Inclusive Urban Sanitation Stories

Water and sanitation for the poorest communities in Colombia's cities

Contributed by **Diego Polanía, Expert Commissioner, Water and Sanitation Regulatory Commission (CRA)**

Figure 1 – Aerial aqueduct, San José la Cima II sector, Commune 3, Medellin. Source: EPM, Columbia

Summary

By 2020, Colombia had achieved 81% coverage for urban sewerage and 85% for urban drinking water. However, these high percentages mask gaps and inequalities that affect principally the poorest inhabitants in the country.

Reaching the last mile of service delivery is both challenging and expensive. In response, in 2017 Colombia's National Government designed a specific strategy known as 'Differential Schemes', and subsequently, in 2021 the Water and Sanitation Regulatory Commission (CRA) issued a regulation to incentivize utilities to close gaps in service coverage and quality for drinking water, sanitation, and solid waste management. While accepting lower standards in the interim, CRA aims to ensure that all urban areas enjoy the same service standards in the long term, through progressive improvements in services over time. A key principle of the innovative regulatory framework is to require the service provider to establish key performance indicators

(KPIs) that commit to continuous improvement in coverage, quality and sustainability each year, and then hold them accountable to those commitments. In general terms, incentives come from a more flexible approach and the option to access financial subsidies from local government and financial incentives from central government.

Although the enabling (normative) environment is now complete, implementation is still a work in progress, but in the city of Medellin, great results had been achieved. The municipality and the utility Empresas Públicas de Medellín (EPM) had connected 14,908 households to the services, comprising 59,632 inhabitants in 32 neighbourhoods.

Overview

Geographical information

Country: Colombia
City: Medellin
City population: 2,427,129

Problem

- Rapid urban population, 4.9 million living in precarious settlements around Colombia in 2016.
- Inadequate access and poor quality of water supply and sanitation services in impoverished urban areas.
- Poor coordination, unrealistic standards for provision in the short term, high backlog of investments, financial deficit and low valuation of public services by users.

Solution

- The ‘Differential Schemes’ approach for the provision of public services allow utilities to prepare a Management Plan that includes goals, indicators, deadlines, objectives, investments and sources of financing, and the actions for ensuring the provision of the public services. Regulations allow utilities, on a provisional basis, to provide water and sanitation services without adherence to standard parameters. However, at the end of the scheme, utilities must fully comply with general sector regulations.
- There are currently 14 municipalities in some of the stages of implementation of the Differential Schemes approach, but until now, significant results can only be seen in the city of Medellin, where the municipality and the utility Empresas Públicas de Medellín (EPM), between 2020 and 2022 had connected 7,413 households to the services, comprising 29,652 inhabitants in 32 neighbourhoods. The goal is to reach 14,200 households by 2023.

Problem

Colombia has various problems of poverty and social vulnerability. In 2021, 14,654,000 and about 4,013,00 people lived in monetary poverty and extreme poverty in cities, respectively. As of 2021, more than 5.2 million people were in precarious settlements, a figure that has certainly increased due to the population being displaced by violence and migrants coming from neighbouring countries.

Due to technical, legal, or social conditions, in these impoverished urban areas, it is not possible to meet the standards of efficiency, coverage and quality in the provision of water and sanitation services. Specifically, in Colombia, we found the following circumstances: 1) Lack of coordination among the central government, local governments and service providers, so that investment plans lead to non-functional and incomplete works; 2) A significant percentage of territorial entities that provide the service directly, without adequate technical and financial knowledge (12.17% in drinking water and 24.8% in sanitation); 3) Large backlog of investments in construction, expansion, improvement and optimization of water and sanitation systems; 4) A deficit in the cross-subsidy scheme, based on local high income users being charged higher rates to cover for low income users' rates, due to unequal income distribution and socioeconomic conditions that affect the market; 5) Low valuation of public services by users that believe that the right to water and sanitation implies that these services should be provided free of charge leading to a low willingness to pay.

In 2020, 81% of the population had coverage for urban sewerage and 85% for urban drinking water, respectively. However, high coverage percentages mask gaps and inequalities for the inhabitants of the poorest neighbourhoods in the cities. Specifically in the case of Medellin, in 2018, 98.4% and 97.2% of citizens had access to drinking water and sanitation, respectively. Hence around 39,000 and 68,000 people lived in Medellin without adequate services provision.

Solution

The National Government designed the Differential Schemes approach in 2017 as a set of technical, operational, legal, social and managerial conditions to allow access to water suitable for human consumption and basic sanitation in certain urban areas, considering its particular conditions. Subsequently, the Water and Sanitation Regulatory Commission (CRA) issued the specific regulation for these schemes in 2021.

