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**Out of the network, out of the game: Reclaiming citizenship through access to water in Medellín**

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**1. ABSTRACT**

This article examines particular ways in which access to water matters politically, not only in its biophysical sense, but also as a powerful tool for citizenship recognition. Drawing on case study conducted in two unserved neighbourhoods located in Medellín, Colombia, this research unravels how households exceeding the urban perimeter secure access to and control over water resources, while the city's public utility company successfully consolidates as a *multilatina*. Despite that access to water has been increasingly subject to market logics, the company has found remarkably difficult to fully control and domesticate this essential resource. Nature (water) comes to play a critical role in the ways that low-income households reclaim what is “truly” public and subvert the neoliberal visions of the water company. By exploring the relationship between infrastructure networks, citizenship and access to water, the article argues that the particular strategies deployed by unserved households are not only shaped by the biophysical and spatial character of water itself, but also by how water is technically differentiated by the water company.

**Key words:** commercialization, unserved households, water, Medellín, Colombia

**2. INTRODUCTION**

Notions of “public” have been highly contested in recent debates regarding access to and control over water in Medellín, Colombia's second largest city. These debates have received significant impetus since the emergence and consolidation of the city's public multi-utility company - *Empresas Públicas de Medellín* (EPM) – as a *multilatina* (regional multinational company). EPM claims that its public character has contributed to the city's development as 30 per cent of its annual revenues are transferred to the Municipality of Medellín for social investment programs. Consequently, the commercialization of water is presented as the ultimate strategy that simultaneously secures economic efficiency and social equity. Nevertheless, thousands of households are denied access to water for non-payment of bills or

because their land tenure status remain illegal or illegitimate. Critics argue that access to water should not be denied to anyone but be conceived as a public good provided by a public company.

To make sense of these divergent accounts, this article focusses on the *practices* of unserved households as they try to secure access to and control over water in contemporary Medellín. At present, an estimated 35,000 households in Medellín remain largely excluded from the city's infrastructure network because their claims to land tenure remain illegitimate (Alcaldía de Medellín, 2012). These households are forced to deploy highly particular and localized socio-technical arrangements based on informal and often illegal sources. Such practices, I argue are influenced by not just the biophysical and spatial character of water itself, but also by how water is technically differentiated by the water company. In this sense, water is not considered a passive object lacking of agency, but rather a resource that embodies powerful cultural, spiritual and symbolic meanings (Swyngedouw, 2004). Additionally, water's dynamic character poses a set of challenges, opportunities and potential barriers to different types of neoliberalism (Bakker 2010; Castree, 2010). By adopting this perspective, I demonstrate that nature's materiality (Bakker and Bridge, 2006; Castree, 2005) can come to influence practices of access to and control over water and to contribute to the current debates on alternatives to privatization/commodification (McDonald and Ruiters, 2012).

The analytical strategy deployed in this research is grounded in the relationship between infrastructure networks, citizenship and access to water in order to reveal how unserved households reclaim what is "truly" public. Drawing on in-depth interviews with community members and leaders, staff of the water company, municipal officials, participation in community meetings and direct observations conducted in 2011 and 2013, the article examines two *barrios* (neighbourhoods) located outside the urban perimeter: *Bello Oriente* and *Pinares de Oriente*. Both *barrios* are located in northeastern Medellín, an area of the city characterized by unstable steep slopes and high water availability due to their proximity to a highly dense technological system of water provision owned by EPM. The inability to extend infrastructure networks to these unserved areas is justified by legal and technical aspects: illegal land tenure status and technical difficulties arising from the difficult topographic conditions of the city's periphery. These areas are predominantly inhabited by *campesinos* (farmers) displaced by the civil war and their struggle to be recognised as citizens has materialized in a struggle over access to water.

What brings attention to these two cases studies is that despite sharing similar geographical and socio-economic conditions, residents of both neighbourhoods employ different practices to secure access according to the types of waters they use. Similarly, the way how the water company intervenes in these unserved areas and their constructed infrastructure largely depends on the kinds of water they use. Paying attention to water's materiality (raw/potable, abundant/scarce, safe/unsafe, legal/illegal, physical loss/commercial loss) allows us to better understand how different practices to secure access to and control over water are constructed and mobilized outside neoliberal frameworks.

