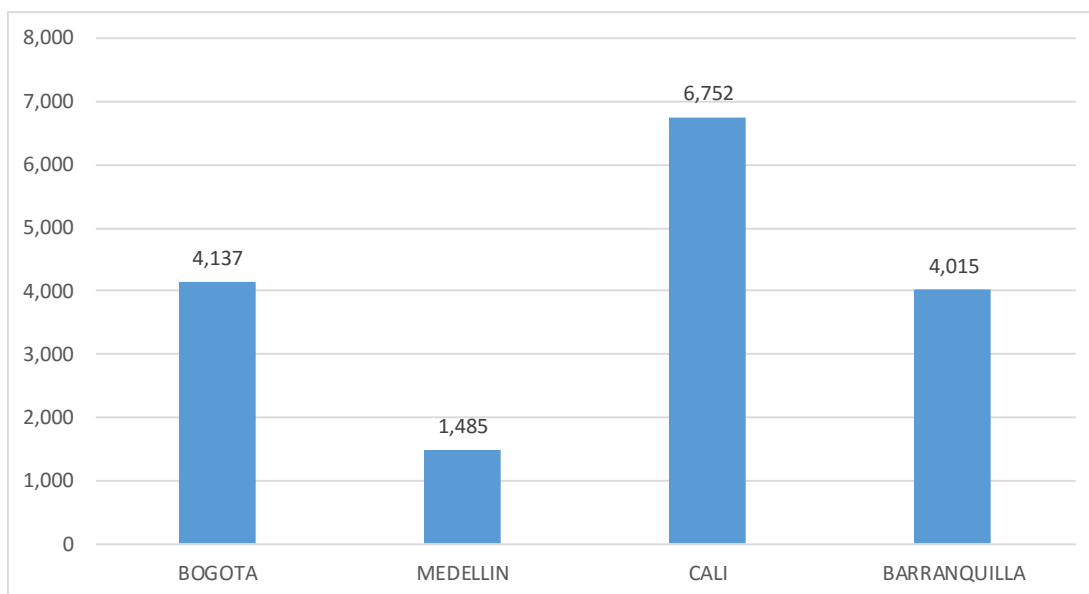
Among the four biggest Colombian cities, Bogotá has the lowest level of wastewater treatment treating only 16% of its wastewater at primary level. The remaining 84% of wastewater produced by the city is discharged without any treatment to Bogotá river. It seems this situation will change in the next few years.

Actually is under expansion and improve to second level treatment El Dorado WWTP, which will cover 20% of the wastewater city discharges; furthermore there was yet signed an agreement between the city and the national government which permit to start the construction of the Canoas WWTP in 2019-20 to begin to operate in 2022, which will cover the remaining 80% of the city discharges for the next twenty years.

Cali have only primary treatment systems too, which cover more than 80% of its wastewater discharges. The largest portion of secondary level wastewater treatment is carried out by Medellin and Barranquilla.

In the city of Barranquilla there are 2 wastewater treatment systems: the first is called "Barranquillita" (preliminary treatment), using submarine outfalls to discharge into the Atlantic Ocean and the second is called "El Pueblo" (secondary treatment).

Figure 15 Wastewater treated flow rate (l/s)



Source: Own elaboration with information from the Sector Report 2015

## 6.2. [Particular features of Bogota](#)

In Colombia, resources pass from the nation to the department and from there to the municipality; as the capital district, Bogotá is the only municipality that receives directly from the nation's budget and therefore has the same powers as a department, while the other districts are administered as district municipalities and operate in a similar way to the municipalities within their respective departments.

Bogotá has a special relationship with the department of Cundinamarca, which does not exercise authority over the capital district; the courts in Bogotá and Cundinamarca have jurisdiction over Bogotá, but not the governor or the assembly.

Bogotá is the country's city with the highest "per capita" budget, since by dividing the \$16.7 billion pesos (USD 5,565 million) between the district's 8.08 million inhabitants; each Bogota would have \$2.1 million pesos (USD 700).

According to economic analysts, this is the reason why Bogotá concentrates a quarter of the country's economy, which allows important revenues to be generated for the city's budget<sup>20</sup>: the main revenues that the city has are the tax on industry and commerce (3.37 billion pesos in 2016 -US\$ 123 million), property tax (2.07 trillion pesos in 2016 - US\$ 690 million) and transfers from the Nation (2.4 trillion pesos in 2016 - US\$ 800 million).

<sup>20</sup> The industry and commerce tax represents almost 50% of what is collected by this concept in the country, and property tax about a third.

## Part C: Sanitation in Bogota

### 7. THE FINANCING MECHANISMS FOR SANITATION IN BOGOTA

#### 7.1. Section 1: Sanitation in Bogota

##### 7.1.1. POPULATION ANNUAL INCREASE

According to official DANE projections, Bogotá's population grew from 6,840,116 registered in the 2005 census to 7,980,001 to December 2016, which means an annual growth rate of 1.41% between 2005 and 2016, 3 points above the country's total growth rate (1.17%) and largely surpassed by the growth rates of several other cities such as Riohacha (4.37%), Valledupar (2.46%), Villavicencio (2.43%), and Tunja (2.02%).

It should be noted that the annual growth rate EAAB accounts for sewerage service, in the same period, has been 2.71%, with the difference between population and user growth rates explained by large population cohorts forming new households in that period and by the sharp decrease in the average size of households in Bogotá, from 3.56% people per household in 2007 to 3.1<sup>21</sup> in 2016.

In order to make the projections, DANE applies the methodology at the national and departmental levels, based on the adjusted population results of the 2005 Census and the census reconciliation 1985 - 2005; as well as the analyses on the behavior of the variables determining demographic evolution.