The implementation of these schemes begins with the identification of informal settlements by the municipalities. Once identified, the municipality certifies that these areas will be legalized and therefore, services can be provided there. It offers a practical solution for informal settlements that are embedded in local plans for formalization.

Afterward, the municipality and the utility sign an agreement, and the latter prepares a Management Plan. In this plan, the utility must define the goals, indicators, deadlines, objectives, investments and sources of financing, and the actions for ensuring the provision of the public services in order to comply with the standards for the provision of such services.

Regulatory developments allow utilities, on a provisional basis, to provide public water supply and sanitation through alternative methods, different from public pipes and non-conventional sewage systems, such as septic tanks or latrines, as far as they are technically feasible and economically sustainable. However, the definitive supply and sanitation systems, at the end of the differential schemes, must comply with standard parameters.

These provisional systems should guarantee a minimum volume of water, which must increase until achieving at least the supply of a basic consumption volume established by the CRA (between 11 and 16 cubic metres per connection by month, according to the city altitude above sea level). In addition, for charging collective or individual users, utilities must estimate the consumption of subscribers who do not have micro-metering using alternative parameters defined by the CRA, such as using the average consumption of subscribers living in similar conditions and must include a plan to increase micro-metering. The requirement for sanitation provision is that utilities comply with the goals stablished by the environmental authority in their own Sanitation and Discharge Management Plan.

The application of the differential scheme in urban areas is not mandatory. It is temporary, optional and corresponds to a business decision of the utility. However, CRA's regulation establishes incentives to bring services to these difficult-to-manage areas: the possibility of obtaining various sources of financing, deadlines for meeting goals in accordance with the conditions of the context, service levels in accordance with the area's characteristics, no evaluation of the level of risk in the provision of services, monitoring based on the provider's plan and easy to apply formulas for estimating costs.

There are currently 14 municipalities linked to the government programme, known as *'Agua al Barrio' ('Water to the Neighborhood'),* which implies that agreements have been signed between the municipality and the utility company. Overall, there are already 88,220 people connected in 58 neighbourhoods served under this scheme in 7 municipalities. This implies an advance close to 50% of the programme's goal of over 205,000 people receiving benefits. However, management plans have yet to be formalized in some of those municipalities in order to continue advancing in the implementation of the programme.

The programme has advanced in 7 cities, but mainly in the city of Medellín with the *Connections for Life* or *'Conexiones por la Vida'* programme. Between 2020 and 2022 the municipality and the utility EPM had connected to the services 7,413 households, comprising 29,652 inhabitants in 32 neighbourhoods. It guarantees the supply of drinking water and sanitation in informal settlements with the construction of non-conventional networks, at no cost to users and on a provisional basis, and with community meters.

As an example, in 2020 EPM built and now operates the aerial aqueduct in the San José la Cima II sector in Commune 3, benefiting 144 families who for more than 20 years had not had drinking water due to ground conditions. This aerial network has 461 metres of pipework. Similarly, there is another non-conventional sanitation system in the La Honda sector in Commune 3 of Medellin (Figure 3), where the first aerial sewerage system was built in 2021 with a length of 30 metres, benefiting 166 families. It is important to mention that the materials used in the non-conventional systems are of the same quality and specifications as those used in regular ones; the variation lies mainly in the diameters and depths that can be used, in order to avoid invasive interventions that can destabilize the soil.

Figure 3 – Aerial sewage system – La Honda sector in Commune 3 of Medellin. Source: EPM, Columbia

The programme is financed with resources provided for in the EPM Regulated Works and Investment Plan. Besides, within the framework of this programme, the National Government announced in 2021 a commitment of $3 billion Colombian Peso (around USD 721 million) to strengthen new water connections in the city of Medellín.

Overall, the differential schemes improve continuity and quality conditions, reduce risks in the territories and improve the health of the community, which was being affected by the sewage that filters and circulates through the land.

In addition, social support is provided for strengthening the development of the communities. In Medellin, the population of the programme's area of influence has an active part in the development of the intervention and has a sense of belonging. Leaders, children, older adults and the community in general are participating through training and workshops related to the efficient use of water, care for the environment, co-responsibility and leadership. Between 2020 and May 2022, 127,000 people have participated in these meetings. In addition, for the construction and operation of the systems, EPM employs personnel from the communities; as of March 2022, there were 451 people employed, of which 35% belong to the programme's areas of influence.