The article is organized as follows. It begins with a brief description of Medellín and its multi-utility company to contextualize the conditions under which water is being

provided and controlled. Then it introduces unserved households and their practices to cope with the exclusion from the formal infrastructure network. It brings into discussion two case studies in order to show that practices to secure access to and control over water are highly influenced by water heterogeneity and perceptions of public. It concludes that more attention to nature's materiality can bring valuable insights to the current debates on alternatives to privatization/commercialization.

### 3. MEDELLÍN AND ITS PUBLIC MULTI-UTILITY COMPANY

Innovation and inequality have recently become prominent characteristics to describe contemporary Medellín. In 2013, Medellín was awarded the Innovative City price under a list of 200 cities leaving behind final candidates such as New York and Tel Aviv. The city was selected for its integrated transportation system consisting on metro lines, aerial cable cars, buses and bikes, a network of school and libraries in low-income areas as well as new museums. Additionally, the same year Medellín obtained the title of one of the world's most resilient cities by the Rockefeller Foundation. However, despite this international recognition, Medellín has been ranked as the city in Colombia with the highest level of inequality (El Colombiano, 2 March 2014).

This article uses water services as an optic through which to explore how these two contrasting visions become consolidated in Medellín. One of the main salient features of the city is *Empresas Públicas de Medellín* (EPM), a public multi-company created in 1955 and owned by the Municipality to whom it pays 30 per cent of its utility revenues. The company not only provides water, but also energy, natural gas, telecommunication services and solid waste collection to over 4 million people in Medellín's metropolitan area. EPM has been praised both nationally and internationally for its efficiency and quality of services and as a model to follow in other Latin American countries. One of the most salient features of the company is the partnership it has created with the municipality. According to an article published by *Forbes Magazine* (27 January, 2014), this partnership "has yielded opportunities in marginalized neighbourhoods, fostered inclusive communities, and attracted international recognition and investment".

Over the last two decades, EPM has been increasingly operating in ways comparable to private owned operators by adopting a competitive and profit-driven logic. In 2010, EPM began to search for new frontiers in order to expand its networks in the international market. Nowadays, it has become a leading energy provider in Central America after taking over the electric regulated utilities in Panama, El Salvador and Guatemala. Very recently, the company has acquired the operation of three water treatment plants in Mexico, an eolic park in Chile and has undertaken a fusion with the Swedish telecommunication company Millicom. Outside the country, the company behaves as a private multinational, operating in a highly competitive environment with a capital structure increasingly internationalized. This geographical expansion became a turning point for consolidating EPM as one of the most successful multinationals in the sphere of basic public services. Paradoxically, while EPM registered COP\$ 5,1 billion (US\$ 2,500 million ) in total revenues in 2011 and reports 100 per cent coverage of water supply connection (EPM, 2011), official statistics estimate that the same year, around 46,000 households were disconnected

for non-payment of bills (Personería de Medellín, 2011) in addition to the around 35,000 households that remain largely unserved due to their illegal land tenure status.

In order to reduce disconnection rates and prevent illegal reconnections the municipality and the water company have implemented the program *Litros de Amor* (liters of love), a basic volumetric allocation of 2,5 m<sup>3</sup>/person/month of water free of charge and prepaid water, a system that is being promoted as an innovative tool to redress inequalities in the city. The Mayor of Medellín, Anibal Gaviria, has been broadly supportive of prepaid technologies by claiming that: “This initiative represents a good example of how innovation can address social inequity and violence affecting the city” (El Colombiano, 9 March 2013). Both programs have mobilized not just differentiated technological infrastructures, but also particular discourses of sustainability and efficiency to educate consumers in a new “ethic” of water use.