The "Method of Demographic Components"<sup>22</sup> is used and at the municipal level, the semi-demographic method of "Cohort Ratio" is applied, obtaining results in accordance with the population structures of the censuses and demographic trends of the recent past, as well as short- and medium-term assumptions for the fertility, mortality and migration components.

The DANE is scheduled to conduct the next population and housing census in 2018.

##### 7.1.2. RESIDENTIAL SUBSCRIBERS TO THE SANITATION SERVICE

Bogotá has practically universal coverage of drinking water and sewerage services in its urban area. The quality of the water distributed is analyzed several times a day, both by the company and the Ministry of Health, taking the number of samples and following the protocol defined by the regulations established in Decree 1575 of 2007<sup>23</sup>. The results show that the risk index of water distributed by the EAB is equal to or very close to zero on a permanent basis.

The only urban areas not covered by water or sewerage networks are those non-legal human settlements, located in areas at risk or in environmental preservation zones. Even areas illegally occupied by human settlements that do not fall into these categories (risk or environmental reserve) are served, as required by law.

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<sup>21</sup> [http://www.dane.gov.co/files/investigaciones/condiciones\\_vida/calidad\\_vida/Presentacion\\_ECV\\_2016.pdf](http://www.dane.gov.co/files/investigaciones/condiciones_vida/calidad_vida/Presentacion_ECV_2016.pdf)

<sup>22</sup> [http://www.dane.gov.co/files/investigaciones/fichas/Proyecciones\\_poblacion.pdf](http://www.dane.gov.co/files/investigaciones/fichas/Proyecciones_poblacion.pdf)

<sup>23</sup> "By which the System for the Protection and Control of Water Quality for Human Consumption is established."



In urban areas, only those that by law cannot be served, and rural areas, which together account for less than 3% of the city's total population - use alternative systems<sup>24</sup>. In the case of water service, urban areas that cannot be legally served have precarious "illegal" networks (but openly known) connected to the EAB networks; while in the case of rural areas of Bogotá there are community water supply systems that distribute water by hoses or similar means, some of them without treatment. Mainly, for sewage in areas not served by networks, septic tanks are commonly used, although a few households (the poorest of these areas) may have latrines.

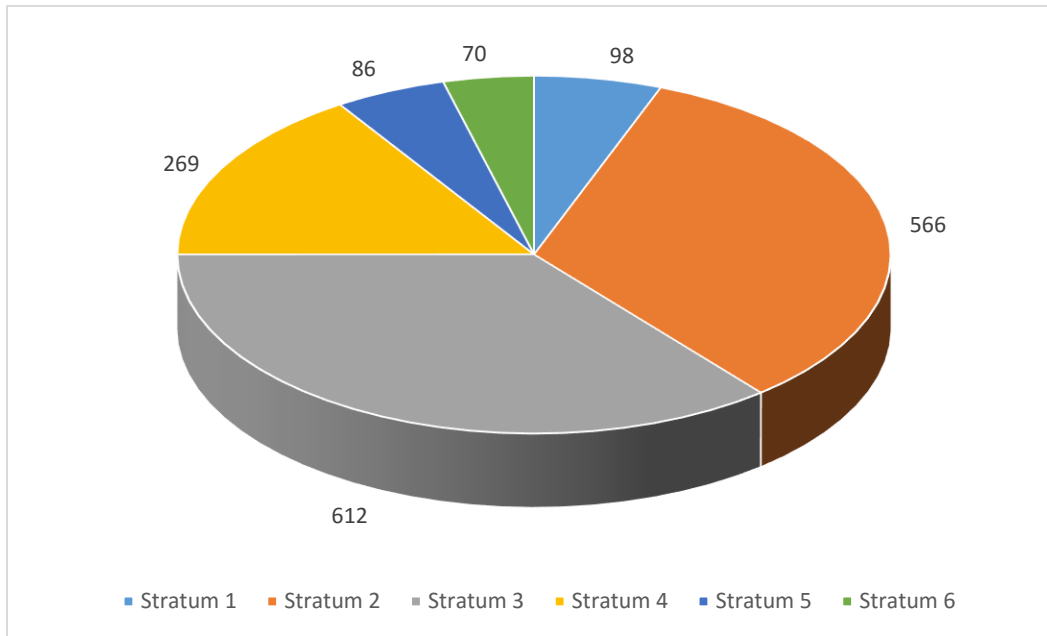
The Water Service, Sewerage and Sanitation Company of Bogotá (EAB or EAAB) is the 100% municipal-owned company that provides water and sewerage services exclusively through networks in the urban area of the city. It is responsible for nearly 7,000 kilometers of sewerage networks (approximately 72% for sanitary sewerage and 28% for rainwater), achieving coverage of more than 97%.

Understanding the question in this numeral as the number of people inhabiting residential units, as a result of the socioeconomic stratification, explained in numeral 2.2.5. of Part A, the number of residential subscribers to the city's sewerage service (1,701,002), by stratum is as follows:

Figure 16 Residential subscribers sewerage Bogotá  
Thousands 2016

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<sup>24</sup> It is worth noting that according to the Quality of Life Survey - LCS 2016, the percentage of households with access to public, private or communal sewage services is 99.5%.



Source: Own elaboration based on SUI data.