For the forthcoming years, the goal of the differential schemes programme in informal neighbourhoods is 203,000 people served with water and sanitation services in 72 informal neighbourhoods in 30 cities in the country.

Lessons learned

The regulation for differential schemes allows utilities to build networks and guarantee services at affordable prices for the poorest communities in the cities. The utilities have the responsibility to guarantee water fit for human consumption and to comply with the goals stablished in their Sanitation and Discharge Management Plan. The other KPIs regarding continuity, quality and micro-metering can be achieved within reasonable timeframes.

In order to advance in the implementation of the differential schemes, more agility is needed to formalize the management plans. This requires coordination and cooperation between entities from the national and local order, so that public policies, regulation and monitoring are aligned.

Another lesson learned is that the specificities of the differential schemes and the tariff design must be as simple as possible, so that the municipalities can understand and apply them.

The utilities must accompany the community during operation, carrying out permanent education programmes on efficient use of the resource, payment culture and care of the infrastructure. In addition, infrastructure projects and the system operation must involve the beneficiary community, so that the intervention is successful and generates recognition among the inhabitants, thus improving the valuation of the service and the willingness to pay.

Finally, an impact evaluation of the programme is required to see its benefits in the short and medium term and the elements to be improved.

Useful links

https://normas.cra.gov.co/gestor/docs/resolucion_cra_0943_2021.htm#2.8.1.1

https://www.cra.gov.co/sites/default/files/multimedia_case/2019-01/Documento-AIN-FINAL-EDU-Dic-2018.pdf

https://cu.epm.com.co/institucional/proyectos/conexiones-por-la-vida#Abastecimiento-Comunitario-de-Agua-en-zonas-de-dif-cil-gesti-n-825

https://minvivienda.gov.co/sala-de-prensa/en-el-marco-del-programa-de-agua-al-barrio-el-gobierno-nacional-anuncio-3-mil-millones-para-fortalecer-nuevas-conexiones-de-acceso-agua-en-la-ciudad

https://cu.epm.com.co/institucional/sala-de-prensa/noticias-y-novedades/interna-noticia/conexiones-por-la-vida-avanza-cumpliendo-con-las-metas-propuestas-para-este-cuatrienio

https://cu.epm.com.co/institucional/proyectos/conexiones-por-la-vida#Habilitaci-n-viviendas-y-conexiones-estratos-1-2-y-3-826

https://cu.epm.com.co/institucional/proyectos/conexiones-por-la-vida#Sectores-en-ejecuci-n-programa-conexiones-por-la-vida-2020-827

Further reading and references

- Decree 1272/2017
- Regulatory Impact Analysis Document - Diagnosis and identification of problems and objectives, evaluation and selection of the best alternative
- Resolution CRA 943/2021
- Report: Informe Programa Conexiones por la Vida Agua 2020–2023. Cut off May 31, 2022. EPM.

About the author

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About the institution / organisation

CRA is a special administrative entity of the Ministry of Housing, Cities and Territories with administrative and technical autonomy, governed by Colombia's Constitution and legislation. Its mandate is to improve conditions for the provision of drinking water, sanitation and solid waste management services through promoting or stimulating competitive approaches.

Comisión de Regulación de Agua Potable y Saneamiento Básico

www.cra.gov.co

Special thanks to EPM who provided important information about their programme.

About the IWA Inclusive Urban Sanitation Initiative

IWA's Inclusive Urban Sanitation initiative responds to a huge and growing public need - safe sanitation in combination with access to safe drinking water and hygiene underpins good health. The aim of this initiative is reshaping the global urban sanitation agenda by focusing on inclusive sanitation service goals--and the service systems required to achieve them - rather than the traditional singular focus on expanding sewer networks and treatment works. This forms part of IWA's larger agenda to promote inclusive, resilient, water-wise, and sanitation-secure cities.

About the Inclusive Urban Sanitation Stories

The Inclusive Urban Sanitation stories are documenting some of the policies, practices, and approaches that demonstrate how stakeholders especially those in urban areas (e.g., public sector, operators, academics, regulators, and other key actors) are taking part or contributing to Sustainable Development Goal 6 which require water and sanitation concepts and norms to look beyond technology and the usual focus on building infrastructure. Increased focus is on safety, inclusion, environment, public health, and multiple technology solutions tailored to different geographies and socio-economic contexts for building climate-resilient cities. The stories aim to inspire urban stakeholders to discuss ways for advancing inclusive urban sanitation, especially in low- and middle-income countries.