#### **4. THE SO-CALLED HIGH RISK ZONES**

In Medellín, households that are located in so called ‘high-risk zones’ according to the *Plan de Ordenamiento Territorial* (Land Use Plan) are precluded formal access to basic public services. Technical and land tenure arguments are commonly used by EPM to justify its inability to provide water services to this population. Additionally, the company puts the blame on the municipality that does not authorize them to supply services. Providing water access to households that lack of property rights has been an object of heated debates during the last couple of years in Colombia (Arias Mejía, 2009; Bernal Pulido, 2012; Ramirez Grisales, 2010). Some actors argue that it is inappropriate to invest public resources on illegal settlements as it can contribute to a chaotic and disorganized urban growth. Opponents claim that it is unacceptable to forbid investments to upgrade basic services in illegal settlements because it constitutes a violation of the fundamental rights enshrined in the National Constitution (See decision C-1189 of 2008<sup>1</sup>).

Settlers of the unstable peripheries that are labelled high-risk zones are predominantly campesinos who have been violently forced to migrate to the city as a consequence of the more than fifty years of armed conflict between the state, the left and right-wing groups. From the 1990s onwards, as conflict intensified, thousands of people have been displaced from other municipalities and departments and have found refuge in the perilous slopes that ring the city. They are obliged to compete in the already saturated labour market, which consequently has led to the growth of informal economy. Houses in these areas are mainly built with cardboard, wood and recycled materials. Accessibility is very restricted as they are only reachable by foot through steep and narrow paths. Drainage systems are inadequate and the electricity supply is poor. Illegal settlements are constantly exposed to extreme tragedies triggered by events such as floods, droughts, fires and mudslides and consequently live under permanent uncertainty, abandonment and despair. As their tenure status is illegal, they live under constant threat of eviction and extortion from the municipality and local paramilitaries groups. As such, absence of property rights

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<sup>1</sup> For further information see: República de Colombia, Corte Constitucional, Decision C-1189 of 2008 [M.P. Manuel José Cepeda Espinosa].

and struggles for legalization of land and enjoyment of minimal conditions to guarantee a dignify life constitute the daily realities in these areas.

These informal settlements rather than being a temporary solution, have transformed into a permanent occupation, in which communities have consolidated and are growing in size. In these cases, access to water is increasingly secured through informal/illegal practices. The following two case studies illustrate different practices deployed by unserved households to reclaim access to and control over water, depending on the types of water they use. For the water company, these practices have become a major treat not only to the culture of payment, but also to the company's revenues as they constitute a main factor contributing to unaccountable for water (UFW). According to reports provided by the water company around 35 per cent of Medellín's potable water is reported as unaccountable for water (EPM, 2012). This water is lost through leakages in the distribution networks (physical losses) as well as meter inaccuracies and illegal connections (commercial losses). The growing number of illegal connections shows that the water company faces significant challenges to fully commercialize water and efforts to produce obedient citizens that better respond to the necessities of the market are constantly subverted.

#### **4.1 Bello Oriente: Citizen recognition through collective struggle**

The inhabitants of the barrio Bello Oriente have secured for almost five decades access to and control over water by constructing alternative infrastructures, which operate on community-based models. Due to their proximity to one of EPM's water tanks, the community has built a parasite plug-in infrastructure with their own resources. This self-built system captures wasted raw water that overflows the daily levelling of the company's tank and through a system of pipes water flows kilometres before it reaches individual houses. The infrastructure consists of a cascade aerator, in which raw water flows in a thin layer down steps, a storage tank and a tangled mass of water pipes as shown in figure 1.

Although this infrastructure system appears very chaotic and inefficient; it has a strong organizational logic behind it. The management of this infrastructure is handled by a *fontanero* (person who is paid on a weekly basis by the community). His tasks include repairing tubes from fissures and cracks, fixing blockages, cleaning the tank from suspended objects after a heavy rain and he ensures that every single house has access to a sufficient amount of water. Currently, the system supplies 150 households with almost 24-hour water service. When new residents settle down in the area, access to water has to be arranged through the *fontanero*, who charges a small fee for instalment and maintenance of the system, but not for the amount of water being consumed. However, he does not receive a fix income as it depends on the ability to pay of the households he serves.