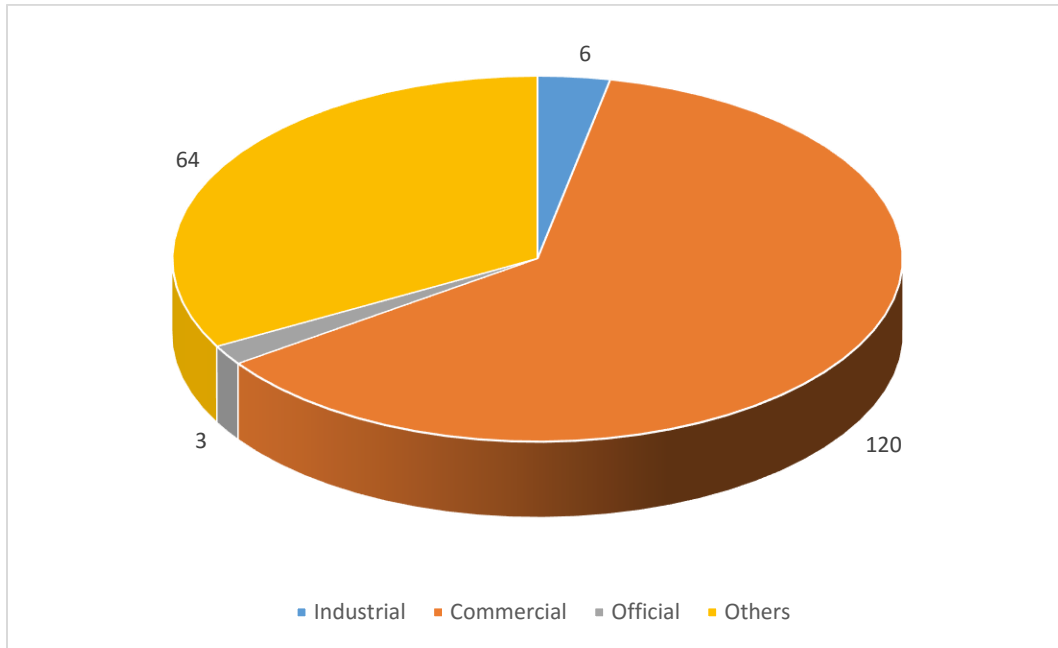
#### 7.1.3. NON-RESIDENTIAL SUBSCRIBERS OF THE SANITATION SERVICE

As previously explained, only in rural areas and risk areas or forest reserve zones, in which lives less than 3% of Bogotá's population, there are non-conventional sanitation systems. There are some private businessmen that provide septic tank cleaning services, but in a very limited number compared to other Latin American capitals such as Argentina, Uruguay, Panama or San José de Costa Rica, reflecting the low existence of alternative wastewater disposal systems.

There is no use of shared toilets or open defecation (except for the occasional use of toilets by street dwellers), due to the limited existence of free public toilets or the restrictions they face in using those of cafes, restaurants or shopping malls.

Understanding the question of this numeral as the number of offices, schools, hospitals, factories, shops, etc. that make up the non-residential sector of the city, as a result of the socioeconomic stratification, explained in numeral 2.2.5. of Part A, these properties are classified in Industrial, commercial and Official (193,800). The distribution of EAB users in these groups is as follows:

Figure 17 Non-residential subscribers sewerage Bogotá  
Thousands 2016



Source: Own elaboration based on SUI data.

#### 7.1.4. HISTORICAL TRENDS IN SANITATION

- Percentages of people attended

After a period of being in a very delicate financial situation (between 1990 and 1995), the city underwent a strong restructuring (increase) in tariffs and an aggressive investment program, achieving practically universal coverage around 2003-04.

The sharp increase in tariffs initiated in 1996 (thanks to the criterion of financial sufficiency mandated by Law 142 of 1994<sup>25</sup> and the political commitment of the mayors of the following periods) made EAB a very strong financial

<sup>25</sup> Article 87.4. "Financial sufficiency is understood to mean that tariff formulas will guarantee the recovery of operating costs and expenses, including expansion, replacement and maintenance; they will allow shareholders' equity to be remunerated in the same way as an efficient company would have remunerated it in a comparable risk sector; and they will allow the use of technologies and administrative systems that guarantee the best quality, continuity and security to its users."

company with open access to the credit and capital markets. For more than 10 years, the EAB with annual revenues of US\$ 1 million/day has been the largest water and sewerage company in the country.

Thus, thanks to the financial sufficiency obtained, the investments of the company EAB in sewerage, have allowed the sanitation of a large amount of urban territory. According to what was indicated in the supporting document of the Water Service and Sewerage Master Plan 2006<sup>26</sup>, for the year 2002 the Company's total investments reached 320 billion pesos (107 million USD). The executed plan included the Bogota River Interceptor as a major sewerage project.

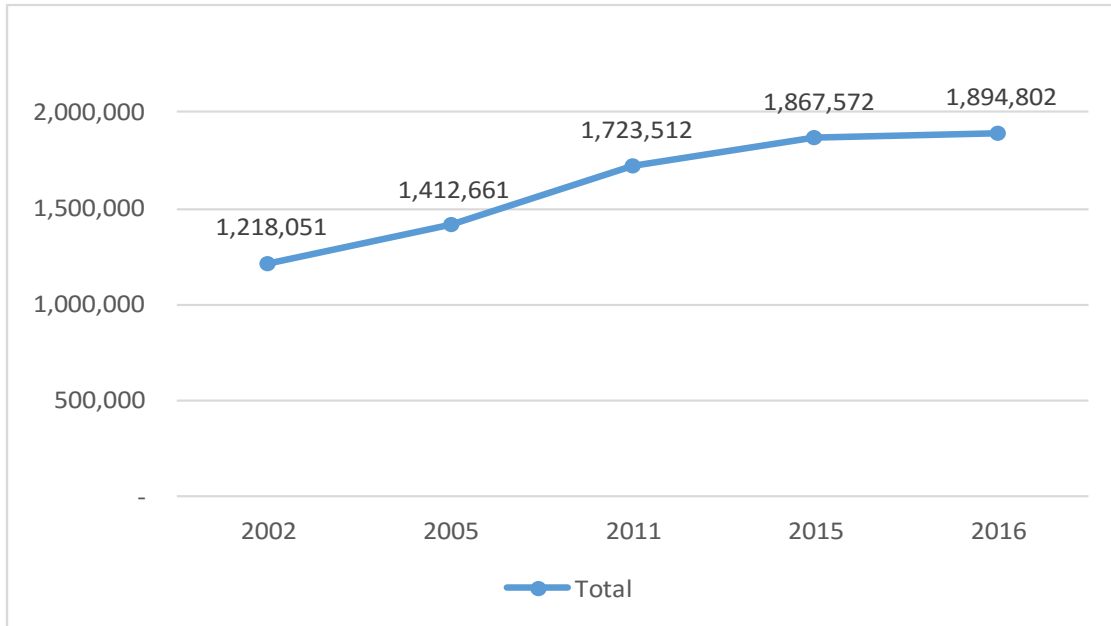
Likewise, 453 kilometers of networks were built, including 175.75 kilometers of local sewerage networks, 298.07 kilometers of interceptors to protect the control of dumping into water bodies and 95.63 kilometers of canals and collectors to protect the population from flood hazards. As a result, in sanitary sewerage coverage increased from 2001 to 2002, from 86.7% to 90.1% and in storm sewerage from 80.7% to 83.7%. As of December 2005, sanitary sewerage coverage reached 96.9% and rainwater sewerage coverage reached 93%. In the following years, EAB continued to make important investments for increasing coverage, such as expansion works (interceptors and collectors).

In summary, between 2002 and 2016 in the city of Bogotá, sewer subscribers rose from 1.2 million to 1.9 million, meaning that in 14 years 676,000 households benefited, which represents a growth of 56%.

Figure 18 Increase Sewerage Subscribers Bogotá

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<sup>26</sup> <http://www.acueducto.com.co/wps/html/resources/empresa/DocumentotecnicoDTS.pdf>



Source: Own elaboration based on SUI data.

- Types of sanitation services

Not applicable.

- Quality of wastewater treatment

The Bogota Wastewater Treatment System is immersed in the framework of action established by district and regional authorities to tackle the decontamination of the Bogota River.

The high degree of industrialization and population growth was collaborating in the process of river pollution, generating problems of bad smells, decrease in self-purification capacity, decreased extension, permanent contribution of solid and liquid waste with high pollution loads in organic matter and heavy metals and hazardous substances, a situation that led him to consider one of the most polluted rivers in the world.

In 1991, an agreement was made between the Regional Autonomous Corporation - CAR, the National Planning Department - DNP, EAAB ESP, the Technical Administrative Department of the Environment - DAMA (today the Secretariat of the Environment) and the Government of Cundinamarca in order to recover the river from its source to its mouth. The total recovery of the 365 kilometers of the river at that time was estimated at more than USD 1 billion.

The Water Service and Sewerage Company of Bogota was in charge of the hydraulic adaptation works of the Bogotá River, as well as those of the Bogota River Interceptor. Counting on the resources from the property tax of the city of Bogotá transferred by Law 99 of 1993 to the CAR, National Royalties Fund and other funds of the District, through the concession model was designed, built and operated for some years (from the year 2000), the first phase of the Wastewater Treatment Plant -PTAR- Salitre.

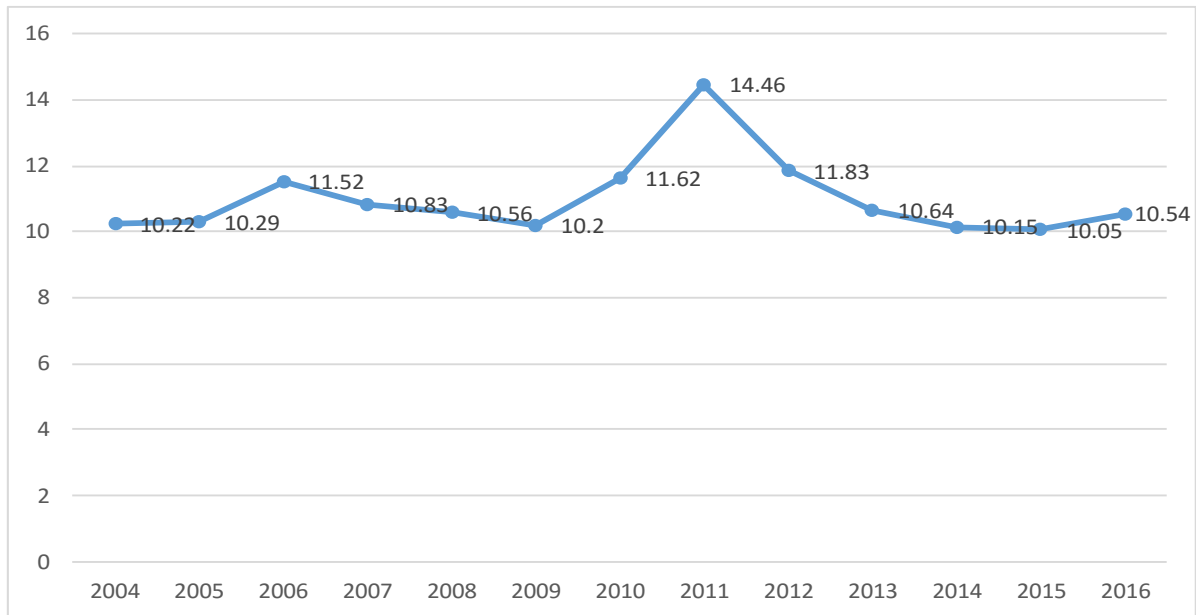
The Capital District, due to cost considerations and the change in the sanitation scheme of the Bogotá River, in 2004, delegated responsibility for the operation, maintenance and administration of the first phase of PTAR Salitre to the Water Service and Sewerage Company of Bogotá.