For many inhabitants in Bello Oriente, the water that flows from EPM's tank is considered a public good, rather than an economic good. This assumption is based on the grounds that a strict payment system will contribute to the already existing conditions of exclusion and marginality in which people are forced to live. A community leader commented:

The majority of people who settle down in this area have been displaced by

paramilitaries and guerrilla groups. They were forced to abandon their land and to look for refuge in a city that has denied all sorts of rights. We try to help these families as much as we can. Access to water is the main right that is guaranteed to the inhabitants of this barrio. Everybody in Bello Oriente has access to water regardless of their capacity to pay ... Also, households should not experience scarcity while water that runs abundantly in the area, is being wasted by the company.

As a result, this community-based system not only serves to secure access to and control over water, but also it is considered as a power tool for citizenship recognition. In an interview with a leader, he claimed that establishing a water system that does not exclude anybody has generated strong community cohesion and it has significantly facilitated the demand of other basic public services (housing, education, health, etc.). He further added: "Having a unifying position has helped us to voice concerns and to gain social and political legitimacy, which has facilitated negotiations with municipal authorities and staff of the water company".

However, EPM has been quite reluctant to intervene this self-built infrastructure. One of the main reasons is that the water obtained from the tank is categorized by the company as a physical loss, which means that a technical damage is responsible for the overflow of water, rather than the community stealing from the formal network. This explains why a community leader defends the functioning of the system by claiming that: "*Esta conexión no es ilegal es legitima*" (this connection is not illegal, it is legitimate). He further added that if people do not capture the wasted water, it would be diverted to Medellín's river through the sewage system. For many, this constitutes one of the main reasons why EPM despite of being aware of this practice has not imposed any sanction.



Figure 1. Alternative infrastructure built by inhabitants of Bello Oriente to capture raw water that overflows a tank of the company

Source: Marcela López

Despite that community leaders have approached EPM several times to demand technical support; they have not received any concrete response. The community has particularly demanded better water quality as it has deteriorated in the last couple of years.

In an interview, Don Segundo the fontanero of Bello Oriente commented:

Sometimes water comes down from the tank very dirty, particularly after raining. This water is not safe for drinking, people usually get very sick, particularly children. I tell them not to drink this water because it is unsafe, but they are thirsty, they do not have a choice but to drink it ... EPM told us that we have to improve this water because it is not suitable for consumption. We have proposed the construction of a water treatment plant but they told us that it is very expensive. I can build it, I have the skills for that, but I need the support of EPM. We want that our water has similar standards as EPM water.

Although EPM recognizes the importance of providing safe water, a leader questioned the passive position adapted to the company in relation to community claims. For him, the company only takes action when there are potentials for profits. Another community leader interviewed felt that the decision of EPM to tolerate the use of this raw water is mainly driven by environmental concerns such as reducing water losses (physical losses), rather than social concerns such as improving the living conditions of marginalized population.

#### **4.2. Pinares de Oriente: Citizen recognition through individual struggle**

As a survival strategy, inhabitants of Pinares de Oriente secure access to water by connecting illegally to EPM infrastructure networks that supply potable water to regularized areas. These illegal practices are characterized by individual rather than collective connections to the company system leading to the 'spaghetization' of the network (see figure 2). A multitude of pipes that differ in material, length and diameter have been connected to the main distributional system to deliver water to individual households. The major problem with spaghetization is profuse leakage of potable water, which produces not only significant levels of UFW, but also it increases the probability of mudslides due to the topographic conditions of the area. Additionally, the illegal construction of parallel systems of water supply has prevented the efficient functioning of the formal service. As illegal connections are difficult to control for EPM, they are usually detected by formal users who complain to the company about bad water quality, insufficient and irregular water pressure leading to the regularly interruption of the water flow. Consequently, informal settlements have become a source of tension with adjacent formal neighborhoods that experience poor water supply due to the proliferation of illegal connections.

In order to reduce UFW, the illegal connections in unserved settlements have become an important target for the company as they contribute to commercial losses. In 2008, the company introduced the program *Brigadas Comunitarias de Mitigación al Riesgo* (Community Brigades for Risk Mitigation), as part of its social responsibility policy. The program encompasses replacing the spaghetti networks installed by the community for better quality pipes in order to reduce leakages. Additionally, the company installs a communal meter to monitor overall water consumption levels. These services are provided free of charge. Technical interventions are complemented with educational and training programs aiming at introducing new values such as the intelligent use of water, leadership, civil culture and appreciation of what constitutes a "public" and scarce good. According to an interview conducted with a staff member of EPM, this program generates a win-win situation: the company recovers commercial losses while simultaneously low-income households receive access to potable water.