Since then, this wastewater treatment plant has been in the hands of the EAB, showing the following results (2004 to 2016) for the indicator of Treated Wastewater - ART<sup>27</sup>, for the city of Bogota, as reported by the Environmental Observatory of Bogota:

Figure 19 Wastewater Treated ART (Million m<sup>3</sup> / month)

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<sup>27</sup> This indicator shows the volume of both industrial and domestic wastewaters treated by the District at the El Salitre Wastewater Treatment Plant.



Source: Own elaboration based on the Bogotá Environmental Observatory data (average for the month)

- Regulation of emptying services

The following are the additional standards to those mentioned in section 2.2. of Part A of this report, which were recently issued and which generally regulate the provision of sewerage services at the national level:

- ✓ Decree 1898 of 2016 of the Ministry of Housing, City and Territory - MVCT

"By which Title 7, Chapter 1, is added to Part 3 of Book 2 of Decree 1077 of 2015, which partially regulates Article 18 of Law 1753 of 2015, in relation to differential schemes for the provision of water service, sewerage and waste services in rural areas."

- ✓ Decree 1272 of 2017 of the Ministry of Housing, City and Territory - MVCT

"By which Chapter 2 is added to Title 7, Part 3, of Book 2 of Decree 1077 of 2015, which partially regulates Article 18 of Law 1753 of 2015, in relation to differential schemes for the provision of water service, sewerage and waste services in areas of difficult access, areas of difficult management and areas of provision, in which due to particular conditions the standards of efficiency, coverage and quality cannot be met."

- ✓ CRA Resolution No. 800 of 2017 of the Commission for the Regulation of Drinking Water and Basic Sanitation.

"By which the option of measuring discharges in the domestic public sewerage service is established."

- Changes in people's perceptions of sanitation?

With regard to citizen perception of water and sanitation, since 1988 the "Bogotá as we go" survey has been carried out, which measures the level of satisfaction of Bogotá's citizens with the supply of goods and services in the capital. The latest survey carried out between 14 September and 16 October 2017 showed 76% satisfaction with the city's water and sanitation service. This low perception may be due to the cost of providing the service, which, as mentioned above, is the highest in the country. Likewise, the city's high density and population growth have meant that the sewerage system does not respond efficiently and during intense rainy seasons is insufficient to cover the increase in flow, generating flooding in the city.

The Cities as We Go Network perception survey presents a satisfaction ranking in aspects such as pride, subjective well-being, economic situation, education, health, health, security, public services, mobility, citizen behavior and public management, which are key to improving the quality of life in the main cities of Colombia. In 2016, Bogotá achieved a satisfaction level of 81% in water and sewerage, below that of Medellín (91%) and Barranquilla (88%).

- Political importance of sanitation

As part of the EAB's environmental policy with regard to sanitation, properly managing the drainage of rainwater and wastewater in the city has involved an arduous task of environmental sanitation, which is carried out through the development of programs such as the Sanitation and Discharge Management Plan -PSMV- to detect and correct the problems that affect water bodies, in order to improve the quality of the water resource.

Likewise, the PSMV includes the mega-works that the company is carrying out to recover the city's rivers and the sanitation of the Bogotá River, through the construction of interceptors and collectors in the Salitre, Fucha and Tunjuelo rivers. In addition, at the Wastewater Treatment Plant (PTAR Salitre), the wastewater produced by more than two million people, mainly households, offices, schools and universities, is treated before it reaches the Bogotá River.

#### 7.1.5. [PLANS TO ACHIEVE TOTAL COVERAGE BY 2030](#)

As a first step, the EAB in the master plan for water service and sewerage, and therefore in the investment plan that forms part of the tariffs, has defined the priorities within which, for the sewerage service, investments in local networks, rehabilitation of priority infrastructure, wastewater interceptors, canals and collectors are contemplated.

With regard to wastewater treatment, in April 2017, construction began on the second phase of PTAR Salitre, which will last for 4 years and will enable the treatment of approximately 605 million liters of domestic wastewater per day from the north and center of the city, going from treating 4 m<sup>3</sup>/s of wastewater to 7 m<sup>3</sup>/s. Likewise, by means of a more advanced process, it will stabilize the sludge achieving the degradation of organic matter, converting it mainly into methane gas, which will be used to provide around 30% of the energy required by the plant for its operation.



Similarly, since 2003 work has been carried out, based on an agreement between the CAR and the District, on a second plant (PTAR Canoas) located near the Muña reservoir, at the Canoas site, to treat the wastewater generated in the Fucha, Tunjuelo and Soacha basins.

Last October 2017, the Mayor of the city announced that it has the resources to decontaminate the river (1,333 million USD) - through the expansion of PTAR Salitre and the construction of the wastewater treatment plant (PTAR) Canoas - which will clean 70% of the wastewater produced by the Bogotanos - of which 500 million USD will be provided by the CAR, 20.34 million USD by the Governorate of Cundinamarca, and the remaining amount will be provided by the District through the District. USD 812 million). Work on PTAR Canoas is scheduled to begin in 2019 and be completed by 2024.

## 7.2. Section 2: Financing sanitation in Bogota

### 7.2.1. THE MOST IMPORTANT TYPES OF SANITATION

Not applicable.

### 7.2.2. CAPITAL AND OPERATING COSTS:

The development of the city's drinking water and sewerage services is basically supported by the tariffs applied to users, which, in accordance with the tariff regulation in force in the country since 1996, are established to fully cover the costs of the services, both in their administration and operation components and in their investment component.

The tariff methodologies in force in the country since 1996 are of the "utility approach" type (as defined in AWWA Handbook M6), according to which tariffs must recover the costs reflected in the companies' income statements, which implies that, for the investment component, the tariffs cover only the depreciation and cost of capital (interest tariff per capital base) of the lender.

It should be remembered that in the case of low-income users, subsidies are applied to their bills, which are financed with cross-subsidies plus budgetary contributions from the municipality. The local government's contribution to the EAB for this purpose represents less than 5% of the EAB's annual revenue. The minimum living allowance is covered with the same resources that the EAB transfers to the municipality as annual earnings.

Given the long useful life of the assets of sanitation services, tariffs recover only between 2.5% and 5% of investments annually, making it necessary for companies to go to the capital market (credit or bonds) to obtain financing for their investments.

Bogotá - like Colombia's main sanitation companies - has great access to the internal and external capital markets; it has received credit from the country's main banks and multilateral banks (IDB, World Bank) and has even issued bonds in the local market.

However, for the financing of projects to decontaminate the Bogotá river (see numeral 7.1.5. above), whose cost is estimated at US\$ 1,333 million, 39% will be financed with budgetary contributions from the National Government of the Regional Environmental Authority (CAR) and the Government of Cundinamarca, thus avoiding transmitting its total cost to user fees.

#### 7.2.3. FINANCING TO THE PLANS TO ACHIEVE TOTAL COVERAGE

It was answered in the previous numeral.

### 7.3. Section 3: Institutional and political aspects

#### 7.3.1. DECISION-MAKING AND POLICY

The Vice-Ministry of Water and Sanitation, created in October 2006 under the Ministry of Environment, Housing and Territorial Development, is responsible for establishing the national drinking water and sanitation policy.

The water quality policy and standards for human consumption are regulated by the Ministry of Health and Social Protection, while the policy and standards for discharging wastewater into the environment are established by the Ministry of Environment and Sustainable Development.

Economic regulation (tariffs), quality of services (continuity, complaints, cuts, etc.) and the behavior of providers correspond to the Commission for the Regulation of Drinking Water and Basic Sanitation (CRA). The control of the application of these rules and the legal rules for the provision of services is the responsibility of the Superintendence of Public Services at Home (SSPD).

In the Development Plan defined for the current presidential term (2014-2018), the Government proposed to improve the performance of the water and sanitation sector through the following measures:

- I. Strengthening the regulatory framework;
- II. Implementation of technical assistance programs;
- III. Financial support to promote modernization and efficient management, as well as subsidizing the poor; and
- IV. Rationalization of the institutional framework at the national level to improve sector coordination. The Government also supports private enterprise participation in the sector.

Additionally, in Colombia there is the Sector Technical Regulation (STR), which was recently updated by Resolution 0330 of 2017, issued by the Ministry of Housing, City and Territory, which regulates the technical requirements to be met in the design, construction, commissioning, operation, maintenance and rehabilitation stages of infrastructure related to public water, sewerage and sanitation services.

Within the framework described above, it is up to the Mayor of the City to define the goals for coverage and quality of water and sanitation services in the city and to the administration of the EAB to define its plans (water and sanitation teachers; investment plans, among others), as well as the projects that will technically respond to the city's

requirements and seek their financing, having to go to the City's Municipal Council to approve the required future indebtedness.

#### 7.3.2. [PLANNING THE SANITATION SECTOR](#)

See responses to numerals 7.1.4, 7.1.5 and 7.2.2.

#### 7.3.3. [OPERATION OF SANITATION SERVICES](#)

- Operation and maintenance of sanitation services

The operation and maintenance of the sewerage service is assumed directly by the EAB and charged to subscribers through tariffs. See answer to numeral 7.2.2. above.

#### 7.3.4. [FINANCING THE SANITATION SECTOR](#)

See answer 7.1.5 above and answers 7.2.

### Part D: Sanitation challenges in Bogota

#### 8. THE FINANCING GAPS AND OBSTACLES TO URBAN SANITATION.

Bogotá, nor any of the 10 (or even 20) large Colombian cities, serve as an example to identify the financing gaps in water and sanitation services and especially wastewater treatment that the country faces.

The financing needs for investments in sanitation and wastewater treatment in Colombia are for municipalities with less than 100,000 inhabitants and, of course, rural areas. It is clear that these services present significant economies of scale that these municipalities and areas cannot take advantage of. In that sense, the great challenge facing the country is to achieve a national subsidy scheme for the investments required to achieve universal coverage and the treatment of 100% of wastewater in these areas.

This is how the national government has attempted to identify gaps in the efficient provision of water and sanitation services at the rural level. In July 2014, CONPES<sup>28</sup> document 3810 POLICY FOR THE SUPPLY OF DRINKING WATER AND BASIC SANITATION IN THE RURAL AREA was approved in document 3810, with the objective of promoting access to drinking water and basic sanitation in rural areas, contributing to the improvement of the population's living conditions, setting a target of 2.5 million people with a basic sanitation solution by 2024.

To this effect, strategies were established such as promoting the structuring of sustainable schemes through the creation of authorized organizations and linking specialized operators; technical assistance programs; changes in

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<sup>28</sup> The National Council for Economic and Social Policy -CONPES- was created by Law 19 of 1958. It is the highest national planning authority and serves as an advisory body to the Government on all aspects of the country's economic and social development. To achieve this, it coordinates and guides the bodies in charge of economic and social management in the government, through the study and approval of documents on the development of general policies that are presented in session.

GSP distribution criteria to ensure the allocation of resources to rural areas and updating of SARs (which became effective in 2017), among others.