In 2012, the company invested COP\$ 2,200 million (US\$ 1,1 million) to connect 1,886 households located in informal settlements and installed 12 communal meters (EPM, 2012). EPM is working to capture the attention of donors as the program needs to be replicated in a bigger scale in other low-income areas and requires considerable financial resources. The possibilities to obtain international support are very high as the program is being presented as a strategy for realizing the right to water and as an instrument to achieving the targets of the Millennium Development Goals (MDG) planned for 2015 and the principles stipulated in the United Nations Global Compact<sup>2</sup>.



Figure 2: Spaghettization of EPM network  
Source: EPM

The Brigadas Comunitarias program has been widely accepted by the residents of Pinares de Oriente, despite that it is being presented as a temporal solution to mitigate deficiencies in water provision. The desire to be connected to EPM water in this barrio is strongly linked to notions of citizenship and land tenure status. As one old woman said: “We believe that having access to EPM water will give us citizen recognition, therefore, we do not have to fear anymore about being evicted”. This position clearly shows that EPM becomes an influential actor in defining and materializing citizenship rights. Additionally, preferences for EPM water are strongly associated with notions of public. This perspective has been captured by a community leader who claimed: “We want to have access to EPM water like other regularized area in the city because it is public water, we do not want to recur any more to illegality to obtain water”.

Additionally, the majority of residents interviewed expressed the desire to have individual meters over a collective meter. This preference is attributed to the connection between water rights and property rights. When asked an old woman why she prefers individual over collective meters, she said that: “It give us hope that we

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2 EPM participates since 2006 in the United Nations Global Compact, a platform that promotes the engagement of business and non-business organizations in areas of human rights, labour, environment, anti-corruption. For more information: [www.unglobalcompact.org](http://www.unglobalcompact.org)

can reclaim rights over our property, so EPM will never disconnect us from the water service". However, many residents collectively expressed fear about prepaid water meters. As one woman stated: "We hear that EPM is installing prepaid water meters. We do not want prepaid meters in our houses as we cannot afford the costs associated with this service".

High water consumption rates are one of the main challenges faced by EPM. Water consumption habits in the urban peripheries are largely derived from references outside Medellín. In this case, from rural areas where water flows abundantly and it is not serviced by centralized municipal water systems. People who are displaced from rural areas and settle down in Medellín's low-income areas are not accustomed to treating water as a scarce good. Rural inhabitants tend to consume water without any limitation because they simply believe that it is a "gift of nature". Consequently, per capita water consumption in these households is higher compare to the average domestic consumption of a regular customer. According to an interview conducted with an EPM staff member, illegal settlements report an average consumption of 40 m<sup>3</sup>/household/month while formal users report 20 m<sup>3</sup>/household/month.

Beneficiaries of the program expressed that it is very difficult to maintain the consumption levels established by EPM as the number of inhabitants continually grows. In a field visit to Pinares de Oriente with an EPM team, it was observed that the communal meter registered a high increment in water consumption. When one of the company staff asked for the reasons of such increment, a community member said:

We know that EPM established a limit for water consumption. But, two weeks ago came three families displaced from other municipalities by armed groups. We could not refuse to connect them to the EPM system; nobody can live without water... Also, my son got married. We cannot live together; I do not have enough space for more people. He constructed last week a house next to mine and he also got connected to the EPM system. Families are getting bigger and they need more water. It is hard to keep these consumption limits.