To meet these commitments, between 2014 and 2024, a budget of 7,634,989 million pesos was estimated for 2013 (2,748.2 million USD), represented mainly by the construction of infrastructure (66%) and intradomiciliary connections<sup>29</sup> (23%) and resources from the different sources of financing were allocated: General Budget of the nation - PGN (31%), General System of Participations - SGP (35%), General System of Royalties - SGR (27%) and Departmental Plans of Water - PDA (7%).

#### 9. FINANCIAL MECHANISMS TO IMPROVE THE SANITATION SECTOR.

As explained above, the government has sought to raise the profile of the sector to give greater impetus to increased coverage, surpassing the Millennium Development Goals for the sector in Colombia, and improving the quality of service, especially in small cities and rural areas with the largest service gap.

To this end, the Vice-Ministry of Water and Sanitation was created in 2006, from which four new programs have been launched:

- Departmental Water and Sanitation Plans
- Settlement Sanitation Program (SPA) within the framework of a Comprehensive Neighborhood Improvement Program
- Municipal Dumping Sanitation Program to increase the volume of municipal water treated.
- Hand Washing Program

The Departmental Water and Sanitation Plans program, as explained above, serves to plan and harmonize regional resources and service delivery schemes at the country department level.

Similarly, in relation to the gaps in the rural sector with regard to the adequate provision of drinking water and sanitation services, CONPES document 3810 of 2014 seeks to resolve these obstacles and increase the flow of finances that allow greater investment, as explained in the previous section.

#### 10. INNOVATIVE AND NON-TRADITIONAL FINANCING INSTRUMENTS.

##### 10.1. [Incorporation of new subsidy mechanisms](#)

The innovative mechanisms used in Colombia to maximize coverage of water and sanitation services are

- a) Subsidies (crossed and direct) to the bill for the basic consumption of the poorest users.
- b) Minimum vital consumption: consumption without payment for the first 5 or 6 m<sup>3</sup>/family/month, to the poorest families within the same poor strata.
- c) Subsidies for intra-domiciliary connections

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<sup>29</sup> It is assumed that in 49% of households, intradomiciliary connections will be made (3 points - shower, sink, toilet).

d) Prepaid water (and sewerage) supply

10.1.1. SUBSIDY SYSTEM (CROSSED AND DIRECT)

See response to item 5.2 Part A of this report.

10.1.2. MINIMUM VITAL WATER

In addition to the system of subsidies to the lawsuit previously filed and without having a legal basis in the Colombian legal framework, but using as a basis pronouncements of the Colombian Constitutional Court and the official declaration made by the United Nations of water as a human right<sup>30</sup>, some Colombian mayors have established a subsidy scheme called "Minimum Vital Water".

The concept of a minimum vitality is presented as a way to locally concretize the official declaration of water as a human right, recognizing that a minimum quantity of water is indispensable for a dignified life and a precondition for the realization of many other human rights.

Water as a human right is supported by concepts such as:

- No one can be deprived of enough drinking water to meet their basic needs.
- For people, water supply and availability must be continuous for various personal and domestic uses.
- Water quality must be sufficient to make it fit for human consumption.
- Accessibility to water must be a priority in the face of various circumstances of physical and economic access, as well as information on its supply and the prohibition of discrimination.
- The sustainability of the water resource must be guaranteed, so that it is available for future generations under the same conditions as described above.

Furthermore, the human right to water is seen as a fundamental autonomous social right, which is a necessary condition for the realization of other rights contained in the 1948 Universal Declaration.

In the above context, in Colombia the vital minimum is defined as the quantity of drinking water required by each person to meet their basic needs and to preserve their life and health, which must be provided in sufficient quantities and in high quality conditions.

In Colombia, in 2008, a citizens' initiative called "Referendum of Water" was presented to the Congress of the Republic, which proposed that access to water should be a fundamental right, and that a vital minimum free of charge should be guaranteed for all households regardless of their condition or capacity to pay. Finally, this initiative did not prosper (Hernández Escolar & Méndez Sayago, 2013).

In spite of the above, in 2009, Medellín was the first city to implement a minimum vital drinking water program, establishing that families who are in extreme need, according to an evaluation carried out by the municipality itself

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<sup>30</sup> This declaration was a product of the International Covenant on Economic, Social and Cultural Rights (ICESCR) and General Comment 15, 2002. General Assembly of the United Nations (UN), which was reinforced by the UN General Assembly in 2010 through Resolution A/64/L. 63/Rev. 1. Similarly, the Dublin Declaration and the Rio Summit, both held in 1992, laid the foundations for General Comment 15, which was updated in 2012.

(without the intervention of the provider) would have the right to consume, at no cost to the family and to be fully covered by the municipal budget, an amount of 2.5 m<sup>3</sup> per month (equivalent to 83.3 liters per person) per day.

For its part, Bogotá established the vital minimum in 2012 for strata 1 and 2, which was set at 12 m<sup>3</sup> bimonthly per dwelling (equivalent to 50 liters per person per day). More recently, Cali, since 2015 and Pereira and Neiva (which will begin to implement it in January 2017) have implemented similar programs.

The differential characteristics of the schemes of Bogota and Medellin are:

- Bogotá: Applies to all users of strata 1 and 2; applies to the first 6 m<sup>3</sup>/home/month. Only that volume is provided free of charge in the water supply service (not applicable to sewerage or fixed charges). Applies from 2012.
- Medellín: It is applied to users of strata 1 and 2 in an exceptional way, once conditions of extreme lack have been verified. Applies to the first 2.5 m<sup>3</sup>/person/month. This volume is provided free of charge in both the water supply and sewerage services and without payment of fixed charges. Applies since 2009.

The scheme of the city of Cali follows exactly the same guidelines as the Bogotá case.

It should be stressed that the Minimum Vital programs are, in all cases, complementary to the cross-subsidy scheme, so that the share of consumption exceeding the minimum vital will be subject to subsidies up to the total of basic consumption, depending on the stratum and subsidy levels applied in each municipality.

#### 10.1.3. [SUPPORT FOR INTRADOMICILIARY CONNECTIONS](#)

The program of the Ministry of Housing "Connect with Water" aims to promote access to public water service and sewerage services, through the construction or improvement of intradomiciliary and residential connections when technically required for water service and sewerage services, through budgetary contributions from the Nation and/or territorial entities as a counterpart to cover their costs, in the following areas.

The Ministry determines the municipalities benefiting from the program of intradomiciliary connections of strata 1 and 2 and prioritizes the districts and/or rural nucleated areas thereof, through the application of the targeting criteria established by Decree 1350 of 2012, so that they have drinking water supply and a drainage system, as well as differentiated spaces for bathrooms, kitchens, laundry rooms and bedrooms.

Has been reported for 2015-2016, a total of 31,000 poor families from 20 cities that went from the hose to the shower, from the latrine to the toilet, from the sink to the dishwasher and from the bath to the laundry room. The maximum value of the subsidy per beneficiary property, for the intervention of the intradomiciliary and residential connections of the water and sewerage services, is 9.8 SMLMV (2,409 USD).

#### 10.1.4. [PREPAID SYSTEM](#)

The prepaid water system, regularly called "Option of Advance Payment", is a modality for measuring and paying the household water service and sewerage services, in which the provider offers the alternative of prepayment of fixed charges and consumption of water and sewerage, as well as the collection of the public toilet fee, when there is a joint billing agreement in force.

The tariff regulation of this option for water and sewerage services is contained in Resolution CRA 665 of 2013, whose main rules and definitions are as follows:

- The "Refill for consumption" is the amount of money by which a subscriber linked to the prepayment option cancels, prior to its consumption and dumping, a certain equivalent amount of cubic meters of aqueduct and sewerage.
- The provider of water service and sewerage services may offer all its subscribers this alternative, informing in any case, the variations of uniform contract conditions that accompany this option. Once the subscriber declares his or her willingness to use the prepayment option, under this alternative, the provider will determine the conditions for the installation and financing of the prepaid meter.
- The provider must indicate the different means that will be used to carry out the minimum monthly charges and the consumption surcharges required by the subscriber. It must also provide subscribers with the means to make use of the minimum monthly charges and the consumption recharges they require, 24 hours a day.
- The right of the company to suspend the service for non-compliance will be configured when the subscriber does not pay the minimum monthly charge for the term set by the provider, without exceeding in any case the failure to pay the minimum monthly charges for the last three (3) months.
- The value of the minimum monthly charge and the recharge for consumption shall be that corresponding to the rates in force at the time of payment; consequently, the updating of these rates shall not apply to payments previously made by users.

The Prepaid Water program, established by Public Companies of Medellín (EPM), is an exploratory program, not yet available on a massive scale, aimed at delinquent users who have been cut off for lack of payment, and that seeks to provide access to the neediest by improving their living conditions.

Users make a request to the provider, fulfilling certain requirements. Once the request is accepted, EPM installs a meter and gives the user a smart card, with the possibility of recharging from approximately US\$2 to a maximum of US\$40. There are numerous charging points throughout the city of Medellín.

The cost of the meter and card is borne by EPM, delivering the meter through a lease agreement with the obligation to return it in the event of withdrawal from service. Users can return to the post-payment service by submitting the respective request.

The card is inserted into the meter and, if charged, will allow water to flow into the home and will be discounted from the remaining value on the card, depending on the use of the water service, as well:

- Fixed charges for water service and sewerage (For each m<sup>3</sup> consumed, the user cancels a part of the fixed charge)
- Charge for water and sewerage consumption (m<sup>3</sup>)
- Debt repayment value (maximum 10%)
- Toilet fee collection

The values of fixed charge and consumption charge are applied taking into account subsidies and/or contributions according to the stratum in which the user is classified.

The recharge carried out has no expiration date, but its cost depends on the number of inhabitants of each household, the consumption habit and the technology of washing and sanitary appliances.

On June 26, 2015, EPM launched Prepaid Waters commercially, to which 7,351 subscribers were linked.

11. THE POLICIES OF THE NATIONAL GOVERNMENT TO IMPROVE THE SANITATION SECTOR.

- The likelihood that there will actually be more funding for sanitation.

It does not seem necessary to require a greater amount of resources for sanitation, but rather to redirect and concentrate the currently allocated resources towards municipalities that do not have the economic capacity to cover their needs in terms of fees.

Whichever beneficiary identification scheme is used in the country, it is clear that the portion of the population potentially benefiting from subsidies should be reduced, openly limiting the subsidy exclusively to users of strata 1 and 2, reducing the population potentially benefiting from more than 65% of the country's population to no more than 30% or 40%, which would make it possible to focus the delivery of resources and achieve self-financing of the cross-subsidy scheme, by means of cross-subsidies.

While it is true that most municipalities in the country do not subsidize Stratum 3 by decision of their municipal councils alone, it is also true that for political reasons (especially during political campaigns) in several of the country's large cities, subsidies are being granted to Stratum 3, which means that considerable budgetary resources are devoted to assisting a population that, for the most part, does not require such assistance.

- Arguments the World Water Council and others should communicate to whom to improve this probability.

The need to concentrate government aid and assistance in municipalities and towns with lower economic capacity and that will not be able to meet their sewerage and treatment needs based on tariffs to their users or the transfers currently received through the GSP.