Public attitudes towards water can generate a strong challenge for EPM as the company expects to charge for the service in the long term. By law, EPM is not authorized to charge individual households in illegal settlements for water services. Therefore, the company is working together with the Regulatory Commission for Water and Sanitation (CRA) to implement in unserved areas a system of payment called "*venta en bloque*". Instead of charging to individual households, this mechanism consists on issuing a collective bill with the consumption registered in the communal meter. This meter is located in the border between regularized and non-regularized areas. The company affirms that potable water cannot be provided for free as it represents a bad signal for the market. Therefore, it is very clear that the service needs to be reorganized around market principles to permit the commodification of water. To achieve this goal, EPM expects to transfer responsibilities to the *Juntas de Acción Comunal* (JAL) for the management of communal meters and charge of fees. However, one of the major challenges for the company is how to implement a market policy that does not exclude low-income population. Failing to do so, could trigger more disconnection for non-payment, a problem that already persists in regularized areas of Medellín.

## 5. CONCLUSION

This article has attempted to illustrate how unserved households reclaim citizenship status by deploying particular practices to secure access to and control over water in Medellín. Results showed that the form and shape of these diversify practices are highly influenced not only by the biophysical and spatial characteristics of water itself, but also by how water is technically differentiated by the company. Whether water is raw/potable, safe/unsafe, abundant/scarce or it is technically classified as legal/illegal or as a physical or commercial loss can come to influence the ways communities secure access to and control over water and determine the extent to which EPM intervenes infrastructures and modes of community organization. Attention to water's materiality helps to contribute to current debates on alternatives to privatization/commodification by identifying how unserved households construct and contest particular systems of water access, technical infrastructures and notions of citizenship according to the kinds of water they use.

Drawing on two informal barrios in the peripheries of Medellín: Bello Oriente and Pinares de Oriente, this article has illustrated how struggles to secure access to and control over water and to defend citizenship status are highly influenced by the types of water unserved households use. In Bello Oriente, access to raw, abundant, unsafe and legal water has facilitated more cooperation between community members, less dependence on EPM and it has created more awareness about water leakages and waste. For these unserved households the exclusion from the formal infrastructure system, illegal tenure status and precarious living conditions have contributed to the emergence of social organizations and networks, which are increasingly important to demand access to basic public services. For the inhabitants of this barrio, exclusion from the urban development of the city has become an important terrain in the struggle to make visible their rights. Mutual help, cooperation and solidarity have become important strategies to demand citizen recognition.

The case of Pinares de Oriente showed that having access to potable, scarce, safe and illegal water has forced EPM to cooperate with the inhabitants of this barrio through the program Brigadas Comunitarias de Mitigación al Riesgo. This shows that neoliberal approaches towards water services, in this case reduction of commercial losses, have facilitated the implementation of new strategies to allow temporal integration of unrecognized areas in the formal water system. Despite the intention to reduce UFW, the company has found remarkably difficult to fully control the flows of water in these areas. Efforts of EPM to produce obedient citizens that better respond to the necessities of the market are constantly subverted, while commercial losses still constitute a significant part of UFW. This can be partly attributed to the different values and meanings that residents of this barrio articulate to water. For them, having access to EPM water constitutes a primary step towards securing citizenship recognition. Due to the strong link between water rights and property rights, the struggle to be recognized as citizens is characterized as an individual, rather than a collective struggle. Many residents claimed that the installment of a communal meter has brought hope that one day they will be permanently connected to the formal network; however, they prefer to have access to individual meters. In the context of Medellín, this technical devise represents a symbol that acknowledges people as citizens of the city.

In their struggle to secure access to and control over water, unserved households also articulate particular perceptions towards public according to the kinds of water they use. In Bello Oriente, for example, attitudes towards what means “truly” public are constructed around the necessity to provide water to a community that has been historically excluded. For the inhabitants of this barrio, the term public is closely associated with inclusion, good quality and efficiency. In Pinares de Oriente, notions of public are inextricably linked to securing access to EPM water. However, if this water is “truly” public, it has to be affordable, sufficient and legally accessed.

Although the practices deployed by unserved households appear to be too informal or provisional, they reflect particular ways of household/community organization, which cannot be easily transformed or challenged by decisions taken by the water company. These strategies are built on extensive community knowledge about how to redress inequalities and how to deal with deficiencies in water supply provision, therefore, it is important to acknowledge these dynamic forms of securing access to and control over water especially those based on new form of solidarity if water needs to be delivered in a just and equitable manner.

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